

Cumberland County, North Carolina Emergency Operations Plan

February 23, 2006

Prepared By

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Prepared For

Cumberland County Department of Emergency Services

STATEMENT OF APPROVAL

The undersigned approves the Cumberland County Emergency Operations Plan and agrees to the responsibilities assigned to their organization.

Chairman, County Board of Commissioners Date _____

County Manager, Cumberland County Date _____

Sheriff, Cumberland County Date _____

Assistant County Manager, Cumberland County Date _____

Director, Emergency Services, Cumberland County Date _____

Director, Emergency Medical Service
of Cape Fear Valley Health Systems Date _____

Director, Finance Department, Cumberland County Date _____

Director, Health Department, Cumberland County Date _____

Director, Information Services, Cumberland County Date _____

Director, Mental Health, Cumberland County Date _____

Director, Parks and Recreation Department Date _____

Director, Personnel, Cumberland County Date _____

Director, Social Services, Cumberland County Date _____

Director, Solid Waste, Cumberland County Date _____

Director, Tax Administrator, Cumberland County Date _____

Superintendent, Cumberland County Schools Date _____

Mayor, City of Fayetteville

Date

Mayor, Town of Spring Lake

Date

Mayor, Town of Hope Mills

Date

Mayor, Town of Falcon

Date

Mayor, Town of Godwin

Date

Mayor, Town of Linden

Date

Mayor, Town of Stedman

Date

Mayor, Town of Wade

Date

Executive Director, Highlands Chapter
American Red Cross

Date

FOREWORD

The Cumberland County Emergency Operations Plan has been developed to address multiple hazards, which threaten a jurisdiction. Through use of a functional format, the document encourages an Integrated Emergency Management System (IEMS) approach to disasters; and fosters prompt, efficient and coordinated response operations by elements of the emergency organization. IEMS requires a system wide integration of skills, people and resources as well as the utilization of a County Emergency Operation Center. This plan also recognizes Incident Command as an appropriate management system to be applied to all Cumberland County emergency / disaster situations, when required. This document presents a Basic Plan, which serves as a summary document to the support sections. These sections define who will do what and when in an emergency situation. Defining the roles of each response agency reduces the confusion, chaos and conflict during emergencies and significantly decreases vulnerability of the public and their property to hazardous threats.

Cumberland County has adopted the [National Incident Management System](#) (NIMS) approach as well, to incorporate the elements of NIMS essential to efficient management of emergencies and disasters that will involve local, state and federal response agencies. The federal government places criteria for all emergency plans. [Homeland Security Presidential Directive #5](#) (HSPD-5). *"To prevent, prepare for, respond to, and recover from terrorist attacks, major disasters, and other emergencies, the United States Government shall establish a single, comprehensive approach to domestic incident management. The objective of the United States Government is to ensure that all levels of government across the Nation have the capability to work efficiently and effectively together, using a national approach to domestic incident management. In these efforts, with regard to domestic incidents, the United States Government treats crisis management and consequence management as a single, integrated function, rather than as two separate functions".."*

Under NIMS criteria Cumberland County has:

- Adopted the [Incident Command System](#) (ICS 200)
- Provided training for the [NIMS Awareness Course](#)
- Determined which NIMS requirements already have been met.

Developed a strategy and timeframe for full NIMS implementation by FY 2007.

This plan does not attempt to define for each agency how to perform the tasks. The manner in which the tasks are to be performed is contained in the agency's Standard Operating Guidelines, which are contained in the Implementation Document that supports this plan.

An additional companion document entitled "IMPLEMENTATION DOCUMENT" **MUST BE CONSULTED WHEN IMPLEMENTING PORTIONS OF THIS PLAN.** This document contains agency agreements, Standard Operation Guidelines, agreements between government and private organizations, memorandums of understandings, organizations charts, agency checklist, etc.

This plan meets the requirements of FEMA planning guidance, CPG 1-8, CPG 1-8A, NRT-1 and the legal responsibilities identified in North Carolina General Statutes, Chapter 166-A. It provides all the necessary elements to insure that local government can fulfill its legal responsibilities for emergency preparedness. The plan is a realistic reflection of the way emergency response will be carried out when an event occurs, and all agencies tasked under this plan contributed to its development.

This plan upon approval and adoption by the Cumberland County Board of Commissioners, supersedes Cumberland County Emergency Operations Plan for Multi-Hazards dated October 1989,

all changes there to, and any other plan prior to this date. All previous plans are rescinded by this document.

INSTRUCTIONS FOR USE

It is intended that this plan, in conjunction with the implementing document, be used by the Cumberland County response organizations to obtain maximum use of existing resources, organizations and systems in their response to emergencies and disasters that could and/or have occurred in the County. The format utilized is:

BASIC PLAN: To be used by chief executives and policy officials.

SUPPORT SECTIONS: Addresses the specific functions for use by the operational managers.

IMPLEMENTATION DOCUMENTS: Contains technical information, reference maps, details and methods (such as Standard Operating Guidelines and checklist) for use by emergency response personnel.

Each part of the plan contains a purpose statement for that section. All individuals with assigned responsibilities should be familiar with the entire plan; however, added emphasis must be given to those sections for which they are responsible. While all circumstances cannot be addressed, the content of this plan should be used as a guide for those things that do occur but are not specifically addressed herein.

Distribution List:

Agency	# of Copies
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INTRODUCTION TO THE EMERGENCY MANAGEMENT PROCESS

Background of Emergency Management Agencies

A formal program of civil defense began in the United States in 1916, when Congress established the Council of National Defense to direct state and local defense councils in war-related activities. At that time an enemy defined civil defense as a system that protects civilian populations and private and public property against attack. When World War I ended and the threat of attack with it civil defense activities were dissolved.

With the threat of a Second World War in 1940, President Roosevelt re-established the Council of National Defense. This Council was to coordinate the effort to re-arm the country. It also issued guidance on blackouts and shelters. In 1941, an executive order established the Office of Civil Defense (OCD). This office coordinated civil defense on a regional and local level. The OCD coordinated volunteers, personnel, equipment exchange agreements, evacuation plans, and the synchronization of blackouts and air raid drills. When World War II ended in 1945, the OCD was terminated.

Congress broadened the definition of civil defense in 1950. They also passed The Civil Defense Act that directed the newly formed Federal Civil Defense Administration to develop a system to protect life and property from disasters caused by an enemy attack. As passed in 1950, civil defense was mandated by Congress as primarily a state and political sub-division responsibility, with the role of the Federal government to provide information, guidance and assistance.

Over the next 25 years emergency programs for specific hazards were scattered around the national government in various Federal agencies. During this time, the realization was growing that:

- Managing an emergency successfully included mitigating and recovery aspects as well as preparation and response.
- Generic emergency management strategies could apply whether the emergency is a flood, earthquake, drought, fire, or a terrorist attack.

In 1958 the Civil Defense Act of 1950 was amended to make civil defense a joint Federal and State / local responsibility; it also authorized the provision of civil defense monies to State and local governments for civil defense staff personnel and administrative expenses on a matching basis not to exceed 50 percent. The purpose of the last modification was to provide financial incentives to State and local governments to hire emergency preparedness personnel and to build a nationwide cadre.

What is known as the EMA program (Emergency Management Assistance) developed from this concept? It is the largest program in the National Civil Defense Budget.

In 1972 the Office of Civil Defense (OCD) was abolished and the Defense Civil Preparedness Agency (DCPA) was created. This was a result of a National Security Decision Memorandum.

In 1979 under the Carter administration, Congress established the Federal Emergency Management Agency (FEMA). The primary purpose of FEMA was to combine several other programs into a central organization.

Amendments to the Civil Defense Act in 1980 mandated FEMA to work with the State and local governments to assist them in setting up emergency management programs. Amendments to the Civil Defense Act also provided for "Dual Use" of funds, meaning that Federal funding to the states may be used to prepare for and respond to natural and technological disaster to the extent that the use of funds is consistent.

NOTE: This history of Emergency Management and Civil Defense is an edited version of the material contained in: Emergency Management Institute Introduction To Emergency Management, 1990. Emmitsburg MD: National Emergency Training Center.

History of Cumberland County Emergency Management Agency

On May 22, 1954 a joint meeting took place between the Cumberland County Board of Commissioners and Fayetteville City Council. During this meeting it was motioned and adopted that the County of Cumberland and the City of Fayetteville establish a Civil Defense Agency. This agency would be known as the Fayetteville - Cumberland County Civil Defense Agency (formerly the City of Fayetteville Civilian Defense Office). The first director was "Colonel" Hans Larsen, and the assistant director was "Colonel" Stewart Wood. The original office was located on Gillespie Street, and moved to Arsenal Avenue in 1971. The Emergency Operations Center (EOC) was originally located in the basement of the Old City Hall and remained there until it moved to the Law Enforcement Center Building on Dick Street.

In 1973, the North Carolina Legislature changed the name of Civil Defense to that of Civil Preparedness. It also changed the title of Director to Coordinator. The Fayetteville-Cumberland County Civil Defense Agency became the Fayetteville-Cumberland County Civil Preparedness Agency. Colonel Larsen retired as the director in 1973 and Colonel Wood was appointed as the coordinator and served in that capacity until he retired in 1975. Mr. William C. Finch succeeded Colonel Wood as coordinator.

In 1975 the agency relocated from Arsenal Avenue to its present location in the Law Enforcement Center Building on Dick Street. Mr. Finch served as coordinator until 1982 when Mr. John McInnis was appointed as coordinator. Mr. McInnis retired in 1995 and Ms. Cheryl Grabowski was named Director.

In 1984 the Fayetteville-Cumberland County Civil Preparedness Agency was redesignated as the Cumberland Emergency Management Agency. The Staff currently consists of a Director, Deputy Director and Administrative Assistant.

In 1995 Cheryl Grabowski was named the Director of the Fayetteville-Cumberland County Emergency Management Agency and served until 1999.

In 2000 Harold Beverage assumed the position of Director of the Fayetteville-Cumberland County Emergency Management Agency and served until 2001.

In 2001 Ronald "Doc" Nunnery assumed the position of Emergency Services Director and the Fayetteville-Cumberland County Emergency Management functions under Emergency Services.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

BASIC PLAN

I. PURPOSE

This plan predetermines actions that are to be taken by the governmental agencies and private organizations of Cumberland County to reduce the vulnerabilities of people and property to disaster and establish capabilities to respond effectively to the actual occurrence of a disaster. It also identifies the critical/vital facilities that must be managed during a disaster.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. Cumberland County is located in the southeast section of North Carolina. It is bound on the east by Sampson County, on the south by Bladen and Robeson Counties, on the west by Hoke County and on the north by Harnett County. Fort Bragg Military Reservation and Pope Air Force Base are adjacent to Cumberland County. The economy is based on manufacturing, agriculture, tourism and the military.
2. The area of Cumberland County encompasses 661 square miles. There are eight municipalities within the county. Fort Bragg and Pope Air Force Base military installations are adjacent to the county. The population of Cumberland County is approximately 302,963 and the estimated population at Fort Bragg and Pope Air Force Base is 53,000.

<u>Municipality</u>	<u>Form of Government</u>	<u>Population</u>
Fayetteville	Mayor / Council	127,558
Hope Mills	Mayor / Council	10,900
Spring Lake	Mayor / Council	8,566
Stedman	Mayor / Council	659
Wade	Mayor / Council	457
Falcon	Mayor / Council	384
Linden	Mayor / Council	169
Godwin	Mayor / Council	73
Ft. Bragg/Pope AFB	Military	53,000
Unincorporated	County Manager	101,197

3. Other Characteristics in the County:

County Park - off Highway 87 South (Gray's Creek Area)
 Cape Fear River - traverses throughout the county entering from Harnett, traveling southeast through the county to Bladen County.
 Fort Bragg Military Reservation and Pope Air Force Base border the county to the northwest.

4. State roads are the major traffic routes for commercial and tourist traffic through the county. Hurricane evacuees and persons seeking shelter from coastal counties could possibly use highway routes into and through Cumberland County.

The major traffic arteries are:

<u>Road</u>	<u>Direction</u>
Interstate 95	Southern County Line (mile marker 39) to Northern County Line (mile marker 69).
US 13	Traverses the county from the Eastover area at US 301 east to Sampson County.
US 301	Runs parallel to Interstate 95 in a north / south direction.
US 401	From the south in Hoke County to the middle of the county, turning north to Harnett County
NC 24	Enters the county from Harnett County, through Fort Bragg and Fayetteville east to Sampson County.
NC 53	Intersects with Highways 24 and 210 just east of the Cape Fear River, 53 and 210 run southeast together, splitting in the Cedar Creek area of the county.
NC 87	Enters the county in the northwest quadrant from Harnett County, running with NC 24 to a split just north of Spring Lake; splitting at Fort Bragg becoming Highway 87 (Murchison Road) to downtown; runs with NC 24 and 210 through Fayetteville turning south going to Bladen County line (Gray's Creek area).
NC 210	Enters the county from the northwest quadrant to Spring Lake, joins with Highway 87 (Murchison Road) going through Fayetteville, splits with Highway 87, crosses the Cape Fear River joining Highway 53 and splitting in the Cedar Creek area continuing to county line near Beaver Dam area.
NC 59	Begins at US 401 in Fayetteville running south through Hope Mills to US 301 / I-95 Business. At US 301 / I-95 Business the name changes to Chicken Foot Road and goes to the county line.

5. Airport

The Fayetteville Regional Airport provides commercial air service to the County and back-up service to the military air fields at Pope Air Force Base and Simmons Army Airfield. The airport is located on Airport Road off of US 301 South in Fayetteville. The cargo terminals are located on Doc Bennett Road.

<u>Airport</u>	<u>Runway</u>	<u>Runway</u>	<u>Length</u>
Fayetteville	04 / 22		7200 ft x 150 ft
	10 / 28		4800 ft x 150 ft
Grays Creek	17 / 35		3500 ft x 30 ft
Pope AFB	05 / 23		7500 ft x 150 ft
Simmons AAF	09 / 27		4600 ft x 100 ft

6. Public roadways within Cumberland County are almost exclusively owned and maintained by the NC Department of Transportation. The NC Department of Transportation has identified a number of key bridges that are crucial for the safe movement of traffic through the county. Similarly these bridges are critical for intra-county movement. Blockage of these roads could temporarily isolate areas of the county. These are:

<u>Bridge #</u>	<u>Location</u>	<u>Route</u>
85	Cape Fear River US 301/I-95	US 301 N/S
219	Cape Fear River Person Street	Eastern County/ Western County
111	Cape Fear River I-95 South	North/South
109	Cape Fear River I-95 North	North/South

7. There are four major rail systems that operate in Cumberland County. These are Aberdeen & Rockfish, Amtrak, Cape Fear and CSX.

<u>Railroads</u>	<u>Location</u>	<u>Length of Track</u>
Aberdeen & Rockfish	East/West	14 miles
Amtrak	Runs North/South 30 miles (main line) On the CSX lines	
Cape Fear	North / South	
	Fort Bragg only Inactive	16 miles 9 miles
CSX	North/South	30 miles (main line)

8. Southern areas of the county that lie within the 100-year floodplain are identified on the National Flood Insurance Program (NFIP) maps located in the County Engineers Office and the Cumberland Emergency Services Office. Low lying areas along the Cape Fear River are subject to flooding during heavy rains. For additional information on flooding and the NFIP, contact the County Engineers Office.

9. Hazards

The county is exposed to many hazards, all of which have the potential to disrupt the community, cause damage, and create casualties. Potential hazards (natural, technological, and national security) for the county are:

- a. Hurricanes
- b. Drought / Floods
- c. Severe thunderstorms
- d. Tornadoes
- e. Severe cold weather/winter storms
- f. Extreme heat
- g. Hazardous materials
 - Transportation incidents
 - Fixed facility incidents
 - Unidentified spills or dumping activity
- h. Large structure fire, firestorm
- i. Forest or wild land fire
- j. Landfill fire
- k. Severe bridge damage
- l. Dam Failure
- m. Natural Gas Pipeline ruptures (12 inch main)
- n. Aircraft crashes (civilian / military)
- o. Mass casualty incidents
- p. Civil disorder / Riot / Vandalism
- q. Sabotage / Terrorism
- r. National security emergency
- s. Power Failure
- t. Animal Protection

B. Assumptions

1. The occurrence of any one or more of the emergency / disaster events previously listed could impact Cumberland County severely, and include several of the following possibilities:

- a. Loss of electric service.
- b. Loss of water distribution and storage system.
- c. Loss of part or all of waste and treatment system.
- d. Severance of road/highway network.
- e. Necessity for mass care and feeding operations.
- g. Need for auxiliary power.
- h. Need for debris clearance.
- i. Multiple injuries / fatalities.
- j. Drastic increase in media attention.
- k. Damage to the communications network.
- l. Damage to the telephone network.
- m. Severe economic impact.
- n. Increased number of vectors (insects).

- o. Need for official public information and rumor control.
 - p. Need for State or Federal assistance
 - q. Re-entry of the public into damaged / evacuated areas.
 - r. Damage to vital records.
 - s. Need for damage assessment.
 - t. Solicited / Unsolicited goods.
 - u. Contamination of private wells.
 - v. Exhaustion of local resources.
 - w. Lack of depth of staffing.
 - x. Loss of facilities vital to maintaining essential services.
 - y. Environmental impact / wildlife, natural resources destruction.
 - z. Need for management of reconstruction.
 - aa. Need for coordination of staged resources.
 - bb. Damage to historical sites.
 - cc. Isolation of populations.
 - dd. A Presidential Disaster Declaration, etc
 - ee. Coordination of donated goods/volunteer coordinator.
2. The occurrence of one or more of the previously listed emergency / disaster events could result in a catastrophic situation, which could overwhelm local and state resources.
 3. It is necessary for the county and municipalities to plan for and have the capability to carry out coordinated disaster response and short-term recovery operations utilizing local resources. However, it is likely that outside assistance would be necessary in most major disaster situations, which could affect the county.
 4. There is a high probability that emergency and disaster occurrences could result in disruption of government functions. This necessitates that all levels of local government and departments develop and maintain SOGs to ensure continuity of government should a disaster occur. These guidelines will address depth of staffing, line of succession, and mode of operation.
 5. Most natural disasters have the potential to leave at least some part of the county affected and on it's own for a period of time. All individuals should be encouraged to be self-sufficient for a period of three (3) days by properly training and preparing for these events.
 6. Officials of the county and municipalities are aware of the threat of a major emergency or disaster and will fulfill identified responsibilities as needed to the extent possible.
 7. Identification of vital facilities will make it possible to predict the consequences of disaster, and to expedite the response of necessary resources from outside the area of impact.
 8. Knowledge of vital facilities will reduce the dependence on unwritten and assumed information.
 9. Knowledge of vital facilities will expedite damage assessment and loss estimation.
 10. The identification of vital facilities allows for the prioritization of post-disaster areas and restoration.

III. CONCEPT OF OPERATIONS

A. Preparedness

1. As required by General Statutes 166A-2, it is the responsibility of County government to organize and plan for the protection of life and property from the effects of hazardous events or disasters.
2. Planning and training are necessary and integral parts of emergency and disaster preparation and must be a prerequisite to effective emergency operations.
3. Facilities vital to the operation of county and local government have been identified. These facilities will receive priority for restoration of service. The Vital Facilities Listing is maintained in the Cumberland Emergency Management.
4. Coordination and Mutual-Aid Agreements with adjoining jurisdictions are essential when events occur that impact beyond county or jurisdictional borders.
5. Vital facilities may serve as the basis for establishing mutual aid and statements of understanding with other governmental or non-governmental agencies.
6. It is the responsibility of the elected officials to insure that all legal and sensitive documents of both a public and private nature recorded by designated officials be protected and preserved in accordance with existing laws, statutes, and ordinances.

B. Response

1. In declared emergencies / disasters, direction and control will be managed by the Policy / Administration Group.
2. The County Emergency Operations Center (EOC) will be staffed and operated as the situation dictates. When activated, ranking representatives from a number of local government, municipalities, private sector and volunteer organizations to provide information, data, and recommendations to the Policy / support operations Administration Group. The City of Fayetteville Operations Center is designated as an alternate EOC for the county.
3. When an emergency situation develops, the senior elected official or the designee of the jurisdiction (as defined in GS 14-288.1) may declare a State of Emergency to exist within the jurisdiction (or a part thereof) and begin implementing emergency procedures. (See IV, Authorities and References).
4. The County Manager and County Emergency Services Director will coordinate county resources. The Mayor or his designee will coordinate and control the resources of each of the municipalities.
5. The Public Information Officer will utilize all available media outlets for the dissemination of emergency information to the public.

6. Should local government resources prove to be inadequate during emergency operations; requests for assistance will be made to other jurisdictions, higher levels of government, and / or other agencies in accordance with existing mutual-aid agreements and understandings. Requests for State or Federal resources must be made through the Cumberland County Emergency Services to the Eastern Branch Office of the NC Division of Emergency Management and forwarded to the State Division of Emergency Management.

C. Recovery

1. Termination of a State of Emergency shall be declared by the authority by which it was proclaimed. (See IV, Authorities and References).
2. The Assistant Finance Director will be the Disaster Recovery Manager and serve as the liaison to the State and Federal Government on Public Assistance and Damage Survey Reports.
3. The Operations Officer will manage the individual assistance programs and donations program by providing information to the public on where to go for assistance.
4. Damage Assessment Teams will be sent out to collect damage information on areas impacted by the disaster. The information will be evaluated and forwarded to the State.

D. Mitigation

Following any major emergency / disaster event, a critique will be held to evaluate the jurisdiction's response to the event. A critique will include the following issues related specifically to recovery:

1. Mitigation of potential problems through use of Hazard Mitigation Grants.
2. Knowledge of vital facilities allows for the implementation of planned mitigation approaches / projects in an attempt to reduce vulnerabilities.
3. Plan revision based on lessons learned.
4. Unmet needs status.
5. Management of Donated Goods.
6. Interagency Cooperation.
7. Damage Survey Report process and documentation.
8. Training needed.

IV. AUTHORITIES AND REFERENCES

A. General

1. Actions taken during emergency / disaster events require that legal guidelines are followed to assure protection of the general public and to maintain law and order in the County / Municipalities.

2. Verbal and written mutual aid agreements exist between some agencies within Cumberland County and its municipalities.
3. Agencies tasked with responsibilities in the Emergency Operations Plan are responsible for the development of SOGs to implement their particular function.

B. Selected References

The Emergency Operations Plan is based on the references listed below:

1. Federal Laws
 - a. Civil Defense Act of 1950, Public Law 81-920, as amended
 - b. Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended by Public Law 100-707 (The Stafford Act)
 - c. OSHA 1910.120
 - d. Emergency Planning and Community Right-to-Know Act (EPCRA)
 - e. Superfund Amendments Reauthorization Act (SARA Title, III)
 - f. FAA Authority (FAR) to close airspace over disaster areas
2. State Laws
 - a. N.C. General Statute 166-A, Emergency Management Act
 - b. N.C. Governor's Executive Order 73
 - c. N.C. Oil Spill Act
 - d. N.C. Community Right-to-Know
3. Local Ordinances
 - a. Cumberland County Emergency Management Ordinance
 - b. Proclamation of a State of Emergency
 - c. Local Emergency Planning Committee Bylaws and Roster
 - d. Mutual Aid Agreements for Fire
 - e. Mutual Aid Agreements for Emergency Medical Services and Rescue
 - f. Mutual Aid Agreements with Municipalities
 - g. Agreements with American Red Cross
 - h. Agreements with County School System
 - i. City of Fayetteville Emergency Management Ordinance

V. PLAN DEVELOPMENT AND MAINTENANCE

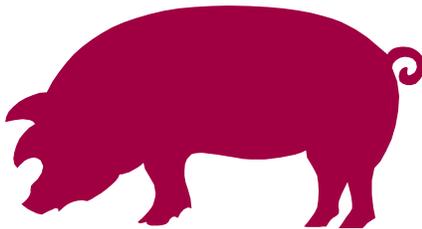
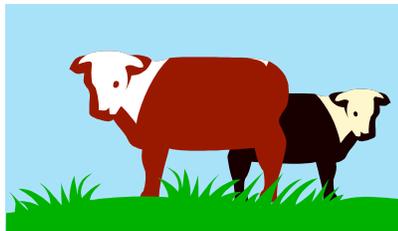
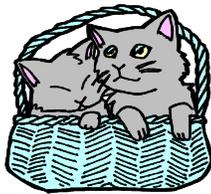
- A. Each agency of local government is responsible for the development of SOGs in the support of this plan. A copy will be provided to the Cumberland Emergency Services for file and as a supporting implementation document.
- B. The County / City Managers mandate the development and regular review of this plan by all officials involved and will coordinate necessary revision efforts through the Emergency Services. This shall include a critique of the actions taken in support of the plan following any event requiring implementation of the plan.
- C. This plan shall be exercised annually in lieu of actual responses to real emergency events.

VI. CONTINUITY OF GOVERNMENT

- A. The line of Succession for the County Board of Commissioners proceeds from the Chairman to the members of the Board in accordance with the Board policy.
- B. Each department / agency is responsible for the preservation of essential documents / records to ensure the continued operational readiness of their agencies and to comply with existing laws.
- C. Vital Facilities
 - 1. Several categories of vital facilities have been identified during the planning process. The following categories of facilities have been identified as being critical to remain in service during times of disasters:
 - a. Communication facilities/networks
 - b. Water distribution
 - c. Electrical distribution components
 - d. Waste water components
 - e. Shelters
 - f. Medical facilities, congregate care facilities, day-care facilities
 - g. Transportation network
 - h. Correctional facilities
 - i. Landfill and debris collection sites
 - j. Government buildings
 - k. Helicopter landing sites
 - 2. Cumberland County Emergency Services maintains a list of public and private sector resources that could be utilized during an emergency/disaster response.
 - 3. Cumberland County vital facility information is updated on a regular basis.

Cumberland County Animal Protection Plan

A procedure to protect wild and domestic animal resources
in the event of a large-scale emergency in Cumberland County



Developed By:

Cumberland County Emergency Management

North Carolina Cooperative Extension, Cumberland County

And

Cumberland County Animal Control

May 2000

**Cumberland County
Animal Protection Plan**

Acknowledgements

Cumberland County Emergency Management wishes to acknowledge the contributions of the following organizations and individuals in development of this plan.

Cumberland County Animal Control

North Carolina Cooperative Extension, Cumberland County

Wake County Emergency Management

1.0 Introduction

1.1 Purpose Statement:

To protect wild and domesticated animal resources, the public health, the public food supply, the environment, and to ensure the humane care and treatment of animals in case of a large-scale emergency, including hurricanes, tornadoes, floods, wind driven water, drought, fire, explosion, building collapse, commercial transportation accidents, chemical spills, nuclear power plant accidents, or other situations that cause animal sufferings.

1.2 Scope:

This Plan is intended for use by local government to take immediate action in providing a means of care and control to minimize animal suffering in the event of a large-scale emergency. This action will be aimed at all animals that may need help whether such animals are owned, stray, domestic, or wild.

The Director of Emergency Management or authorized representative(s) may place into effect established plans and procedures and direct both the emergency and recovery aspects of the incident. He may deviate from these procedures when, in his judgment, immediate and direct action is necessary to protect the public safety.

2.0 Affected Agencies / Responsibilities

2.1 Primary Agencies:

- A. Cumberland County Animal Control
 - 1. Provide and coordinate personnel, equipment, and shelter as required to protect domestic and non-domestic animals.
- B. Cumberland County Emergency Management
 - 1. Coordinate support agencies to manage animal protection in large-scale emergencies.
 - 2. Activate the Emergency Operations Center, if necessary. Responsible for overall direction and control of the emergency incident.
- C. North Carolina Cooperative Extension, Cumberland County
 - 1. Coordinate support agencies primarily focused on managing protection of non-domestic animals

2.2 Support Agencies:

A. Cumberland County Sheriff's Office

Provide trained personnel and resources to assist in search and recovery efforts of animals in the impacted area.

B. Cumberland County Department of Environmental Services:

Coordinate the disposal of deceased animals that may impact the public health.
Provide services to control injuries / bites / diseases related to the protection of animals.

C. Cumberland County Veterinarian Association:

Provide a list of available volunteers to aid in the protection of animals. When possible, provide personnel, equipment, and shelter as required to shelter and care for pets of evacuated citizens and in cases when established shelters are filled or destroyed.

D. American Red Cross:

Provide volunteers to assist in the protection of animals during an emergency shelter situation. Work with Environmental Services personnel in the coordination of animal shelters in Cumberland County.

E. Municipal Animal Control:

Provide personnel and equipment as required within the respective corporate limits to protect domestic and non-domestic animals.

F. N.C. Department of Agriculture:

The N.C. Department of Agriculture (NCDA) will be responsible for the enforcement of state regulations concerning livestock health and the movements of animals affected by those regulations. NCDA will also assist in providing information and direction whenever possible with regard to the general health of livestock in these areas.

G. NCSU College of Veterinary Medicine:

Provide a list of available volunteers to aid in the protection of animals. When possible, provide personnel, equipment, and shelter as required to shelter and care for livestock, wild animals, and injured domestic and non-domestic animals.

H. SPCA of Cumberland County:

Coordinate personnel, equipment, and shelter as required to shelter and care for domestic pets.

2.3 Additional Resources:

A. North Carolina Veterinary Medical Association:

Provide personnel to aid in the medical treatment of animals. Activate regional Veterinary Medical Assistance Teams (VMAT).

B. Humane Society of the United States:

Provide personnel and equipment as required to rescue and care for domestic and non-domestic animals.

C. American Humane Association:

Provide personnel and equipment as required to rescue and care for domestic and non-domestic animals.

D. N.C. Wildlife Resource Commission:

Provide personnel and equipment as required to protect wildlife.

E. Private Boarding Kennels, Stables, Dog Clubs, and Horse Clubs:

Provide personnel, equipment, and shelter as required to shelter and care for pets from evacuated citizens and in cases when established animal shelters are filled or destroyed.

F. Private Farms:

Provide shelter and supplies to care for displaced livestock.

G. Pinehurst Harness Track / Moore County Equine Emergency Response Unit:

Provide shelter, supplies and a Horse Rescue Ambulance to care for and rescue displaced livestock.

3.0 Assumptions

- A. The owners of pets or livestock, when notified of an upcoming emergency, will take reasonable steps to shelter and provide for animals under their care and / or control.
- B. Natural, technological, or manmade disaster could affect the well-being of domesticated or non-domesticated animals.
- C. The County plans for emergency situations and to carry out response and recovery operations utilizing local resources. Outside animal care and rescue assistance would likely be available in most large-scale emergencies affecting the county.
- D. Animal protection planning should ensure the proper care and recovery of animals impacted during an emergency. These plans may include measures to identify housing and shelter for animals, communicate information on the public, and proper animal release.
- E. Public information statements will be issued through the various media outlets. This will include locations where domestic and non-domestic animals (including livestock and wild animals) may be accepted during emergency situations.
- F. A large-scale emergency in Cumberland County may warrant immediate response from State and Local personnel, agencies, and organizations. However, emergency situations may become compounded due to the nature of the emergency and also require activation of additional specialized agencies through mutual aid.
- G. Through practical animal protection planning and organization, disaster relief efforts will be more effective.
- H. Shelters that have been established for disaster victims will not accept domestic animals. However, if an evacuee comes to the shelter with their pet(s), efforts will be made to assist in locating the domestic animal(s) away from the general populace and given proper care. If pet carriers or other similar containment equipment can be obtained in sufficient quantities and within a reasonable period of time, the Cumberland County Animal Control Department may locate such containment equipment in close proximity to a shelter so that pet owners may care for their animals themselves. Companion animals and wildlife, must however; remain outside of the shelter for human evacuees or disaster victims.

4.0 Concept of Operations

4.1 General:

- A. The primary and support agencies identified in this Standard Operating Procedure will manage and coordinate local animal protection activities. These agencies will use established animal protection and support organizations, processes, and procedures. Responsibility for situation assessment and determination of resource needs in the event of a large-scale emergency lies primarily with the Cumberland County Animal Control, Cumberland County Emergency Management and local incident coordinators.
- B. Requests for animal protection assistance and resources such as food, medicine, shelter material, specialized personnel, and additional veterinary medical professionals will be transmitted from the local Emergency Management Office to the State Emergency Management Office. Should the need for Federal or State resources exist, the state Emergency Operations Center will coordinate the request for assistance.
- C. Animal protection operations will be managed under an Incident Command System (ICS). Public Health concerns will be managed in accordance with appropriate Cumberland County plans and procedures.
- D. Animals Included Under the Plan:
 - 1. The sheltering and protection of domestic and non-domestic animals (including livestock) are the responsibility of their owners.
 - 2. Domestic and non-domestic animals that are lost, strayed, incapable of being cared for by their owners, and / or in danger to themselves or the public will be the responsibility of municipal or Cumberland County Animal Control officials, the SPCA of Cumberland County, or other identified agencies. These animals will be sheltered, fed, and, when possible, returned to their owners. Animals that cannot be returned to their owners will be disposed of in accordance with established animal control procedures.
 - 3. Wild animals should be left to their own survival instincts. Wild animals out of their natural habitats that are in danger either to themselves or the public will be the responsibility of the N.C. Wildlife Resource Commission personnel, in cooperation with local animal control officials, and returned to their natural habitat when practical.

4.2 Notification:

This plan and implementing procedures will be activated in the event of a large-scale emergency causing a significant need for animal protection. The Cumberland County Animal Control Director in cooperation with the Cumberland County Emergency Management will determine when these procedures will be implemented and notify the appropriate primary, support, and mutual aid agencies. A call down notification system will be maintained by the Cumberland County Animal Control Director.

4.3 Communications:

Communications between primary and support agencies will occur primarily through radio, telephone, facsimile and cellular telephone transmission. Amateur radio may be used as a backup system when other communications fail due to the nature of the emergency situation.

4.4 **Public Information (PI):**

The Cumberland County Public Information Officer or designated representative will be responsible for the coordination of all media activities and press releases associated with the protection of animals.

Public Information responsibilities may include:

1. Notifying the public of appropriate animal shelters that are receiving lost / stray animals, animals that cannot be cared for, or animals that need immediate medical assistance.
2. Delivering instructions to the public on how to prepare their pets for an impending emergency (See attached Annex A) and / or instructions for minor “at home” medical responses for pets injured in an emergency situation (Annex to be developed).
3. Initiating a system to direct inquires on lost pets to the appropriate animal shelters.
4. Other information as appropriate to the situation.

4.5 **Response:**

The owners of pets and / or livestock, when notified of an emergency, will take all reasonable steps to shelter and provide for animals under their control.

A. **Search and Rescue**

1. **Domestic Pets:**

Domestic pets loose or in need of assistance due to the emergency or to the death or evacuation of their owners will be the responsibility of municipal and County Animals Control officials.

2. **Livestock:**

Livestock loose or in need of assistance due to the emergency or to the death or evacuation of their owners will be the responsibility of municipal and County Animal Control officials.

3. **Wild Animals:**

Wild animals out of their natural habitat that are endangering either themselves or the human population will be the responsibility of N.C. Wildlife Resource Commission personnel in cooperation with municipal and County Animal Control officials.

4. **Stranded Animals:**

In the event that animals cannot be rescued due to the emergency situation, food and medical assistance may be delivered to the animals by the appropriate agency when possible.

5. **Additional Aid:**

In the event that municipal and County animal control resources are unable to meet the need for search and rescue personnel, a representative from County Emergency Management will request search and rescue assistance from the American Humane Association and / or the Humane Society of the United States and / or other

available rescue groups.

B. Shelters

1. Evacuated Domestic Pets:

a. Private Resources:

Domestic pets from evacuated citizens will be sheltered at private boarding kennels and veterinarian hospitals as close to the evacuation shelter as possible.

Upon the activation of evacuation shelters for citizens, a representative from the Cumberland County Veterinarian's Association will be contacted by the shelter manager and requested to initiate the opening of prearranged private boarding kennels and veterinarian hospitals as boarding facilities.

Each of the citizens' evacuation shelters will have an available veterinarian volunteer on the premises to evaluate the pets of evacuated citizens. Pets with significant injuries or illnesses will be transported to an animal hospital designated for the medical treatment of animals.

A representative of Cumberland County Animal Control will be responsible for ensuring the transportation of evacuated pets to either the shelter facility or hospital and in ensuring that a tracking system is in place to reunite sheltered pets with their rightful owners.

b. Animal Evacuation Shelter:

If the need arises, the county may open an evacuated pet shelter. Pets of evacuated citizens will be transported to this shelter as citizens arrive with their pets at the citizen's evacuation shelters.

c. Evacuated Citizens with Special Needs:

Citizens with special needs (individuals with mental or physical handicaps who require evacuation assistance) may require assistance in evacuating their pets.

If special needs individuals are unwilling or unable to make special arrangements for the sheltering of their pets, then the individuals and their pets will be transported to the evacuation shelter. Upon arrival at the shelter, pets not trained specifically to assist the individual (e.g. seeing eye dogs) will be transported to a private boarding facility or other appropriate facility. In the event that the individual and the pet cannot be separated due to the individual's infirmity, the pet will be sheltered in the same facility in a separate room or area.

2. Stray / Lost Domestic Pets:

All stray / lost domestic pets recovered by Animal Control will be sheltered at the Cumberland County Animal Shelter or the SPCA of Cumberland County shelter. Any pets whose owners cannot care for their pets or domestic pets found by citizens will also be sheltered at these locations. Private boarding kennels and veterinarian shelters will serve as overflow shelters and will be requested to open through the Cumberland County Association representative as necessary. Unclaimed animals will be disposed of according to county procedures.

3. **Evacuated and Stray/Lost Livestock:**

Due to the size of most livestock and the inability to transport large numbers of farm animals, owners are expected to develop shelter and / or evacuation plans for their animals.

When possible, livestock may be sheltered at the veterinary hospital at the NCSU College of Veterinary Medicine, private stables, the Hunt Horse Complex and the Pinehurst Harness Track.

Private farms located throughout the county may be used as shelter facilities for livestock. In the event of an emergency situation, Cumberland County Cooperative Extension will contact prearranged farms and request their assistance in sheltering operations.

4. **Wild Animals:**

When possible, wild animals outside of their natural habitat endangering the public will be transported back to their natural habitat. If the responsible agencies are unable to transport the animal back to its natural habitat due to the nature of the emergency or to injuries the animal sustained, the animals will either be transported to the County Animal Control Shelter or the NCS College of Veterinary Medicine for shelter or medical treatment or disposal in accordance with established animal control procedures.

5. **Incapacitation of Shelters:**

In the event that established shelters are destroyed or incapable of functioning due to the nature of the emergency situation, private boarding kennels, stables, veterinarian hospitals, and the Pinehurst Harness Track may be requested to open as boarding and / or medical facilities. In rare cases, during large-scale emergencies, animals may be moved outside Cumberland County for care and protection.

6. **Staff / supplies:**

a. **Staff:**

Private boarding kennels and veterinarian hospitals are responsible for the staffing of their own boarding facilities and will be compensated by the citizens who use the animal shelter according to the established policies of the animal shelter unless other arrangements have been made.

Remaining animal shelters and hospitals will be staffed with available personnel from Cumberland County Animal Control / SPCA of Cumberland County and with volunteer veterinarians and veterinarian assistants. These shelters, in cooperation with the Cumberland County Veterinarian Association and the NSCU College of Veterinary Medicine, will develop and routinely update lists of available veterinarian and veterinarian assistant volunteers.

Each individual animal shelter will be responsible for developing the work schedules for employees and volunteers.

b. **Supplies:**

Each animal shelter will identify resources for potable water, food, medical cleaning and shelter supplies in advance of an emergency situation.

Prearranged domestic and non-domestic animal food companies, medical suppliers, water suppliers and cleaning product suppliers will be contacted and requested to begin the shipment of supplies to an established delivery point. The delivery point will serve as a storage center and a distribution center for shelters and hospitals.

If the need arises, resource agencies (e.g. kennel clubs) may be requested to donate cages and other various shelter supplies.

C. Medical:

1. Hospitals:

The Cumberland County Animal control will coordinate the resources for a medical facility for domestic animals which cannot be accommodated by the various shelters due to the animal's injuries. The veterinary hospital at the NCSU College of Veterinary Medicine and private medical shelters may provide facilities as space permits.

2. Staff:

Volunteers from the NCSU College of Veterinary Medicine and from the Cumberland County Veterinarian Association and others will assist in providing staff to identified shelters.

Depending on the extent of the emergency situation, volunteers or Veterinary Medical Assistance Teams from the American Veterinary Medical Association may be requested to assist in the medical treatment of domestic and non-domestic animals.

D. Bites / Disease Control:

The Cumberland County Department of Environment Services will make no-cost vaccinations available to rescue and shelter personnel and will insure that treatment of bites and injuries is available to affected persons.

Outbreaks of rabies are a serious threat during an emergency situation. Appropriate steps to control that threat will be implemented by the Cumberland County Department of Environmental Services.

4.6 Recovery:

A. Release / Destruction:

1. Domestic Pets / livestock:

Cumberland County Animal Control will support efforts to identify owners of stray/lost animals. If owners cannot be found, Animal Control and SPCA of Cumberland County representatives will attempt to adopt or sell the animals according to established procedures.

Animals for which no owners can be found and which cannot be placed in adoptive care or sold will be disposed of in accordance with established animal control procedures.

2. **Wild Animals:**

Cumberland County Animal Control in cooperation with the N.C. Wildlife Commission will support efforts to reintroduce wild animals back to their natural habitats.

B. Disposal of Animal carcasses:

Disposal of deceased animals will be the responsibility of the Cumberland County Department of Environmental Services. They will arrange for disposal of:

- 1. Euthanized animals
- 2. Animals killed in the emergency situation

5.0 Review and Update

This procedure will be reviewed and updated as appropriate by Cumberland County Emergency Management, Cumberland County Animal Control, and other affected agencies.

This procedure will be periodically tested by an appropriate exercise method or in the event of an actual emergency disaster affecting Cumberland County.

Effective Date: May 2000

6.0 Approval

6.1 Primary Agencies:

Cumberland County Animal Control

Director, Cumberland County
Emergency Management

Cumberland County Cooperative Extension

6.2 Support Agencies

Cumberland County Veterinary Assoc.

SPCA of Cumberland County

American Red Cross

Annex A

Cumberland County Disaster Planning For Pets, Livestock, and Wildlife

Domestic Pets

- If you evacuate your home, **DO NOT LEAVE YOUR PETS BEHIND**. Pets most likely cannot survive on their own, and if by chance they do, you may not be able to find them when you return.
- For public health reasons, many emergency shelters cannot accept pets. Find out which motels and hotels in your area allow pets. Include your local animal shelter's number in your list of emergency numbers - they will be able to provide information concerning pets during a disaster.
- Make sure identification tags are up to date and securely fastened to your pet's collar. If possible, attach the address and / or phone number of your evacuation site. Make sure you have a current photo of your pet for identification purposes.
- Make sure you have a secure pet carrier, leash or harness for your pet so that if the animal panics, it cannot escape.
- Take pet food, bottle water, medications, veterinary records, cat litter / pan, can opener food dishes, first aid kit and other supplies with you in case they are not available later.
- Make sure you have a copy of your pet's medical records. If you are unable to return to your home right away, you may need to board your pet. Most boarding kennels, animal shelters, and veterinarians require that your pet's vaccinations are current.
- If it is impossible to take your pet with you to temporary shelter, contact friends, family, veterinarians, or boarding kennels to arrange for care. Make sure medical and feeding information, food, medicine and other supplies accompany your pet to its foster home.

Livestock

- Evacuate livestock whenever possible. The evacuation sites should have or be able to readily obtain food, water, veterinary care, handling equipment and facilities.
- If evacuation is not possible, a decision must be made whether to move large animals to available shelter or turn them outside. This decision should be determined based on the type of disaster and the soundness and location of the shelter.
- All animals should have some form of identification that will help facilitate their return.

Wildlife

- Wild animals often seek higher ground which, during floods, eventually become submerged (i.e., island) and the animals become stranded. If the island is large enough to provide suitable shelter, you can leave food appropriate to the species. Animals have a flight response and will flee from anyone approaching too closely. If the animal threatens to rush into the water, back away from the island.
- Wildlife often seeks refuge from flood water on upper levels of a home and many remain even after the water recedes. If you meet a rat or snake face to face, be careful but don't panic. Open

a window or other escape route and the animal will probably leave on its own. Never attempt to capture a wild animal unless you have the training. Protective clothing, restraint equipment and caging necessary to perform the job.

- Beware of an increased number of snakes and other predators who will try to feed on the carcasses of reptiles, amphibians and small mammals that have been drowned or crushed in their burrows and under rocks.
- Often, during natural disasters, mosquitoes and dead animal carcasses may present disease problems. Outbreaks of anthrax, encephalitis and other diseases may occur. Contact your local emergency management office for help.

Further Assistance

- If you see any injured or stranded animal in need of assistance, or if you have any other questions or concerns about animal protection during an emergency situation, contact the Cumberland County Animal Control at (910) 483-9284.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

ASSIGNMENT OF RESPONSIBILITIES

Primary Agency: County Manager

Supporting Agencies: County Board of Commissioners
Municipal Mayor and Council
Municipal Departments

I. PURPOSE

The Assignment of Responsibilities Section provides for the coordination of all county resources to ensure the safety of the citizens of the county during emergency or disaster situations. This section tasks departments within local government with emergency functions in addition to their normal duties. Each department is responsible for developing and maintaining their own emergency SOGs.

II. SITUATION AND ASSUMPTIONS

A. Situation

The safety of the citizens, protection of property and the restoration of services are the priority of the County of Cumberland during emergency situations. Additionally, the county will coordinate clean up and recovery efforts with county and municipal government agencies and the private sector.

B. Assumptions

During times of disaster or emergency conditions, personnel and resources of every department may provide additional support. Personnel may be utilized in EOC staff positions, field support positions, liaison, damage assessment surveys, logistics positions and other positions as needed.

III. CONCEPT OF OPERATIONS (ALL DEPARTMENTS)

- A. Each County department will support other county departments by providing facilities, equipment and vehicles as directed by the Department Head. This will be coordinated through the EOC.
- B. Department personnel shall report to an individual or location as directed by the County Manager, his designee or as detailed in the departmental plan.

IV. ORGANIZATION

A. Policy / Administration Group

- 1. The Cumberland County Emergency Policy/Administration Group consists of the following:

Chairman, Cumberland County Board of Commissioner's
County Manager
Sheriff
Public Information Officer
County Emergency Services Director
Fire Marshal
Finance Officer
County Attorney
Department of Social Services
County Health
Mental Health
Associate Superintendent of Schools
Red Cross
Designees as necessary

2. The Municipalities Emergency Policy/Administration Group may consist of the:

Mayor
Council Members
City Manager
Police Chief
City Emergency Management Coordinator or County Emergency Services Director
Fire Chief
Parks and Recreation
Designees as necessary

B. Support Groups

1. The Support Groups consist of representatives from predetermined governmental and volunteer agencies.
2. These groups are tasked with the implementation of Policy / Administration Group decisions.

V. RESPONSIBILITIES

A. General Departmental / Department Head Responsibilities

1. Identify the Department's roles and responsibilities during emergencies or disasters.
2. Develop and maintain SOGs for department activities during emergency and disaster operations.
3. Prepare inventories of all applicable equipment and personnel resources of the Department.
4. Issue directives, instructions and provide training for Department personnel outlining their duties during disaster / emergency operations.
5. Alert EOC staff and other emergency support services to the dangers associated with operations concerning the Department or which may affect county services during disasters / emergency operations.

6. Support emergency operations in the EOC or field operations as necessary.
7. Assist in warning and notifying the affected population of an existing or impending emergency, as needed.
8. Provide support personnel to assist in emergency / disaster operations and damage assessment operations.
9. Assist in maintaining maps, status boards, personnel rosters and records of operation, as directed.
10. Assist overall operations during disaster/emergency situations by assisting the Public Information Officer in rumor control and dissemination of information, as directed.
11. Handle citizen inquiries, provide information and assist general public as necessary.
12. Maintain personnel rosters and number of hours spent by Department personnel during emergency operations.
13. At all times, keep staff of the Department informed of the incident (call back of personnel, duties to be performed, length of time needed, etc.) and how it would interact with this department's personnel.
14. Each department is responsible for the preservation of essential records to ensure continued operational capabilities.

B. Assignment of Individual Responsibilities

1. Chairman, Cumberland County Board of Commissioners or Designee
 - a. Carry out appropriate provisions of the North Carolina General Statutes, in addition to local ordinances relating to emergencies.
 - b. Declare a State of Emergency for Cumberland County.
 - c. Execute the Cumberland County Emergency Operations Plan.
 - d. Implement other measures as necessary to provide for the protection of life and property.
 - e. Coordinate emergency response actions with the Elected Officials from adjoining jurisdictions.
 - f. Authorize the release of emergency public information statements.
 - g. Appoint members for the Cumberland Emergency Planning Committee and submit them to the Chairman of the State Emergency Response Commission.
2. Board of County Commissioners (Duties)
 - a. Adopt laws and ordinances, which will prevent or lessen the impact of disasters.
 - b. In the event of a disaster, officially declare a disaster according to local, state and federal laws.
 - c. Request assistance from local, state and federal agencies.
 - d. Become knowledgeable of the Cumberland County Emergency Operations Plan and the Boards' responsibilities and authorities according to local, state and federal law.
 - e. It is the responsibility of the elected officials to insure that all legal documents of both a public and private nature recorded by designated

officials be protected and preserved in accordance with existing laws, statutes and ordinances.

3. County Manager

- a. Act on behalf of the Chairman and the Board of County Commissioners in the control of disaster operations.
- b. Implement the County Emergency Plan by the authority of the County Board Chairman.
- c. Direct county agencies to develop and continually update emergency plans and SOGs to respond to emergencies.
- d. Support the Emergency Services in the development of periodic exercises and test of the emergency systems.
- e. Assures that a qualified trained Public Information Officer is in place.
- f. Coordinate emergency response actions with County Managers from adjoining jurisdictions.
- g. Implement direction, control, coordination, and policy-making functions as necessary to provide for optimum protection of public health and safety within the jurisdiction.
- h. Appoint designee for Air Operations conducted during emergency / disaster situations.
- i. Authorize the releases of emergency public information.
- j. Request resources through the Emergency Services Director.
- k. Utilize and commit county resources in support of emergency / disaster response operations.

4. Mayors

- a. Mayors may designate the Town / City Manager to carry out the functions listed below.
- b. Utilize and commit municipal personnel, facilities and equipment resources in support of Cumberland County emergency / disaster response operations, not to conflict with the municipalities needs.
- c. Assess needs of the municipalities and request resources through the Emergency Services Director.
- d. Carry out appropriate provisions of the North Carolina General Statutes, in addition to local ordinances relating to emergencies.
- e. Mayor or his designee will declare a State of Emergency for the Municipality.
- f. Execute applicable section of the Cumberland County Emergency Operations Plan.
- g. Implement other measures as necessary to provide for the protection of life and property.

5. Emergency Services Director

- a. Develop and maintain SOGs for emergency management operations during emergency and disaster situations.
- b. Perform assigned duties according to state statutes and local ordinances.
- c. Develop plans in accordance with State and Federal guidelines.
- d. Coordinate emergency operations within the county's jurisdiction.
- e. Develop and maintain a current notification list of emergency operation personnel, county departments.
- f. Provide for delivery of programs to properly train the emergency management organization.

- g. Maintain a current list of available resources
- h. Coordinate the procurement of resources requested from municipalities within the county and direct aid to areas where needed.
- i. Coordinate with private industry for use of privately owned resources.
- j. Request additional resources through the NC Division of Emergency Management Eastern Branch Office in cases where county resources cannot meet resource or recovery requirements.
- k. Coordinate exercises and tests of emergency systems within the jurisdiction.
- l. Alert and activate, as necessary, the County Emergency Operations Center when informed of an emergency within the county.
- m. Submit necessary emergency information and reports to the proper agencies during the emergency and disaster events.
- n. Assume the role of the Operations Officer during emergency operations and when the EOC is activated.
- o. Serve as principle liaison and advisor for emergency operations during emergency / disaster.
- p. Maintain contact with the NC Division of Emergency Management Eastern Branch Office during emergency situations
- q. Serve as the Community Emergency Coordinator as defined by SARA Title III and the Cumberland Emergency Planning Committee.
- r. Coordinate emergency response actions with the Emergency Management Coordinators in adjoining jurisdictions.
- s. Maintain operational readiness of the County EOC.
- t. Perform a hazard analysis to determine potential evacuation routes.
- u. Identify, designate and arrange suitable shelter locations.
- v. Maintain current inventories of public information materials to include weather preparedness, family preparedness etc.
- w. Identify critical / vital facilities and maintain current database.
- x. Develop and maintain SOGs for transportation operations during emergencies.

6. Sheriff

- a. Develop and maintain SOGs for law enforcement operations during emergency disaster situations.
- b. Provide direction and control for law enforcement operations.
- c. Anticipate resources required to support law enforcement activities during emergencies, and plan for timely resource requests.
- d. Coordinate security for the damaged areas, vital facilities, equipment, staging areas and shelter operations.
- e. Assist Communications with the Warning and Notification process for the affected population.
- f. Coordinate traffic control during operations.
- g. Function as or designate the official Public Information Officer for law enforcement operations.
- h. Provide security for EOC and alternate EOC (if activated) as needed.

7. Communications Director

- a. Establish and maintain the communications network for two-way communications between the EOC and the field emergency response resources.
- b. Provide for the dissemination of warning information to emergency response personnel.

- c. Coordinate, in conjunction with Emergency Services Office and the Public Information Office, the Warning and Notification process for the affected population of any existing or impending emergency / disaster.
- d. Develop and maintain SOGs for communications center operations during emergency events.
- e. Identify radio repair capabilities and maintenance operations for emergency repairs.

8. Municipal Law Enforcement

- a. Develop SOGs for disaster operations in support of the City Emergency Operations Plan and County Operations Plan.
- b. Provide direction and control for law enforcement operations within their jurisdiction.
- c. Coordinate security for the damaged areas, vital facilities, equipment, staging areas and shelter operation as needed.
- d. Coordinate traffic control within the municipalities during operations.
- e. Identify local emergency evacuation routes from high hazard areas.
- f. Identify equipment and manpower limitations, and develop mutual aid agreements for the procurement of needed resources during emergency and disaster events.
- g. Anticipate resources needed to support local law enforcement activity during emergencies, and plan for timely resource requests.
- h. Assist communications with the warning and notification process for the affected population as needed.
- i. Provide security and protection for the damaged area; to include private residential areas, critical facilities and businesses.
- j. Assist with initial impact assessment.
- k. Limit access to the evacuation area during response and recovery operations.
- l. Coordinate additional law enforcement support with State Highway Patrol and other law enforcement agencies during response activities as necessary.
- m. Assist with reentry of evacuees into damaged areas.

9. Public Information Officer

- a. Develop and maintain SOGs for public information operations during emergency and disaster operations.
- b. Coordinate all media releases with appropriate agencies or jurisdictions during an emergency situation.
- c. Provide for rumor control and emergency instructions and direct information for the public at the time of the disaster or emergency.
- d. Develop media advisories for the public.
- e. Function as the official spokesperson during emergencies. Coordinate media responses with other Public Information Officers within the county as necessary.
- f. Serve in the EOC during time of emergency activation.
- g. Clear information with the Chief Executive or Incident Commander before releasing any information to the media.
- h. Ensure that all sources of information being received are authenticated and verified for accuracy.
- i. Coordinate, in conjunction with the Emergency Services Office and with the Emergency Communications Center, the warning and notification process for the affected population of any existing or impending emergency / disaster.

10. Fire Marshal
 - a. Develop and maintain SOGs guidelines for Fire Marshal's operations during emergency and disaster operations.
 - b. Provide a representative to serve in the EOC to coordinate fire-fighting resources during a large-scale incident or emergency.
 - c. Identify equipment and manpower limitations and develop mutual aid agreements for the procurement of needed resources during emergency situations.
 - d. Designate staging areas for mutual aid units.
 - e. Conduct fire prevention inspections during recovery.
 - f. Assist the Emergency Services Director in the collection, review and update of hazardous material facility information available for emergency response.

11. Fire Departments County / Municipal
 - a. Plan for effective use and coordination of fire-fighting resources during disaster situations.
 - b. Identify equipment and manpower limitations and develop mutual aid agreements for the procurement of needed resources during emergency and disaster events.
 - c. Designate staging areas for mutual aid units.
 - d. Provide a representative in the EOC during time of emergency activation.
 - e. Assist law enforcement with Warning and Notifying the affected population of an existing or impending emergency.
 - f. Plan for coordination of fire fighting activities during disasters.
 - g. Support rescue operations.
 - h. Provide support personnel to assist in traffic control.
 - i. Provide direction and control during hazardous materials incidents.
 - j. Assist in Search and Rescue operations during emergency / disaster situations.
 - k. Assist with debris removal as necessary.
 - l. Conduct fire prevention inspections during recovery.

12. Emergency Medical Service Director
 - a. Develop and maintain SOGs for emergency medical service activities during emergency and disaster situations.
 - b. Plan for coordination of ambulance / rescue activities throughout the county during disasters.
 - c. Identify equipment and manpower limitations and develop mutual aid agreements for the procurement of needed resources during emergency and disaster events.
 - d. Coordinate with area hospitals concerning receipt of mass casualties during emergency and disaster events.
 - e. Coordinate with the County Health Director and Social Services Director to determine emergency transportation needs for special needs populations.
 - f. Coordinate county volunteer rescue personnel.

13. Social Services Director
 - a. Develop and maintain SOGs for Social Service operations during emergency / disaster situations.
 - b. The operation of shelters for special needs populations is the responsibility of the Department of Social Services.
 - c. Department of Social Services will provide support personnel to the local Red Cross chapter in the operation of mass shelters in the event the local Red Cross chapter Volunteer resources are not sufficient to operate the shelters.
 - d. Respond to opening of special needs shelters upon notification of Emergency Services and / or respond to request for resource personnel for mass shelters.
 - e. Ensure that adult care homes have written fire and disaster plans.
 - f. Coordinate with the Health Director concerning needs for special needs populations.
 - g. Arrange training with shelter managers through the local Red Cross chapter.
 - h. Provide shelter managers for special needs shelters.
 - i. Coordinate with Health and Mental Health departments and personnel in relation to tasks required in the operation of the special needs shelter.

14. Health Director
 - a. Develop and maintain SOGs for emergency public health operations during emergency / disaster situations.
 - b. Coordinate health care for emergency shelters, including mass care and special need facilities.
 - c. Coordinate with State water supply authorities to expedite emergency public water supply.
 - d. Provide continuous health inspections and immunizations when appropriate to evaluate, detect, prevent and control communicable disease.
 - e. Coordinate environmental health activities for waste disposal, refuse, food, water control and vector / vermin control and sanitation.
 - f. Coordinate with the Social Services Director in the identification of special needs populations.
 - g. Provide for inspections of mass care and special needs facilities to assure proper sanitation practices are followed.
 - h. Coordinate with the proper authorities to establish a temporary morgue if necessary following an emergency / disaster.
 - i. Provide a public health nurse at all mass care and special needs shelters.

15. Mental Health Director
 - a. Develop and maintain SOGs for mental health operations during emergency situations.
 - b. Coordinate with the Director of Social Services and Health Department to provide crisis counseling when necessary during emergency situations.
 - c. Provide crisis counseling to professionals and support staff working with the emergency response and recovery.
 - d. Provide crisis counselors for emergency shelters operated following a Presidential Declaration of Disaster.

- e. Maintain and provide information pertaining to mental health resources that may be utilized during emergency / disaster situations.
 - f. Identify group homes under supervision of Mental Health that may require sheltering.
16. Finance Officer
- a. Develop and maintain SOGs for county emergency financial record keeping during emergency situations.
 - b. Plan for and identify available financial resources for emergency purposes.
 - c. Assist the Tax Officer with documentation of disaster damage to county-owned facilities.
 - d. Provide county budget information in support of the Governor's request for a Presidential Declaration of Disaster.
 - e. Develop financial accounting procedures to assist local agencies in recording and reporting their emergency expenses.
 - f. Provide a means of emergency purchasing procedures and necessary documents to enable responders to accomplish response and recovery operations without undue delay.
 - g. Develop and maintain contracts, memorandums of understanding, and / or open purchase orders with vendors to provide materials and supplies at fixed prices during emergency situations.
 - h. Serve as a member of the Disaster Recovery Team.
17. Damage Assessment Officer/Tax Officer
- a. Develop and maintain SOGs for county tax operations and records protection during disaster situations.
 - b. Coordinate damage assessment teams conducting field surveys, and assure teams are properly trained and equipped.
 - c. Collect data, prepare damage assessment reports and forward reports to the Emergency Services Director.
 - d. Provide property tax information assistance for applicants at Disaster Recovery Centers (when applicable).
 - e. Assist the Emergency Services Director and other county or municipal agency representatives who are conducting recovery operations in prioritizing repairs and restoration of affected facilities.
18. Superintendent of Schools
- a. Develop and maintain SOGs for the safety and protection of students, faculty, and other personnel during emergency situations.
 - b. Coordinate evacuation and transportation operations for students during emergency situations.
 - c. Provide support personnel, equipment and facilities as necessary (schools, lunch room personnel, etc.) for emergency situations, i.e. shelters.
19. Air Operations Manager (City / County Manager's Disaster Designee)
- a. Develop and maintain SOGs for air operations during emergency situations.
 - b. Coordinate aircraft operations during and following disaster events.
 - c. Provide for the priority clearance of runways at the Fayetteville Regional Airport and the Gray's Creek Airport.

- d. Determine capabilities and limitations of the Airport / Airstrip facility to support aviation operations during emergencies.
 - e. Coordinate with the FAA regarding the need to restrict air space over the disaster area.
 - f. Provide liaison with the National Transportation Safety Board and the FAA in the event of a mass casualty aircraft accident.
 - g. Coordinate with military liaison in support of disaster-related military flight operations at the airport.
20. Information Services
- a. Develop and maintain SOGs for the management of county data processing during emergency / disaster situations.
 - b. Provide support personnel for technical assistance with computer equipment and Information Systems during emergency / disaster activations.
 - c. Provide for the protection of computerized vital records during emergency / disaster events.
21. Solid Waste Department
- a. Develop and maintain SOGs for operations during emergency / disaster situations
 - b. Coordinate debris clearance operations with the Operations Officer.
 - c. Provide containers and / or vehicles for removal of debris.
 - d. Serve as member of Disaster Recovery Team.
 - e. Identify temporary landfills and collection sites.
22. Personnel Department
- a. Develop and maintain SOGs for operations during emergency / disaster situations
 - b. Serve as staff support to EOC staff.
 - c. Prepare records and reports as necessary for disaster operations.
23. Risk Management Department
- a. Develop and maintain SOGs for operations during emergency / disaster situations
 - b. Conduct Danger / Hazard Assessments in county owned facilities.
 - c. Provide for county personnel safety considerations.
 - d. Provide documentation of work-related injuries to county employees.
24. Fleet Maintenance Superintendent
- a. Develop and maintain SOGs for operations during emergency / disaster situations
 - b. Prioritize vehicle maintenance to enable emergency responders to accomplish response and recovery operations.
 - c. Provide for emergency fueling operations of county vehicles as needed.

25. American Red Cross
- Highlands Chapter of the American Red Cross will provide personnel and services as outlined in their Memorandum of Understanding with Cumberland Emergency Services Agency.
26. Amateur Radio Operator
- a. Provide a liaison to the EOC during emergency / disaster activations.
 - b. Transmit and receive emergency traffic as necessary during emergency / disaster events.
 - c. Maintain a message log for all radio emergency traffic.
 - d. Report communications transmissions to the Operations Officer.
 - e. Provide emergency communications at shelter sites as needed.
 - f. Coordinate with other amateur radio operators to establish and support post-disaster emergency communications.
 - g. Disassemble and relocate radio equipment to alternate EOC if necessary.
 - h. Develop and maintain a list of resources that may be used during emergencies / disasters.
27. Transportation Officer (Municipal)
- a. Coordinate request for vehicles and drivers needed for an evacuation.
 - b. Coordinate staging areas with emergency management and other agencies.
 - c. Obtain additional resources as needed from adjacent jurisdictions.
 - d. Coordinate transportation services for evacuees, emergency personnel, government officials and other personnel in emergency / disaster situations, as directed.
28. Local Emergency Planning Committee (LEPC)
- a. Ensure compliance with the provisions of Title III, Superfund Amendments and Reauthorization Act (SARA) of 1986.
 - b. Ensure an ongoing program for plan implementation, maintenance, training and exercising.
29. Public Utilities (Municipal and Private Companies)
- a. Coordinate with county and municipal agencies for restoration of public water systems and electricity.
 - b. Advise Policy / Administration group regarding debris clearance and burning, waiver of permits, etc.
 - c. Provide a liaison to the County EOC to support emergency response and recovery operations.
30. Medical Examiner
- a. By law, Medical Examiners are responsible for cadavers.
 - b. In the event of a Mass Fatalities Incident, operations will be coordinated by the Medical Examiner working in cooperation with the Emergency Services Director.
 - c. The local funeral directors will assist the medical examiner, by supplying equipment, vehicles and personnel, as available.

31. North Carolina Highway Patrol
 - a. Support local law enforcement by coordinating and establishing evacuation routes and traffic control points.
 - b. Advise the Emergency Services Director of roadway conditions and support removal of disabled vehicles or other stumbling blocks to evacuation.
 - c. Obtain additional resources, as needed from adjacent jurisdictions, the state and private resources.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

CIVIL DISORDER / ACTS OF TERRORISM

(See Emergency Checklists for: Civil Disorder; Terrorism)

Roles and Responsibilities	Response Guidelines	Bioterrorism / Chemical Threats
		
Checklists available for:	Purpose	Purpose
Chairman - County Commissioners	Scope	Situation and Assumptions
Emergency Management Coordinator	Definition	Objectives
Sheriff	Concept of Operations	On Scene General Assessment
Public Information Officer	Command and Control	AWARE
Fire Marshal	Implementing Guidelines:	Types of Agents
Hazardous Materials Team	Threat Level 1	Response Strategy
Emergency Medical Services	Threat Level 2	
Health Department	Threat Level 3	Chemical Threat
Hospitals	New Entry Protocols:	Objectives
Public Works	All Agencies	On Scene General Assessment
Social Services	Law Enforcement	AWARE
American Red Cross	Fire Service	Hazard Assessment
County Schools and Transit Authority	Emergency Medical Service	Response Strategy
	Chain of Evidence	
	Mass Decontamination	Health Interface
	Public Information	Biological Threat Agent Incidents
	Demobilization /Deactivation	Chemical Threat Agent Incidents

I. PURPOSE

This appendix describes the operational policies to be implemented for the purpose of minimizing the impact of civil disturbances and acts of terrorism upon the citizens and the property of Cumberland County.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. There is a need for control to maintain law and order during times of gathering of citizen protest groups or other type groups.
2. Cumberland County has union and non-union business and industry.
3. There are nine (9) municipalities in Cumberland County all subject to civil disorder.
4. There has been a national increase in acts of terrorism by either individual or groups using various acts and threats to disrupt and spread unrest in society.

B. Assumptions

1. It is assumed that all municipal police departments and the Cumberland County Sheriff's Department have written procedures in place to deal with civil disorders.
2. Mutual aid agreements between the municipalities and the Sheriff's Department will enhance the availability of law enforcement support, when needed.
3. Assistance of the State Highway Patrol and the N.C. National Guard can be obtained through the N.C. Division of Emergency Management as support to the Sheriff's Department.

III. CONCEPT OF OPERATIONS

- A. Normally, when groups with conflicting viewpoints form, law enforcement will gather intelligence by both overt and covert means.
- B. By monitoring the intelligence, the responsible officials may predict when such gatherings are likely to precipitate a commotion, or acts or threats of terrorism may be likely.
- C. By pre-planning and utilizing mutual aid agreements, responsible officials can have reasonable assurance that adequate support is available to counter a civil disturbance and maintain or restore order.
- E. By law enforcement briefings to support agencies when information or intelligence reveals an increase or likelihood that the threat, civil disorder or terrorist threat or act could likely occur.

IV. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

A. General

1. During periods of actual or imminent threat of a civil disturbance or terrorist threat, emergency plans and procedures will be activated to provide for increased response readiness. Agencies should utilize attached guidelines.

2. Unless noted otherwise, organization and responsibilities applicable to county, municipal and local agencies are specified in the Direction and Control annex.

B. Mitigation

1. Each law enforcement agency in Cumberland County is encouraged to have fully developed procedures on hand, designed to effectively deal with civil disorders.
2. Periodic training (table top, field exercise) must be conducted to ensure that all responsible parties are familiar with their assigned duties.

C. Preparedness

Where requested, the Office of Emergency Management will:

1. Within available assets, verify that the following is in a readiness condition:
 - a. Cumberland County EOC
 - b. Communications System
 - c. Medical Support for Operations
 - d. Hazardous Materials Support for Operations
2. Request, if deemed appropriate, the North Carolina Division of Emergency Management to alert the State Highway Patrol and the North Carolina National Guard to the possibility of a support mission to law enforcement and other resource needs for law enforcement.

D. Response

1. Cumberland County Office of Emergency Management is responsible for activating the County EOC and coordination with law enforcement to support human service needs.
2. Upon activation, the EOC shall serve as the primary point for the direction and control of operational efforts during both response and recovery phases. EM functions as a support agency to law enforcement.
3. If activated, the Cumberland County EOC will be the primary point of contact for state and / or federal resources.

E. Recovery

1. Cumberland County government shall coordinate and support recovery operations. In this endeavor, if needed, damage assessments will be performed by county agencies in accordance with the Damage Assessment / Recovery annex.

2. Cumberland County will coordinate with the North Carolina Division of Emergency Management for necessary state and federal assistance. (Source: Public Law 93-288 [Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988](#), as amended by Public Law 100-707).

V. DIRECTION AND CONTROL

- A. Each municipality should exercise its full authority in execution of locally designed emergency operations plans and procedures. However, such activities should be coordinated through the County EOC.
- B. Major emergency situations affecting the unincorporated portions of the County will be under the auspices of the Cumberland County government. Emergencies which affect multi-jurisdictional areas (the county and municipalities) will be managed in a cooperative effort through the County EOC.

VI. CONTINUITY OF GOVERNMENT

A. County Government Line of Succession

1. **Board of Commissioners:**

The line of succession for the Board of County Commissioners is from the Chairman to the Vice Chairman, continuing through the remaining board members according to seniority. In the absence of any commissioners, the line of succession would pass to Administration.

2. **Sheriff:**

Line of succession for Sheriff in enforcement of law and order and public safety is from the Sheriff to his designated staff.

3. **Emergency Management:**

The line of succession for county emergency preparedness and coordination is from the Emergency Management staff representative(s).

4. **Department /Agencies:**

The line of succession within each county department/agency is according to each respective SOG.

B. Documentation and Preservation of Records

The documentation and preservation of records are to be maintained in order to provide accountability of the various operations, and to ensure continued operation and / or reconstitution, if necessary, of county government.

VII. PLAN DEVELOPMENT AND MAINTENANCE

Responsibility

- A. This hazard specific annex is developed and maintained by the Cumberland County Office of Emergency Management in conjunction with Cumberland County government. The Emergency Management Coordinator will coordinate implementation of plans and procedures addressing civil disorder preparedness and emergency response efforts.

- B. The Cumberland County Office of Emergency Management will review this annex annually.
- C. Changes and revisions will be coordinated with appropriate agencies having attending responsibilities.

VIII. AUTHORITIES AND REFERENCES

- A. N.C. General Statutes, Chapter 166A.
- B. Cumberland County Emergency Management Ordinance.

EMERGENCY ACTION CHECKLIST - CIVIL DISORDER / TERRORIST THREATS

Emergency response agencies tasked with responding to the hazards identified as threats to Cumberland County can use the hazard specific checklists contained in this attachment. These checklists are not all inclusive, but they cover key points.

This attachment may also contain suggested citizen instructions for major emergencies. These instructions can be used to expedite emergency public information measures. They contain general information for the threats.

CHAIRMAN, CUMBERLAND COUNTY COMMISSIONERS

Preparedness

- Assess initial intelligence information.
- Alert executive staff.
- Determine the nature of the threat.
- Make a determination to activate the EOC, if dictated by the situation.
- Review the legal basis for responding to the threat.
- Assess law enforcement needs.
- Review response procedures.
- Determine availability of forces.
- Estimate the need for auxiliary forces.

Response

- Direct activation of the EOC.
- Assemble and brief executive staff.
- Assess situation based upon reports from the Incident Commander.

- Determine policy for dealing with the emergency.
- Brief EOC agency representatives, as appropriate.
- Oversee operations and maintain coordination with EMC.
- Ensure a flow of information.
- Maintain continuous surveillance of the emergency situation.
- Authorize media releases when appropriate.

Recovery

- Participate in a debriefing after the emergency.
- Critique actions taken during the event.
- Ensure that SOGs are reviewed and revised as appropriate.

EMERGENCY MANAGEMENT COORDINATOR

Preparedness

- Negotiate mutual aid agreements.
- Maintain resource listings.
- Assess potential civil disturbance threat.
- Identify critical facilities susceptible to threat.
- Establish points of contact for making requests to support agencies.
- Establish communications systems to facilitate direction and control.
- Test communications systems.
- Prepare to activate the EOC.
- Ensure access to required personnel functions in EOC operations.
- Alert supporting agencies.

Response

- Activate the EOC.
- Recall EOC agency representatives.
- Dispatch a mobile communications van to the threatened site.
- Notify surrounding county agencies that mutual aid may be needed.
- Coordinate the exchange of vital information between response agencies and decision-making representatives in the EOC.

Recovery

- Participate in a debriefing after the emergency.
- Critique actions taken during the event.
- Write up after action report.
- Review SOGs and revise as appropriate.

SHERIFF

Preparedness

- Assess the situation.
- Brief government officials.
- Increase intelligence activities.
- Determine ingress and egress routes.
- Work with Police to establish traffic control procedures.
- Expand reaction force as dictated by the situation.
- Review plans and resource data inventories.
- Establish critical facility protection measures.
- Alert support agencies.
- Provide a representative to report to the EOC (if activated).
- Appoint an Incident Commander.

Response

- Control and limit access to the areas of disturbance.
- Maintain law and order at the site.
- Provide situational reports to the EOC.
- Isolate activists / militant leadership.
- Consider use of the following as the situation dictates:*
 - Show of force.
 - Employment of water.
 - Employment of riot formations and / or agents.
 - Equipment to meet the demands of the situations.
 - Alert specialized forces who are trained to counter or suppress the rioting.
 - Brief decision-makers on the situation.
 - Continue intelligence gathering.
 - Coordinate traffic control.
- Establish limited access.
- Provide key facility protection activities.
- Determine what support is available.
- Request augmentation of forces as needed from:*
 - Neighboring counties
 - State agencies
 - National Guard
 - Federal agencies

- Determine resources available to transport law violators to places of incarceration.
- Select buildings to be used for incarceration.

Recovery

- Participate in a debriefing after the emergency.
- Critique actions taken during the emergency.
- Revise SOGs as appropriate.

PUBLIC INFORMATION OFFICER

Preparedness

- Assess intelligence information as directed.
- Prepare to communicate advisories quickly to the public.
- Check logistical arrangements (e.g., phones, computer).
- Prepare pre-scripted media advisories.
- Ensure that adequate backup staff will be available.

Response

- Prepare news releases with law enforcement.
- Coordinate with the media.
- Decide which official(s) will be primary spokesperson(s).
- Coordinate scheduling of regular briefings at which official(s) will be available to talk with media.
- Promote coordination and cooperation among agencies regarding release of information.
- Hold joint media news briefings if appropriate.
- Monitor news coverage and correct erroneous information promptly.
- Double check news releases for accuracy before releasing to the media.
- Make sure news releases do not hamper operations.

Recovery

- Participate in a debriefing after the emergency.
- Critique actions during the event.
- Review SOGs and revise as appropriate.

FIRE MARSHAL

Preparedness

- Alert fire and rescue personnel.

Response

- Contain fires.
- Extinguish fires.

- Support rescue operations.
- Support law enforcement to control access to and from disturbance area.
- Coordinate Traffic Control with Fire Departments
- Assist in transporting the injured.
- Coordinate Hazardous Materials Team.

Recovery

- Participate in a debriefing after the emergency.
- Critique actions taken during the event.
- Write up after action report.
- Review SOGs and revise as appropriate.

HAZARDOUS MATERIALS TEAM

- Provide standardized training and tactical operating guidelines for responding to and mitigating hazardous materials emergencies on an ongoing basis.
- Facilitate joint planning and cooperation regarding effective tactical response to incidents.
- Develop and conduct training at the technical level and above.
- Respond to the scene of an incident per inter-agency agreement.
- Provide appropriate representation to the County EOC if activated.
- Provide technical expertise, equipment and assistance at the incident and perform duties as directed by the Incident Commander.
- Advise the Incident Commander of any additional resources available or needed to mitigate the incident.
- Conduct post-incident reviews of published operational procedures, training and equipment.
- Deploy HAZMAT units to the incident scene.
- Provide decontaminate equipment at the incident.

EMERGENCY MEDICAL SERVICES MANAGER

Preparedness

- Alert Health and Emergency Medical Services personnel.
- Mobilize needed equipment, supplies and vehicles.

Response

- Provide triage services.
- Provide consultation to medical shelters when established.
- Assist fire and rescue personnel.
- Coordinate the provision of medical resources.

Recovery

- Check medical supplies, equipment and vehicles and repair or replace as necessary.
- Participate in a debriefing after the emergency.
- Critique actions taken during the event.
- Write up after action reports.
- Review SOGs and revise as appropriate.

HEALTH DEPARTMENT

The responsibilities of the Cumberland County Health Department include, but are not limited to the following:

- Provide appropriate representation to the Cumberland County EOC if activated.
- Implementation of the state quarantine law by order of the County Health Director empowering law enforcement officers.
- Enforce Cumberland County Health Department codes concerning environmental, public health or safety problems.
- Provide advice to the IC on protective actions to protect the public.
- Contact the State Department of Natural Resources water / quality branches for on-scene monitoring and supervision of clean up.

HOSPITALS

- Coordinate with area hospitals with types of triaged patients- also types of hazardous materials involved.
- Brief hospitals on the level of decontamination that has been done.
- Medical control to contact the Poison Control Center for the following information:*
 - A. Provide information concerning symptoms and recommended medical treatment for exposure to hazardous materials to on-site medical teams as requested.
 - B. Provide information concerning symptoms and recommended medical treatment for exposure to hazardous materials to receiving hospitals as requested.
 - C. Provide information concerning decontamination procedures to on-site responders as required.

MUNICIPAL PUBLIC WORKS DIRECTOR

Preparedness

- Alert public works crews.
- Prepare to mobilize needed equipment as situation dictates (e.g. barricades; special vehicles).

Response

- Provide damage assessment data.
- Repair damaged roads, bridges and utilities.

- Provide needed barricades.
- Call for mutual aid support (personnel and equipment) as needed.
- Assist in heavy duty rescue operations.

Recovery

- Check equipment and vehicles and repair or replace as necessary.
- Participate in a debriefing after the emergency.
- Critique actions taken during the event.
- Write up after action report.
- Review SOGs and revise as appropriate.

SOCIAL SERVICES DIRECTOR

Preparedness

- Alert DSS personnel.
- Prepare to coordinate social service operations for reception and lodging.
- Staff reception centers.
- Manage reception centers.
- Coordinate lodging operations.
- Provide support personnel for shelter and mass care operations.
- Provide support staff for clothing operations.

Recovery

- Participate in debriefing after the emergency.
- Critique actions taken during the event.
- Write up after action report.
- Review SOGs and revise as appropriate.

AMERICAN RED CROSS

Preparedness

- Alert ARC Volunteers.
- Prepare to activate shelters at EM's request.
- Manage shelter operations.
- Manage feeding operations.
- Coordinate clothing operations.

Recovery

- Participate in a debriefing after the emergency.
- Critique actions taken during the event.

- Write up after action report.
- Review SOGs and revise as appropriate.

CUMBERLAND COUNTY SCHOOLS AND CUMBERLAND TRANSIT AUTHORITY

- Provide as required buses and vans to transport citizens or emergency response personnel during the incident.
- Provide reports of bus pickup / drop-off of passengers, origin and destination route stops.
- Dispatch appropriate representation to the Cumberland County EOC if it is activated.

STATE AGENCIES

- Notification of State and Federal Agencies
- State Emergency Management
- North Carolina Highway Patrol
- Department Health / Human Services
- Department Natural Resources
- North Carolina National Guard

FEDERAL AGENCIES

- Federal Bureau of Investigation
- Environmental Protection Agency
- Department of Energy
- Federal Emergency Management

**RESPONSE GUIDELINES TO ACTS OF TERRORISM
INVOLVING WEAPONS OF MASS DESTRUCTION**

FOREWORD

This document is to be used as guidance to the response organizations and as information and program clarification to agencies of the state and federal governments. Responders **MUST** be aware of a new thought process for response to terrorist incidents. It is imperative that first responders are aware of the potential for injury and death to themselves and others so they can ensure a timely response and maximize the safety and welfare of the citizens of our community.

I. PURPOSE

The purpose of this document is to provide guidance to responders of local government to an incident involving terrorist activity. It is meant as guidance only.

II. SCOPE

The planning process is imperative to ensure a timely, professional response to incidents of terrorism by all organizations of local government.

- A. It is imperative that each level of government and each response organization (at all levels) be aware of the roles and responsibilities that are required for a professional response, consideration to personal hazards due to explosive and / or chemical devices, preservation of ground scene, medical response and support to response personnel and the public.
- B. The legal foundation for this plan can be found in the Presidential Decision Directive (PPD) PDD-39 dated June 1995 and PPD 62 dated May 1998.

III. DEFINITION

Terrorism can be defined as criminal acts or threats by individuals or groups to achieve political, social or economic gain or recognition by fear, intimidation, coercion, or violence against the government and its citizens. In addition, there are two primary phases associated with terrorist incidents.

A. Crisis Management

Crisis management includes the broad spectrum of data collection and dissemination of information primarily to law enforcement groups and to other groups that are part of the initial response. This phase also represents the first-in organizations to incidents and is part of the consolidated efforts by all levels of government to ensure life, safety and rescue efforts.

B. Consequence Management

Consequence Management refers to response measures that are implemented to ensure continuity of essential services of government and to provide emergency relief to all levels of government. Consequence management is primarily an emergency management function. Crisis management and consequence management should be activated at the same time and work hand-in-hand to resolve and recover from acts of terrorism.

IV. CONCEPT OF OPERATIONS

As part of the awareness program associated with acts of terrorism, the first responders must first ensure their own protection of all responding departments. A new way of thinking, a new assessment process, and new response protocols will be required for first-in response departments. The three primary first responders of the city (fire, police, and Medic) will develop the Standard Operating Procedures (SOGs).

- A. Listed below are the primary components of the concept of operations. The primary first responders can address some of these components; the Incident Command System (ICS) and / or the EOC, when activated, will address other components.

B. Cumberland County Threat Assessment

This element will be addressed by law enforcement agencies that consists of municipal Police Departments, Cumberland County Sheriff's Department, State Bureau of Investigation, Bureau of Alcohol, Tobacco, and Firearms, and other law enforcement agencies that could provide information on terrorist groups, individuals, and threat situations based on collected intelligence. These groups would provide information to determine the threat level of the incident.

C. **Notification Level- Internal / External - Primary / Support**

Listed below are the primary response and primary support departments that would be part of the notification process by law enforcement:

1. All law enforcement agencies - local, state and federal
2. Emergency Management Office
3. Fire Service agencies of the city and county
4. EMS-Paramedic Service
5. NC Division of Emergency Management
6. Hospitals
7. Public Health Department
8. Mental Health
9. Debris Removal organizations

This list can be expanded as the need arises or as the scope of operations expands. The IC can dismiss departments if the situation changes. Each agency should develop its own internal notification procedures.

D. **Command and Control**

This function is perhaps the most critical for ensuring a successful operation. It is ABSOLUTELY IMPERATIVE that a team approach for command and control be used for response. In most incidents that involve a terrorist act, the fire department would be at the scene first and would be the *initial IC*. The IC could be transferred to other departments as the incident is resolved and recovery efforts are implemented. If questions or conflicts arise on the command or control function, the EOC, when activated, will resolve. Additional command and control guidelines are defined in the Direction and Control annex of the All Hazards Plan. The following departments of local government could assume the IC position:

- Fire Departments based on jurisdictional boundaries and their role in the event to mitigate the threat, fire or chemical.
- Sheriff's Department or municipal police, as it is ultimately a crime scene.
- Emergency Medical Services - Medic, to mitigate injuries of public and responders.

Emergency Management

All responding departments of local government must be prepared to interface with state and federal counterparts at both the incident site and the EOC.

The EOC, when activated, will be the command and control center and the IC will be at the location.

Operational command will be maintained at the incident site.

It is imperative that immediate command and control be established to ensure control measures are implemented for life, safety and evidence preservation.

Unified Command

This type of command and control is represented by multiple levels of government and is more often than not seen in the EOC environment. A unified command system consists of agencies of the city and county government as well as agencies of the state and federal government in a single location.

This command structure is also found in large-scale incidents and incidents such as terrorism.

E. New Entry Protocols

1. A terrorist incident will require new entry protocols to ensure responder safety. Guidelines are to be established based on threat level at the time of the incident. Minimum isolation distance of 1000 feet and 3000 feet. Entry into an area or building that may be contaminated or may have been destroyed by an explosion can range from normal site access with no protective measures to Level A entry sites with HOT ZONES set to protect responders.
2. Threat levels as defined in Section V will set new protocols.

F. Crisis Management and Consequence Management

These sections are combined because they go hand-in-hand for response and recovery. They deal with all phases of incident operation to include response, recovery, clean up and restoration of site.

G. Roles, Responsibilities and Checklist

This part of the planning document will be detailed in Section VI, Item A. The listing represents the primary factors associated with response to terrorist incidents.

H. Chain of Evidence

This operational area will be addressed in more detail in Section VII. This function may be part of new site entry protocols. Life safety issues will take precedence over this area of operation; however, maintaining the chain of evidence is a crucial element and should be given attention at all phases of response.

I. Threat Assessment Levels

This section of the plan will be more clearly defined in Section V. This area also represents part of the new thought process to terrorists incidents. The primary departments for determining the appropriate threat level will be assigned to law enforcement agencies at local, state and federal levels.

V. IMPLEMENTING GUIDELINES

Threat Assessment Levels

As defined above, this operational area will be the responsibility of law enforcement agencies. The E911 Center for the city and county will likely be the first location to receive threats of terrorism. All E911 Communication Center supervisors / managers should be involved in the intelligence briefings that are part of threat level assessment. The threat levels (TL) are identified below:

A. TL-1:

This threat level represents above average monitoring of national and international events that have a direct connection to terrorist activity. The law enforcement agencies collecting this data are not required to notify other agencies. Two examples associated with TL-1 activity are:

1. U.S. Embassy bombing and other bombing activity in industrial and Third World nations of the world, but not in the United States.
2. Verifiable threat by terrorist in Third World countries. Protest of American policy in other parts of the world.

B. TL-2:

This threat level represents terrorist activity in the U.S. and particularly in Southern and Mid-Atlantic states. Monitoring by law enforcement agencies is a daily activity, and possibly full time assignments by police personnel to monitor and collect intelligence. This threat level requires notification of all organizations listed in Section IV, Item C, above. In addition, a meeting of all agencies involved will be held to determine a plan of action, degree of plan activation, potential for incidents to take place in our community, and to identify possible targets. Daily reports will be made to city and county manager's office at this level. Examples of TL-2 are as follows:

1. Chemical threat like Anthrax.
2. Bomb like the type that occurred in Atlanta, Georgia.
3. Bomb threat like the type that occurred in Birmingham, Alabama.
4. Bomb threat in Cumberland County Courthouse or school.
5. KKK rallies or marches.
6. Threats from sources deemed to be valid by known groups.
7. Other racial groups known for violent behavior.

C. TL-3:

This level represents the highest degree of awareness and preparedness. No event has actually occurred; however, all indicators point to a possible event within a 24- hour period. Representatives from the agencies listed in Section IV, Item C., will be on 24- hour alert. A command location will be established that will act as the clearinghouse for all information, rumors and press releases. This location should be the EOC to ensure immediate command and control of the situation. The next step beyond this level is an actual event that has occurred in our community. The public service departments and corporate community departments will be activated at this time. Some possible examples of TL-3 are:

1. Planned rally or march by known radical groups.
2. Individual or group blocking access or holding occupants of building hostage until demands are met.

3. Serious threats of violence or mass fatalities by known groups or individuals at a specific location or facility.

VI. NEW ENTRY PROTOCOLS

This organizational area will be detailed by the Fayetteville Regional Response Team #3 and should be incorporated into SOGs for all responding organizations. In addition, this area is part of the new awareness that must be included in the training program that reaches out to all responders in the city and county. The new entry protocols should be based on intelligence provided by law enforcement. The fire service / hazmat team and law enforcement agencies must work together as a close-knit crew to ensure that entry into possible area(s) of danger are minimized and that a minimum of personnel are exposed to danger. The primary components of the new entry protocols are listed below:

- Awareness of secondary explosive devices.
- Personal protective equipment - when and what to wear as minimum requirement for entry into an incident site.
- Who should go into a facility?
- Maintaining the chain of evidence process.
- Training standards - all training in the same format to ensure uniformity.
- Clearly defined hot zones, warm zones and safe zones.
- Signs and symbols - critical for early identification of agent or chemical.
- Other, as defined by HazMat Team and by development team for SOGs.

A. Roles, Responsibilities and Checklists

This section will outline the primary areas of responsibility for the primary responding organizations. The checklist will identify critical items of concern for all organizations. All additional checklists, or areas or responsibilities will be covered in SOGs.

B. Areas of Concern - Threat Level Conditions

All responding organizations will implement or alert their people to the following areas of concern as part of Threat Level conditions:

- Develop internal notification procedures for responding departmental personnel.
Ensure internal distribution of response plan.
- Follow directions of IC and EOC.
- Adhere to site entry protocols.
- Ensure adequate training programs are implemented in their department.
- Adjust work schedules for 24- hour operations for a minimum of 96 hours (4 days)
- Develop control measures for Chain-Of Evidence process.
- Provide department representatives to incident site and EOC.
- Document all response activities from time of notification until termination.
- Participate in Command and Control team as directed by IC and EOC.
- Be ready to commit all available departmental resources to response and recovery effort.
- Develop a need-to know list for internal operations.

- Other as directed by IC or EOC.

C. Law Enforcement Agencies - Local

- Develop or enhance intelligence gathering for acts of terrorism.
- Establish distribution or notification for sharing of information.
- Determine Threat Level (TL) based on information assessment.
- Initiate notification process to all organizations listed in Section IV, Item C.
- Maintain open lines of communications on intelligence with state and local agencies.
- Review personal protective equipment (PPE) requirements and site entry protocols.
- Initiate a meeting of organizations based on assessment of conditions.
- Assign representative to development team for SOGs.
- Establish site security based on hot zone, warm zone, and safe zone.
- Assist in site evacuation of personnel.
- Provide shelter security for activation of shelters resulting from incident.
- Provide guidance or training for maintaining Chain-of Evidence process.
- Provide stand-by capability for security at hospitals and medical facilities.
- Establish ICS if first on scene.
- Other as identified by local law enforcement.

D. Fire Service - Local

- Assign representative to SOG development team.
- Provide fire suppression at site and surrounding location as required.
- Determine hot zone, warm zone and safe zones.
- Provide rescue and resource operation.
- Provide Emergency Medical Responders for medical assistance.
- Assist in evacuation of personnel from site.
- Determine area to be evacuated for public safety.
- Work with law enforcement for preservation of site evidence.
- Interface with Medic (EMS paramedic provider) on medical assistance issues.
- Develop new site entry protocols as part of SOG team development.
- Identify, to maximum extent possible, injured personnel and fatalities.
- Assist medical examiner with remains recovery.
- Establish ICS if first on scene.
- Be prepared to assume IC position as conditions change.
- Provide or arrange to assist with medical coverage at shelter site.
- Provide for medical monitoring of response personnel.
- Train personnel in signs and symptoms of chemical and biological agents.
- Provide IC and EOC with needs assessment for incident resolve.

- Observe site entry protocols.
- Assist with mass decontamination of on-site personnel.
- Other - to be determined.

E. Emergency Medical Service - Provider

- Assume lead role for on-site medical assistance.
- Develop interface with medical doctors for on-site triage patients.
- Develop procedures for notification of medical service providers.
- Assign representative to SOG development team.
- Identify to maximum extent possible injured personnel and fatalities.
- Assist medical examiner with remains recovery.
- Establish ICS if first on scene.
- Be prepared to assume IC position as conditions change.
- Provide or arrange medical monitoring of response personnel.
- Train personnel in signs and symptoms of chemical and biological agents.
- Provide IC or EOC with needs assessment for incident resolve.
- Observe site entry protocols.
- Assist with mass decontamination of on-site personnel.
- Other.

VII. CHAIN OF EVIDENCE

A. New Site Protocols

This process is part of the new site entry protocols and is crucial for ensuring preservation of any evidence collected. Although, this phase of the operation is very critical to incident resolve from start to finish, it should NEVER take precedence over LIFE SAFETY operations. The law enforcement services at local, state and federal levels will provide guidance on this part of the incident operation. All agencies, both primary and support must be aware of the importance of this issue.

B. Considerations

- Do not throw away any debris or trash from scene.
- Debris removal will be controlled by law enforcement agency at local, state or federal level.
- Rescue personnel and medical personnel at the site and at the hospital will be familiar with this operation and will do all within their power to ensure preservation of evidence short of life safety or life and death situation. LIFE SAFETY ALWAYS COMES FIRST.
- Private contractors for debris removal MUST follow directions of law enforcement agencies.

VIII. MASS DECONTAMINATION

- A. This segment of response to terrorist incidents is very critical part of response. The ability to conduct mass decontamination of large numbers of people in a very short period is imperative to limit exposure, possible burden to hospitals, and spread contamination. The primary departments assigned to this program element are:
1. Cumberland County Volunteer Fire Departments
 2. Mutual Aid Fire Departments for:
 - a. Dependable source of water
 - b. Adequate resources to conduct operation
 - c. Adequate workforce to perform mission.
 - d. Ability to conduct operation at multiple locations.
- B. Local resources will be the primary source for this program element. The State will also provide assistance and mutual aid requests can provide resources and personnel. In addition, elements of the military, North Carolina National Guard, and the Air National Guard can assist in this phase of operation. Prior agreement with local and state units listed above will be part of local and state plans that address mass / large-scale decontamination.

IX. PUBLIC INFORMATION

This area of response for incidents of terrorism or suspected acts of terrorism is critical to ensure public confidence, eliminate rumors, provide accurate, timely information to concerned responders and to its citizens. This activity **MUST** be a joint effort by all levels of government and **MUST** be centrally located in the EOC setting. The establishment by local government of a Joint Information Center (JIC) with all levels of responding organizations of government present will be the basis for disseminating information to the media and the public.

X. DEMOBILIZATION / DEACTIVATION

This part of response and recovery from terrorist incidents will be determined by the EOC based on feedback and information from law enforcement agencies and will be based on threat level as defined by the lead agency (law enforcement). In addition, the Emergency Management Office will establish a time for critique by responding agencies and by recovery crisis management and consequences management efforts associated with the incident.

BIO-TERRORISM RESPONSE WITH HEALTH INTERFACE

I. PURPOSE

Cumberland County Emergency Services, along with Fire/EMS/Law Enforcement/Health have agreed on a coordinated response to possible Terrorism with Biological Agent. The Emergency Operations Plan generalizes terrorism response and hazardous chemical response. This particular attachment will focus on Bio-Terrorism utilizing the National Domestic Preparedness Field Guide as a standard protocol.

II. SITUATION AND ASSUMPTIONS

This section provides the environment for utilizing the threat assessment for the County and determining the County's vulnerable areas. Also utilizing the response resources available in the County / State / Federal resources. Two (2) basic areas must be understood:

(1) Crisis Management is a Law Enforcement responsibility at the Local / State / Federal level. Crisis Management begins once an attack has occurred. Local Law Enforcement will request Regional and State resources as needed. Federal Resource request will be made through the NC State EOC.

(2) Consequence Management is coordinated by local Emergency Management and State Emergency Management will request Federal Resources for Consequence Management.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

COMMUNICATION / NOTIFICATION AND WARNING

Primary Agency: Cumberland County Emergency Services {Communications}

Support Agencies: Cumberland County Fire Marshal
Cumberland County Fire Departments
Cumberland County EMS
Fayetteville Communications Division

I. PURPOSE

This section describes the county's emergency communication / notification and warning system.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. Communications / Notification and Warning play a critical role in emergency operations. Communications networks and facilities exist and operate throughout the county. Properly coordinated, these facilities provide for effective and efficient response activities.
2. The County Emergency Services / Communications Center is located in the Law Enforcement Center at 131 Dick Street. The County Emergency Communications Center will function as the County Warning Point. The City of Fayetteville Communications Center is located in City Hall, 433 Hay Street and serves as a backup to the County Emergency Services / Communications Center.
3. The County Emergency Services / Communications Center will normally initiate notification and warning of emergencies/disasters to emergency response agencies within the county.
4. Broadcast media will be relied upon to assist in the dissemination of warning to the general public.
5. Emergency vehicles are available for warning the general public.
6. Operational telephone and / or radio communications may be utilized to notify public officials, EOC staff, emergency personnel and others as required.
7. Special care groups or persons in-group quarters may have to be provided special warning notifications.

B. Assumptions

1. The communications system will survive and / or withstand the effects of a disaster.
2. Use of all available forms of warning and notification will not provide sufficient warning to the general public and special needs population.
3. Local broadcast media will cooperate in broadcasting disaster-related instructions to the public.
4. Depending on the severity of the emergency, telephone communication may be disrupted. Local and regional radio / television stations without emergency power may also be off the air. If this occurs, public address systems and door-to-door sweeps may be initiated.
5. Demand for information may be very heavy, therefore; sufficient staff will be provided and trained to work on an Information Hot Line.

III. CONCEPT OF OPERATIONS

A. Line of Succession for Communication / Notification and Warning is as shown below:

1. Cumberland County Emergency Communications Center Supervisor
2. Cumberland County Emergency Communications Center Director
3. Cumberland County Emergency Communications Center Deputy Director

B. General

1. The County Emergency Communications Center is operated 24 hours a day.
2. The Emergency Services Director will request the Communications Coordinator to expand the Communications Center as required.
3. The Emergency Services Director will implement emergency communications procedures and activate backup capabilities as necessary.
4. The Emergency Services Director will notify appropriate personnel.
5. Emergency warning may originate at the national, state or local level of government. Timely warning requires dissemination to the public by all available means:
 - a. National Warning System (NAWAS)
 - b. National Weather Service (NWS)
 - c. Emergency Alert System (EAS)
 - d. State Operated Two Way Radio Systems
 - e. N.C. Division of Criminal Information (DCI)
 - f. Local Government Radios
 - g. Sirens, horns, or mobile public address systems
 - h. Telephone

C. Specific

1. Telephone Service
 - a. Telephone service in the county is provided by Sprint Carolina Telephone and Telegraph Company and Star Telephone Company.
 - b. The telephone company has been provided with a list of essential users of telephone service.

- c. Essential users will receive priority telephone service during emergencies. (Reference APPENDIXES, LIST OF ESSENTIAL TELEPHONE SERVICE USERS AND RESTORATION PRIORITY.)
 - d. If telephone service is disrupted or damaged, the essential user list is applicable for restoration priority.
2. Two-Way Radio Systems
- a. The two-way radio systems are designated as the principal system to be used for direction and control activities. They provide voice communications between mobile units operated by department heads or chiefs of emergency services and the Emergency Communications Centers. The principal operators are:
 - (1) The Sheriff (800 MHz)
 - (2) The EMS Director
 - (3) The Fire Chiefs
 - (4) The County Emergency Services Director
 - b. The following county and municipal departments, agencies and organizations operate two-way radio systems:
 - (1) Sheriff's Office
 - (2) County Fire Departments
 - (3) Emergency Medical Services (EMS)
 - (4) Emergency Services Department
 - (5) County Administration
 - (6) County Electrical and Mechanical
 - (7) County Engineering Department
 - (8) County Landscaping Department
 - (9) County Carpentry Department
 - (10) County Inspections Department
 - (11) County Parks and Recreation Department
 - (12) Board of Education
 - (13) Fayetteville City Fire Department (800 MHz)
 - (14) Fayetteville City Police Department (800 MHz)
 - (15) Spring Lake Police Department
 - (16) Hope Mills Police Department
 - c. The following county volunteer organizations operate two-way radio systems:
 - (1) Amateur Radio Emergency Service (ARES)
 - (2) Cape Fear Amateur Radio Society
3. Satellite Phones
- a. Satellite Phones (SAT) are located in the Cumberland County Emergency Services Communication Center. This is a 24-hour center. The SAT Phone System will enable communications through both SAT Phone and Two-Way communications statewide.
- D. Receipt and Dissemination of Warning
- 1. The N.C. Highway Patrol is the State Warning Point at the Raleigh Communications Center. NAWAS and NWS alerts are received there from Federal agencies. The NC Division of Emergency Management Operations

Division is the alternate State Warning Point for NAWAS and selective signaling.

2. Warning received from the site of an emergency is normally reported to the Sheriff's Office Desk Sergeant and to the County Emergency Services / Communications Center.
 3. Notification of governmental officials and emergency response personnel from the County Emergency Services / Communications Center will follow established procedures.
- E. Dissemination of Warning to the General Public. The general public will be notified of major emergencies by:
1. Emergency Alert System (EAS)
 2. Weather alert radios
 3. Mobile public address systems as appropriate
 4. House to house alert by emergency personnel
 5. Television and radio station
- F. Dissemination of Warning to Special Populations.
1. Hearing impaired, special care groups, persons in group quarters and non-English speaking groups are notified by the most expedient means possible.
 2. Public school, hospitals and other special warning locations are notified by emergency personnel at the County Emergency Services / Communications Center and by weather alert radios.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

DIRECTION AND CONTROL

Primary Agency: Chairman, Board of County Commissioners

Secondary Agency: Board of County Commissioners
County Administration
Municipal Mayors and Councils
City Managers

I. PURPOSE

This section outlines the direction and control procedures for emergency operations and identifies the personnel, facilities and resources that will be utilized in the coordinated response activities.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. Many hazards exist within or threaten the county which have the potential to cause disaster of great magnitude, warrant centralization of the direction and control function in order to conduct effective and efficient emergency operations.
2. The County EOC serves as the central direction and control point for countywide emergency response activities. SEE APPENDIXES FOR COMMUNICATIONS INFORMATION.
3. The County EOC is located in the Cumberland County Law Enforcement Center at 131 Dick Street, Fayetteville.
4. Cumberland County utilizes the City of Fayetteville EOC as an alternate EOC.
5. The City of Fayetteville operates an EOC. It is located in City Hall at 433 Hay Street, Fayetteville.
6. The Town of Hope Mills operates an EOC at the Hope Mills Fire Department located at 5788 Rockfish Road. The EOC has back-up power.
7. Municipalities may utilize facilities within their jurisdiction as EOCs and the county may provide staff as the situation dictates.
8. The County and / or Municipal EOC will be activated upon the threat or occurrence of a major emergency / disaster and designated personnel will report to their EOC in a timely fashion.

9. The senior officers having primary responsibility for the situation will establish On-site direction and control.

B. Assumptions

1. All municipalities will not send a representative to the County EOC.
2. It is assumed that municipalities will maintain communications with the County EOC via telephone, radio, fax, or Internet e-mail.
3. The County EOC is adequate for coordinating countywide emergency operations.
4. Municipalities will act in unison with the county on such issues as proclamations, security, and public information.
5. Sufficient procedures have been developed to direct and control multi-hazard disaster operations.
6. Emergency operations and coordination at all levels of government will be carried out according to plans and procedures.

III. CONCEPT OF OPERATIONS

A. Line of Succession for Direction and Control is as shown below:

1. Chairman, Board of County Commissioners
2. Board of County Commissioners
3. County Manager

B. General

1. Emergency operations shall include all activities, which are directed toward the reduction of immediate hazards, establishing situation control and the restoration of normal operations.
2. Direction and control of normal day-to-day emergencies of single agency response is performed by the senior officer on the scene. (i.e. law enforcement, fire, EMS). Multi-agency responses are done in accordance with local ordinances, policies, and procedures. Response forces in Cumberland County will utilize the National Incident Management System (NIMS).
3. Municipalities within the County may exercise independent direction and control of their own emergency resources, outside resources assigned to the municipality by the County Emergency Operation Center, and resources secured through existing mutual aid agreements with other municipalities. Requests for state or federal assistance will be directed to the County Emergency Services Director.
4. Centralized countywide direction and control (EOC activation) is desirable when one or more of the following situations occur:
 - a. There exists an imminent threat to the safety or health of the public.

- b. The disaster involves multiple departments /jurisdictions within the county, which are relying on the same resources to resolve the emergency / disaster.
 - c. Local resources are inadequate or depleted and significant mutual aid resources must be utilized to resolve the emergency situation;
 - d. Local emergency ordinances are implemented to control the emergency situation.
 - 5. The Cumberland County EOC may be activated by:
 - a. The Chairman of the Board of County Commissioners,
 - b. The County Manager, or designee, or the Emergency Services Director.
 - 6. Activation of a municipal EOC will be done by the Mayor or their designee.
 - 7. Emergency operations and coordination at all levels of government will be carried out according to the supporting SOG's in place.
 - 8. Operational readiness of the County EOC is the responsibility of the Emergency Services Director who will serve as the Operations Officer. Operational readiness of Municipal EOCs is the responsibility of the Mayor or their designee.
 - 9. Backup electrical power is available in the EOC. Maintenance on the backup electrical power system and generator is the responsibility of the building electrical and mechanical personnel.
 - 10. Administrative decisions regarding food supplies and other incidental needs for the County EOC during activations is the responsibility of the Logistics Officer in the EOC.
 - 11. Administrative decisions regarding individual municipalities are the responsibility of the Town Mayor or Chief elected official.
 - 12. Upon activation of any municipal EOC, the municipality will establish communications with the County EOC or Emergency Communications Center, who will in turn notify the County Emergency Services Director.
 - 13. Whenever an EOC is activated or activation of an EOC appears to be imminent, the County Emergency Services Director will in turn notify the Division of Emergency Management, NC Division of Emergency Management Eastern Branch Office.
 - 14. Frequent staff reviews / briefings will be conducted.
- C. Staffing
- 1. Personnel reporting to an EOC will operate in one of two functional sections as assigned by the Operations Officer.
 - a. The Policy / Administration Group under the direction of the Chairperson of the jurisdiction or his designee consists of the decision makers of the jurisdiction and others as decided by the chairperson. This group is responsible for:

- i. The approval of policies and strategies pertinent to the emergency / disaster operation.
 - ii. Provide leadership and decision making for implementation by the Support Group.
 - iii. In coordination with the Public Information Officer, prepare statements for release to the general public.
 - iv. Utilizing communications equipment available to the Policy/Administration Group, the members will maintain a line of communication with their respective administrators and County/Municipal elected officials.
 - v. Upon activation, maintain a presence in the EOC to carry out the direction and control function.
 - vi. In cooperation with the Support Group and the Operations Officer, maintain an awareness of actions being taken in response to the emergency situation.
- b. The Support Group, under the direction of the Policy / Administration Group is responsible for on-scene operations including the allocation of resources. The Support Group consists of the following Sub Groups (Emergency Support Functions):
- i. Information: Group Leader - Public Information Officer.
May include: County Manager, Commissioners and Emergency Services Director.
 - ii. Communications / Notification and Warning: Group Leader - County Emergency Communications Director.
May include: County/City Emergency Communications, the Sheriff/Police Department and Amateur Radio.
 - iii. Traffic Control / Law Enforcement/Emergency Transportation: Group Leader - Sheriff.
May include: Sheriff's Office, N.C. Highway Patrol, Municipal Police Departments and the N.C. Department of Transportation.
 - iv. Fire: Group Leader - Fire Marshal.
May include: Fire Chiefs Association President, Fire Marshal / Fire Chief, Sheriff's Office and EMS Director.
 - v. EMS: Group Leader - EMS Director.
May include: Fire Marshal / Fire Chief, Fire Chiefs Association President, Sheriff's Office and Fire Department.
 - vi. Search and Rescue: Group Leader – Sheriff's Office.
May include: Sheriff's Office, Fire Department, Fire Marshal / Fire Chief, Fire Chiefs Association President, EMS Director, EMS and Emergency Services
 - vii. Shelter / Mass Care: Group Leader - Department of Social Services.
May include: Department of Social Services, Health Department, Emergency Medical Services, Superintendent of Schools, American Red Cross and Emergency Services.
 - viii. Medical Emergency / Mass Casualty: Group Leader - Health Director.
May include: Health Department, Emergency Medical Service, Rescue, Sheriff's Office and Fire Department
 - ix. Utilities: Group Leader - Emergency Services.
May include: Emergency Services, Public Utilities Commission, Carolina Power and Light, South River Electric Coop., Lumbee River Electric and Carolina Telephone.

- x. Damage Assessment / Recovery: Group Leader - County Assessor.
May include: Emergency Services, County Assessor, Inspections Department, GIS Department and Finance Officer.
- xi. Recovery: Group Leader - Assistant Finance Director.
May include: Emergency Services, County Assessor, Inspections Department, GIS Department and Solid Waste.
- xii. HAZMAT: Group Leader - HAZMAT Leader.
May include: HAZMAT Team Representative, Law Enforcement, Emergency Medical Services and Emergency Services and Fire Chief.
- xiii. Donated Goods / Unmet Needs: Group Leader - Emergency Services.
May include: Emergency Food and Shelter Committee, Volunteers and United Way.
- xiv. Volunteers: Group Leader - Emergency Services.
May include: Volunteer Committee, Emergency Services, Fire Association President, Red Cross, Salvation Army and United Way.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

DONATED GOODS MANAGEMENT

Primary Agency: Cumberland County Emergency Services

Support Agencies: American Red Cross
Department of Social Services
Salvation Army
United Way
Urban Ministries
Cape Fear Community Food Bank

I. PURPOSE

This section describes the management of goods donated as disaster relief to the people of Cumberland County, as well as the collection and shipment of goods donated by the people of Cumberland County to victims in other areas.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. Historically, persons not directly affected by an emergency / disaster are eager to render aid to disaster victims through donations of money, goods, and services.
2. Lack of an organized system of management for the identification, receipt, organization, and distribution of donations will result in chaos.
3. The timely release of information to the public regarding needs and points of contact is essential to management of donated goods.
4. Donated goods are essential to recovery in most cases.
5. Suitable facilities, equipment, and personnel are needed for the management of donated goods.
6. The coordination of the collection, packaging, and shipment of goods to a disaster area is best accomplished at the county level.
7. Churches, the community colleges, and other volunteer agencies in Cumberland County could serve as collection points for donated goods.
8. Monetary donations, staple goods, and those items specifically requested best serve the needs of victims.
9. The distribution of donated goods must be coordinated with the identification of unmet needs in the community.

B. Assumptions

1. Suitable space and equipment will be available to receive, sort, and store the influx of donated goods.
2. Adequate personnel for donated goods operations will be available.
3. Local distribution sites will be convenient to the affected populations.
4. A regional reception and distribution site for donated goods will be established by the State.
5. Unsolicited donations of goods can be expected.
6. Donations of non-useful and unwanted goods can be expected; these include loose, unsorted clothing, extremely perishable items, and worn-out items.
7. People unaffected by the disaster will seek to receive donated goods.
8. Some donors will seek to bypass the distribution system established by the county.
9. An aggressive public information effort will expedite the distribution of goods as well as limit an influx of unwanted goods.
10. Citizens and businesses of Cumberland County will elect to donate money and goods to disaster victims elsewhere; they will need and seek guidance on methods of participation.
11. Transportation will be available to ship donated goods from the county to other destinations.
12. It is inevitable that there will be a surplus of some donated goods, which will require disposal.

III. CONCEPT OF OPERATIONS

A. The Line of Succession for Donated Goods Management is as shown below:

1. Emergency Services Director
2. Emergency Services Deputy Director
3. Resource Management Team Leader

B. General

1. Magnitude of the disaster will dictate the amount of spaces and personnel required for the reception and distribution of donated goods.
2. A central reception center to receive and sort the foods will be identified. Distribution centers near the affected area will be established. The location will be announced through normal media channels.
3. Donation of goods and services will be utilized to the fullest extent possible to lessen the effects of the disaster on the victims and will be used for the purpose they were donated.

4. Individuals coming from outside the area to work as volunteers should be prepared to be self-sufficient for food and shelter. Agencies should coordinate housing needs prior to individuals arriving in the impacted area.
5. Donations of cash will be encouraged in lieu of goods.

C. Receipt of Donated Goods for Cumberland County

1. The Emergency Services Department will serve as the lead agency for the reception and distribution of donated goods.
2. The magnitude of the disaster and the severity of local need will dictate the amount of space and personnel required for the reception and distribution of donated goods.
3. Ideally, a central reception and sorting center for donated goods should be established, and separate locations convenient to the affected areas of the county should be utilized as distribution centers.
4. The Emergency Services will coordinate with other relief agencies working on the disaster to ensure needs are met without duplication of effort.
5. Operational personnel will be solicited from the EOC list of available personnel resources.
6. Public information regarding distribution sites, needed goods, volunteers, and other pertinent matters will be coordinated by the Public Information Officer.
7. Requests for needed goods and re-supply of needed goods will be channeled through the State EOC.
8. Upon receipt, donated goods must be sorted and packaged in a manner suitable for distribution.
9. When identifiable, unwanted goods should be refused.
10. Surplus donated goods will be sold or otherwise disposed of in a manner consistent with the donor's apparent intent.

D. Collection and Shipment of Donated Goods to Other Counties, States, and / or Localities.

1. An attempt will be made to identify the needs of the intended destination prior to collection of goods.
2. A systematic method will be established for collection of the donated goods to be shipped.
3. Goods will be sorted and packaged in an appropriate manner prior to shipment to accomplish the following:
 - a. Timely and undamaged arrival at the destination
 - b. Proper identification of contents
 - c. Minimal need for repackaging/sorting
 - d. Ease of loading and unloading

- e. Elimination of inappropriate/unwanted goods
- 4. Shipments of donated goods will be coordinated with the receiving destination prior to departure from the county.
- 5. Suitable means of transport will be arranged for delivery of the shipment in a timely manner.
- 6. When appropriate, shipments of donated goods should be coordinated with the Eastern Branch or State Office of Emergency Management.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

EMERGENCY MEDICAL SERVICES

Primary Agency: Cumberland County Emergency Medical Services of Cape Fear Valley Hospital System

Support Agencies:

- Eastover Fire Department
- Vander Fire Department
- Cotton Fire Department
- Cedar Creek Fire Department
- Cumberland Road Fire Department
- Westarea Fire Department
- Stoney Point Fire Department
- Carvers Creek Fire Department
- Wade Fire Department
- Godwin-Falcon Fire Department
- Gray's Creek Fire Department
- Linden Fire Department
- Hope Mills Fire Department
- Spring Lake Fire Department
- Gray's Creek 2 Fire Department
- Fayetteville Fire Department

I. PURPOSE

This section provides for emergency medical services during natural and technological emergencies.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. Cumberland County is served by four major medical facilities:

Cape Fear Valley Medical Center (Trauma Center)	512 Beds
Highsmith-Rainey Hospital	150 Beds
Womack Army Medical Center	288 Beds
Veterans Administration Medical Center	319 Beds

2. EMS / Fire Fighting Units provide first responder services. Advanced Life Support is provided by Emergency Medical Services. EMS is under control of Cape Fear Valley Medical Center.
3. Cumberland County is served by medical helicopters from Duke, UNC, and Pitt County.

B. Assumptions

1. A large-scale emergency will result in increased demands on all EMS and medical personnel, and a mass casualty event could overwhelm response capabilities.
2. Following a disaster many of the injured will be transported to medical facilities by persons other than trained medical personnel.
3. Disruption of the county's communications system will severely impede delivery of emergency medical service.
4. Debris on roadways may hamper first responder response.
5. Catastrophic disasters may affect large areas of the county and surrounding counties, and medical resources may be damaged, destroyed, or unavailable.
6. Following a major disaster occurrence, field emergency medical facilities may have to be established. This could include a temporary morgue.

III. CONCEPT OF OPERATIONS

A. The Line of Succession for Emergency Medical Services is as shown below:

1. Cumberland County Emergency Medical Services Director
2. Cumberland County Emergency Medical Services Field Operations Supervisor
3. Cumberland County Emergency Medical Services Administrative Supervisor

B. General

1. Emergency operations for public health and medical services will be an extension of normal agency and facility duties.
2. Coordination between Health and Medical providers is necessary to ensure emergency operational readiness.
3. Coordination of resources beyond that of the county emergency response agencies will be directed through the Cumberland County Emergency Services Director to the NC Division of Emergency Management Eastern Branch Office.

C. Health

1. The primary concern of public health is disease control. County health agencies will implement effective environmental health, nursing and health education practices to minimize the incidence of disease.
2. Frequent inspections of damaged housing and emergency shelters will be necessary to determine the need for emergency repairs, pest control, sanitation, or other protective procedures.

D. Medical

1. EMS will provide field medical care as needed during emergency situations and coordinate necessary medical transportation.
2. EMS capabilities will be expanded by qualified volunteer first aid, rescue and fire personnel and first responders serving the respective response areas.
3. During mass casualty incidents, EMS will establish patient triage, holding, treatment and transportation areas.
4. When necessary an EMS official will be located at an established command post to coordinate responding medical units and establish communication links with hospitals, the Emergency Communications Centers or the EOC.
5. Transfer of authority on-scene will be in accordance with established procedures.

E. Mortuary

1. The Medical Examiner will identify and take charge of the proper recovery of human remains.
2. Local companies may be called upon to provide specialized equipment such as refrigerated trucks.
3. Evacuation of Special Populations (Institutions, Facilities and Special Care Individuals)
 - a. Institutions within the county must develop procedures for evacuation and provide transportation to the shelter.
 - b. Schools will develop evacuation procedures. Pre-designated buses will be utilized for students without their own vehicles. Schools within the danger zone for hazardous materials spills will develop procedures for in place sheltering and "walk-away" evacuations. Parents will be advised of the location of reception centers.
 - c. The County Department of Social Services will advise the Emergency Services Department of individuals known to need transportation assistance. An attempt will be made to assist the individuals with transportation.
 - d. The jail and detention center within the county will develop procedures for the relocation of prisoners to jails outside of the threatened area.
 - e. Evacuation from county parks and recreation areas will be coordinated by the County Parks Department.
 - f. Large employers within the county have procedures for evacuation of their employees. These procedures include, if needed, the temporary shutdown of their facilities.
4. Reentry
 - a. The decision to allow reentry to Cumberland County will be made by the Policy / Administration Group, based on considerations of public safety.

- b. The Policy / Administration Group may establish a priority reentry system for the public.
- c. Staging areas will be established, and personnel reporting to Cumberland County will be routed to one of these areas.
- d. Sections of Cumberland County may remain isolated or closed to the public even after reentry begins.
- e. Reentry to the affected areas will be coordinated with the Cumberland County Policy / Administration Group.
- f. Shelter / mass care operations may need to be implemented depending upon the degree of destruction in Cumberland County.

**CUMBERLAND COUNTY
EMERGENCY OPERATIONS PLAN
EMERGENCY OPERATIONS CENTER**

GENERAL	ACTIVATION	ORGANIZATIONAL GROUPS	OPERATIONAL PROCEDURES Roles and Responsibilities	ADMINISTRATION	ANNEXES
A. Purpose	A. Warnings / Alerts	A. Executive	A. Executive	A. Registration	1. Key Personnel List
B. Scope	B. Alerting	B. Operations	B. Operations	B. Manpower	2. EOC Telephone #s
C. Facility	C. Activation of EOC	C. Technical / Plans	C. Technical / Plans	C. Staff Support	
D. Function		D. Logistics	D. Logistics	D. Housekeeping	
E. Manning		E. Finance	E. Finance	E. Office Supplies	
			F. Message Control	F. Transportation	
				G. Status Information	
				H. Maps	
				I. Security	
				J. Alerting Staff	

Primary Agency:

- Emergency Management

Support Agencies:

- Control / Executive Group
- Operations Group
- Technical / Plans Group
- Logistics Group
- Finance Group

I. GENERAL

A. Purpose

The purpose of this SOG is to establish standard guidelines for the activation and operation of the Cumberland County Emergency Operations Center (EOC). Also see Direction and Control for continuity of government and lines of succession in overall operations, including the Emergency Operations Center.

B. Scope

1. This SOG includes organizational and functional guidelines necessary to activate and operate the EOC quickly and efficiently.
2. This SOG will apply except when modified as needed to meet specific conditions and situations. Modifications will be carried out by the Emergency Management Coordinator or his / her designee.

C. Facility

The EOC is located 131 Dick Street, Fayetteville, North Carolina.

D. Function

The Emergency Operations Center provides necessary space and facilities for the centralized direction and control of the following functions:

1. Direction of emergency operations.
2. Communications and warning.
3. Damage assessment and reporting.
4. Containment and / or control of hazardous material incidents / emergencies.
5. Dissemination of severe weather watches and warnings.
6. Actions to protect the health and safety of the general public, to include:
 - a. Public Information, instructions, and directions
 - b. Evacuation and / or sheltering

E. Manning

The Cumberland County EOC will be manned by representatives of county and city governments involved in emergency operations and volunteers from civic organizations as appropriate. Personnel are listed in Attachment 1 of this document.

II. ACTIVATION OF EOC

A. Warning / Alerts

1. *Source and Means of Receipt*

Warnings / alerts may be received from any source and by any means. The more likely sources and means are shown below. Warnings or directed messages will be verified according to developed procedures to preclude unnecessary reaction to possible prank notification.

- a. On-the-scene personnel
- b. Weather Service
- c. State Highway Patrol
- d. Division of Criminal Information (DCI)
- e. EM Area Coordinator, EBO
- f. News Media

- g. Hazardous materials fixed facilities in city / county
- 2. *Persons to Receive Messages*
 - a. Warning may be received by the Cumberland County Communications Center. (911)
 - b. Cumberland County Emergency Management Director or his representative may also receive Warning/alerts.

B. Alerting Procedures

Upon receipt of a valid warning message, the Emergency Management Director will:

- 1. Consult with the appropriate county and / or city officials and make recommendations for the activation of the EOC.
- 2. Initiate alerting / notification guidelines to extent directed in the manner prescribed in this SOG.
- 3. Officials alerted by the action prescribed above will alert those individuals and / or departments for which they are responsible.

C. Activation

- 1. The EOC will be considered activated when sufficient personnel for operational activities are physically present.
- 2. Reporting - All personnel reporting for duty in the EOC will make their presence known to the Emergency Management Director or their section leaders.
- 3. When the EOC is activated, space will be utilized as suits the operation and designated by the Emergency Management Director.
- 4. The Emergency Management Director will provide the initial situation briefing when the EOC is activated. Subsequent briefings will be held as needed.

III. ORGANIZATION

A. Staffing

- 1. Full Activation
- 2. Limited (Partial) Activation - Sections will be represented as directed by the Emergency Management Director.

B. Operations groups will be composed of the following:

- 1. *Executive*
 - a. Chief executives (i.e., County Commission, County Manager)
 - b. Emergency Management Coordinator
 - c. Public Information Officer
 - d. S.E.R.T. (State Emergency Response Team) Representative
- 2. *Operations*
 - a. Operations Director / Manager

- b. Law Enforcement
 - c. Fire Services / Fire Marshal
 - d. Public Works / Maintenance
 - e. Social Services
 - f. Emergency Medical Services and Rescue
 - g. Communications and Warning
 - h. Public Health
 - i. School System
 - j. Mental Health
 - k. Cooperative Extension (Agriculture)
 - l. Damage assessment
3. *Technical / Plans /Special Services*
- a. Hazardous Materials safety* As required
 - b. Damage Assessment * As required
 - c. Animal Control * As required
 - d. Other technical support services
4. *Logistics*
- a. Communications
 - b. Red Cross
 - c. Ham Operators
 - d. Salvation Army
 - e. Other volunteer or support agencies
5. *Finance*
- a. Finance officer
 - b. Purchasing

IV. OPERATIONAL PROCEDURES

A. General Duties and Responsibilities

1. *Executive*

a. Chief Executives

The Chief Executives are responsible for the formulating of policy and operational guidelines for the conduct of emergency operations. They are also responsible for the overall management of survival and recovery efforts.

b. Emergency Management Coordinator

The County Emergency Management Director is charged with planning, organizing, directing and supervising emergency operations conducted within the County and will:

- (1) Assign and where necessary, train personnel to accomplish required tasks in the operation of the EOC.

- (2) Ensure that the EOC SOG and appropriate Annexes are periodically updated.
- (3) Maintain sufficient supplies and equipment to ensure the operational capability of the EOC.
- (4) Supervise and coordinate the functions during operations.
- (5) Provide briefings as needed.
- (6) Such other tasks as may be required to safeguard property and protect the people of Cumberland County in emergencies.
- (7) Locate and coordinate resources and resource requests.

c. Public Information Officer (PIO)

The Public Information Officer is responsible for overall coordination of public information activities and will:

- (1) Establish procedures for the dissemination of information.
- (2) Provide the public with educational-type information for their safety and protection.
- (3) Disseminate public instruction and direction.
- (4) Act as the government's point-of-contact with the news media.
- (5) Serve under the direction of the County Manager or designee.

d. S.E.R.T. (State Emergency Response Team)

The SERT representative is responsible for over all coordination of state and federal response resources and obtaining such resources from appropriate state and / or federal agencies and will:

- (1) Forward requests for assistance and / or resources to the appropriate state agencies.
- (2) Keep local officials briefed on the activities of the state.
- (3) Carry out other duties assigned by the state.

2. Operations

a. Operations Director / Manager

The Operations Director controls the activity of those agencies making a direct response in the containment and reduction of the emergency and will:

- (1) Be the recipient of all incoming information concerning the emergency situation.
- (2) Have available the most current status of resources (i.e., manpower, equipment and supplies), in and out of government.
- (3) Establish a priority of effort based on the two preceding items of information.
- (4) Be supported within the EOC by the Administrative Department of county government which will:
 - (a) Maintain a complete record of activities in chronological order.
 - (b) Provide personnel for secretarial and clerical activities as needed within the EOC.
 - (c) Provide personnel for posting the operational status and activities on EOC display boards, charts, maps, etc.

- b. Law Enforcement
The County Sheriff or their representative heads the Law Enforcement Group. The Sheriff is supported as needed by the Municipal Police Departments and the North Carolina Highway Patrol. In addition to normal law enforcement activities, the Sheriff is charged in Emergency Operations with providing assistance in warning and evacuation, EOC Security, escorts for school buses, traffic control, and security for evacuated areas.
- c. Fire Service / Fire Marshal
Fire Service within the County is represented in the EOC by the Cumberland County Fire Marshal and (as necessary) the Chiefs of various District Fire Departments, as appropriate. Additional duties assigned to the Fire Service are many and varied. These duties are contained in current plans, particularly those involving hazardous material incidents / emergencies including radioactive material.
- d. Public Works
Public Works for the County will be made up of the personnel and equipment from the County Maintenance Department as well as Goldsboro Public Works. It will be under the direction and control of the County Public Works Director. This group will provide such emergency service as debris clearance, soil removal, refuse collection and other similar services as needed for the safety and protection of the population.
- e. Social Services
In addition to the services provided by these organizations on a routine basis, they are tasked in emergencies with support operations of Congregate Care Centers if required. Facilities (schools) to be used as Congregate Care Centers are identified in appropriate plans. Supporting Congregate Care includes the entire spectrum of mass care from registering through feeding, bedding, physical hygiene, care of sick, aged, infirm and children, to returning the facility to its pre-shelter condition. The Health Department and Social Services are responsible for coordinating Congregate Care to the Special Needs population.
- f. Emergency Medical Service and Rescue
The Director of Emergency Medical Services represents the Emergency Medical Service in the EOC. Resources for the service are those of the Health Department, and the Emergency Medical Service. In addition to services, which would be required of this group in emergencies, they will support the medical and health requirements of Congregate Care.
- g. Communications and Warning
 - (1) Communications within the County are under the operational control of the Office of Emergency Communications Operations and Management. All emergency service agencies utilized within the County are terminated in the center station located at the EOC. Additional communications, which could be placed in service, are identified in the Resource Manual or Resource Database.
 - (2) Warning within the County is provided by EAS with Cable Television interrupt on all channels and is supplemented by public address systems mounted in emergency service vehicles. Warning is an assigned responsibility of the County Warning Point (EOC) and supplemented by the various emergency service agencies. The direction and control of the warning system is by the Emergency Management Coordinator.

h. Public Health

The Health Director represents public health in the EOC. He / she is supported, as needed by members of their staff as required, based upon the nature of the incident. In addition to normal duties, the Health Director will be responsible for directing their staff to assist in issues dealing with public health concerns with a specific focus on radiation contamination. The Health Director will also address specific issues concerning food products, sanitation and population exposure to diseases that may manifest themselves in times of disaster.

i. School System

The Superintendent and / or their respective appointed representative who has the authority to act on behalf of the schools represent the Cumberland County Schools in the EOC. The primary function of this person is to coordinate school related issues such as student evacuations, transportation and the use of school facilities as shelters by the American Red Cross. This person works closely with Red Cross and the Department of Social Services to ensure facilities are adequate and that the needs of both the public and the schools are met in times of disaster. This person serves as the primary liaison between the County and the School system.

j. Mental Health

Mental Health is represented in the EOC as required or requested by the EOC staff and / or the Emergency Management Director. Mental Health will be represented by the local director or the chief of a mental health agency should a public agency not be available. The primary function of this person will be to provide assistance in the way of personnel to shelters when it is determined that mental health personnel are needed. They will support the Health Department, Social Services and the Red Cross. The mental health position is also responsible for arranging and coordinating CISD (critical incident stress debriefing) teams for emergency services personnel.

k. Cooperative Extension

Agriculture is represented by the Cooperative Extension Service Director and is responsible for all issues concerning agriculture including assessing crop, livestock and their product damages that may result from the loss suffered in a disaster. This person will keep the EOC advised regarding agriculture losses or the potential of such losses. This person is also responsible for the coordination of the removal of dead farm animals and / or the decontamination of such animals. This person will be responsible for issuing proper authority to farmers to reenter stricken areas in coordination with the Sheriff and / or appropriate law enforcement agency. Also this person coordinates assistance to the public by means of public information concerning the consumption of food products or the preparation of same. This activity is conducted in a coordinated manner with the Health Department and the Public Information Officer.

l. Damage Assessment

Damage Assessment is represented by the Tax Supervisor and is responsible for the coordination of all damage assessment teams. He/she is also responsible to ensure that the teams are equipped and dispatched to the appropriate areas to conduct damage surveys. Collections of these surveys and compiling the information for accurate reporting to the Emergency Management Director. Additional duties are found in the plan SOG dealing with damage assessment.

3. *Technical / Plans / Special Services*

a. Hazardous Materials Safety Coordinator

The HMSC has been appointed and will serve as the Hazardous Materials Safety Section Chief. They are responsible for the receipt evaluation and reporting of hazardous materials data. The HMC is also responsible for working with the Health Director in making recommendations for Emergency Workers. The head of Environmental Health Division of the Cumberland County Health Department shall assist the HMC.

b. Damage Assessment

The Damage Assessment Section will be manned by the Emergency Management Director who will serve as the Director of Damage Assessment supported by members of the Tax Department, Cooperative Extension Service, and the Inspections Department. Rapid and accurate means of developing this information is essential as it forms the basis for requesting assistance at the State and National level. American Red Cross will provide assistance, if appropriate or requested, and / or local fire service personnel. Additional functions may be found in the plan SOG, Damage Assessment.

c. Animal Control

The Director of Animal Control and / or their appointed representative will man the Animal Control Section. Animal Control will coordinate all issues dealing with domestic companion animals and assist Cooperative Extension as much as possible with livestock issues. These include issues of companion animals at shelters. The Animal Control Section may draw upon whatever resources are necessary and available to assist them.

d. Other Technical Support Services

Other technical support services may be necessary such as representatives of utilities, chemical manufactures, radiation specialists, or other specialists. These persons serve as technical advisors and liaisons within the scope of their expertise.

4. *Logistics*

An appointed assistant to the Emergency Management Director heads the Logistics Group. This group is responsible for maintaining a display within the EOC of the current status of available government resources. Additionally, they must be knowledgeable of those resources available within the County but not under government control. This information will be assembled and frequently updated in a resource manual by the Department of Emergency Management. The Logistics group may be established to coordinate the acquisition of supplies, equipment and other resources (public and private) necessary and approved to resolve / recover from the emergency or disaster situation. Logistics also is responsible for mass care and feeding and shelter operations.

a. Communications

Responsible for operation of two-way radio equipment as required, as well as computers and other communications support equipment.

b. Red Cross

In addition to the services provided by these organizations on a routine basis, they are tasked in emergencies with operations of Congregate Care Centers (shelters) if required. Facilities (schools) to be used as Congregate Care Centers (shelters) are identified in appropriate plans. Congregate Care includes the entire spectrum of mass care from registering through feeding, bedding, and physical hygiene, to returning the facility to its pre-shelter condition. The Health Department and Social Services are responsible for coordinating Congregate Care to the Special Needs population.

c. A.R.E.S.

A.R.E.S. or the Amateur Radio Emergency Service is represented by a volunteer, licensed Amateur radio operator and part of the amateur radio emergency service network. A liaison is assigned by Cumberland ARES to the EOC. This liaison is responsible for all ARES operations and staffing regardless of the location of ARES operators. The primary function is to perform back up communications via radio with shelters and messaging from the EOC to outlying emergency operations and serve as the link between shelter operations and the Red Cross liaison at the EOC. This person also ensures that all amateur radio equipment used is functional and within the standards of the service and that all amateur radio personnel are licensed and members of ARES. ARES is also responsible for updating weather information in a timely manner, using whatever tools are available and maintaining contact with NWS and keeping the EOC advised accordingly.

5. *Finance*

This group is under the direction of the County Finance Officer. This group may be established to:

- a. Compile and maintain documentation of purchases, acquisition and utilization of emergency supplies, equipment and other services;
- b. Perform financial and cost analysis to develop conclusions on efficient methods of resolving and recovering from the emergency / disaster situation.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

EVACUATION / REENTRY

Primary Agency: Sheriff's Office

Support Agencies: Emergency Services Department
Fayetteville Police Department
Hope Mills Police Department
Spring Lake Police Department
NC Highway Patrol

I. PURPOSE

This section provides for a coordinated evacuation and reentry of the county population if necessary during emergencies.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. A hazard analysis and a vulnerability assessment have been completed identifying the types of threats and the areas and population in the county that are most vulnerable to these threats.
2. A demographic analysis has identified the facilities and populations within the county that pose special evacuation problems.
3. There are several highway routes allowing evacuation from various parts of the county. These include: I-95, US 13, US 301, US 401, NC 24, NC 53, NC 87 and NC 210.
4. An evacuation will require substantial physical resources for transportation, communication and traffic control. Available public and private resources have been identified.

B. Assumptions

1. Emergency situations may require evacuation of all or part of the county. Small-scale, localized evacuations may be needed as a result of a hazardous materials incident, major fire, or other incidents. Large-scale evacuation may be needed in the event an impending hurricane strikes the coastline on a path towards Cumberland County.
2. Sufficient warning time will normally be available to evacuate the threatened population.
3. Traffic control resources must be in place prior to the public release of an evacuation order.
4. Evacuation and reentry information will be made available to the public by all available means.

5. Effective evacuation will be completed during daylight hours whenever possible.
6. A delayed evacuation order will endanger lives and result in civil disorder.
7. If there is significant potential threat, some residents will evacuate prior to being advised to do so by public officials.
8. Most evacuees will seek shelter with relatives or friends rather than accept public shelter.
9. Some residents may refuse to evacuate regardless of warnings.
10. Some people will lack transportation. Others who are ill or disabled may require vehicles with special transportation capabilities.
11. Debris or damage to the roadway may hamper reentry.
12. Evacuation from Cumberland County will have an impact on adjacent counties.
13. Stranded motorists will present significant problems during an evacuation situation.

III. CONCEPT OF OPERATIONS

A. The Line of Succession for Evacuation / Reentry is as shown below:

1. Sheriff
2. Chief Deputy
3. Emergency Services Director
4. Operations Commander

B. General

1. The ultimate responsibility for ordering a countywide evacuation or reentry rests with the Policy / Administration Group. If the evacuation or reentry involves more than one jurisdiction, or an area outside of a municipality, the Chairman of the Policy/Administration Group, or his / her designated representative will issue the order on a county level. If a municipality is evacuated, the mayor will issue the order.
2. Public information concerning the Policy / Administration Group's evacuation or reentry orders will be released through all available media.
3. Regional coordination of traffic control, shelter / mass care and public information will enhance the total evacuation and reentry process. The State Division of Emergency Management Eastern Branch Office will coordinate regional evacuation activities.
4. Law Enforcement will implement traffic control for evacuation and for reentry.

C. Specific

1. Movement Control and Guidance

- a. Traffic control points to support a countywide evacuation have been pre-determined by law enforcement personnel.
- b. The size of the threatened area to be evacuated will be determined by conditions at the time of the emergency.

2. Staging Areas and Pick-up Points and Routes

- a. Identified stranded motorists will be assisted by law enforcement officers in reaching a pre-determined rally point for mass transportation to a location for best available shelter. The Operations Officer will determine the location of the best available shelter.
- b. The county has determined pre-designated staging areas as mobilization points to organize the emergency response personnel and equipment entering from areas outside the county.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

FIRE / RESCUE

Primary Agency: Cumberland County Fire Marshal

Support Agencies: Eastover Fire Department
Vander Fire Department
Pearce's Mill Fire Department
Cotton Fire Department
Cumberland Road Fire Department
Cedar Creek Fire Department
Westarea Fire Department
Bethany Fire Department
Stoney Point Fire Department Station #13 & #19
Carvers Creek Fire Department
Wade Community Fire Department
Godwin-Falcon Fire Department
Gray's Creek Fire Department #18
Linden Fire Department
Hope Mills Fire Department
Spring Lake Fire Department
Stedman Fire Department
Gray's Creek Fire Department #24
Beaver Dam Fire Department
Fayetteville Fire Department

I. PURPOSE

This section provides for the coordination of fire, rescue and emergency medical activities to ensure the safety of life and property within Cumberland County during emergency situations.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. Cumberland County is served by twenty-one fire departments with thirty-three stations.
2. The Cumberland County Fire Marshal acts as the county's liaison to the various non-municipal fire departments.
3. The N.C. Division of Forest Resources is the lead agency for forest fire control in Cumberland County. Cumberland County is in the Division's Fayetteville District.
4. All fire departments rely on 9-1-1 communications systems for primary dispatching and communications.
5. There is a hazardous materials response team located in the City of Fayetteville. This team provides services to all of Cumberland County.

6. A State Hazardous Materials Regional Response Team (RRT) is manned and operated by the City of Fayetteville Fire Department. The Team responds to incidents in 18 counties and is requested through the Emergency Services Director or Fire Chief to the Eastern Branch to the State Operations Section.
 7. Mutual aid agreements exist among fire departments within Cumberland County, Pope Air Force Base and Fort Bragg. Some agreements exist with departments in neighboring counties
 8. Most fire departments operate First Responder units.
- B. Assumptions
1. Existing fire and rescue personnel and equipment can cope with most emergency situations. Mutual aid agreements will offset any additional requirements for assistance.
 2. When necessary, additional or specialized support can be obtained from state and federal agencies.
 3. Fire departments will be called upon to assist with rescue and extrication of trapped persons, as well as search, debris removal on primary roadways, evacuations, reconnaissance, traffic control and security.
 4. People seeking basic necessities and information may congregate at fire stations following a catastrophic disaster.

III. CONCEPT OF OPERATIONS

- A. The Line of Succession for Fire / Rescue is as shown below:
1. Fire Marshal
 2. Assistant Fire Marshal
 3. Fire Chief of affected District
- B. During emergencies, fire and rescue services must be prepared to support each other utilizing available expertise, equipment and manpower.
- C. The National Fire Academy's Incident Command will be implemented on an appropriate scale at the scene of every fire / rescue event in Cumberland County.
- D. If fire or threat of fire is involved, the fire chief of the district or his designated representative is the incident commander.
- E. If no fire or threat of fire exists, the incident commander will be determined by prior mutual consent of the chiefs of all emergency services.
- F. Under the North Carolina Hazardous Materials Right-to-Know Law and the Federal Emergency Planning and Community Right-to-Know (EPCRA), the Fire Chief is responsible for surveying facilities within his jurisdiction to identify types and volume of hazardous materials located within the County. This information will be considered when developing response plans for hazardous materials accidents within his district. Coordination of facility emergency response plans with the Cumberland County Emergency Operations Plan will be included in fire service planning.

- G. Fire Stations will become a community focal point and source of public information when normal communications are disrupted by disaster.
- H. During the critical phases of an emergency / disaster, fire stations will be opened and continuously manned, as conditions permit. All fire fighters will report to the station for duty. Communications will be established with the Emergency Communications Center and EOC.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

HAZARDOUS MATERIALS

Primary Agency: Fayetteville Fire Department Hazardous Materials Team

Support Agencies: Cumberland Emergency Services
Fayetteville Fire / Emergency Management
SARA Facilities
County Fire Departments
Cumberland County Local Emergency Planning Committee

I. PURPOSE

This section provides information for a response to hazardous material emergencies, and assists the Local Emergency Planning Committee in meeting its requirements under the Emergency Planning / Community Right to Know Act - SARA Title III.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. The threat of a major disaster involving hazardous materials has escalated due to the increase in everyday use and transportation of chemicals by the various segments of our population.
2. Approximately 300 facilities file Tier II reports annually with the LEPC.
3. The primary hazardous materials transportation routes are: I-95, US-301, NC 24, NC 53, NC 87 and many miles of rail throughout the county.
4. SARA Title III, the Community Right-to-Know, requires the reporting of Tier II information by facilities to the State Emergency Response Commission (SERC), the Local Emergency Planning Committee (LEPC) and local fire departments. This information is also reported to the Fayetteville Hazardous Material Response Team.
5. Some facilities are placarded with NFPA approved placards showing worst case scenario for emergency responders.
6. The LEPC does not currently charge a fee for filing Tier II reports, but this remains an option for future funding.
7. Material Safety Data Sheets (MSDS) are maintained at the facility, local fire department and the Emergency Services.
8. Some facilities have filed contingency plans with the LEPC. The plans are maintained in the Emergency Services Office.
9. Hazardous materials emergencies could occur from any one of several sources including shipping, roadway and rail transportation, aircraft accidents or fixed facility accident.

10. Evacuation or sheltering in place may be required to protect portions of the population of Cumberland County.
11. The City of Fayetteville Fire Department Hazardous Materials Response Team (HMRT) is available to respond to all hazardous materials incidents within Cumberland County. The HMRT Standard Operating Procedures (SOP) is in APPENDIXES, CITY OF FAYETTEVILLE FIRE DEPARTMENT SOP.
12. The release of hazardous materials may have short and / or long term health, environmental and economic effects depending upon the chemical composition of the substance.
13. The local jurisdiction must respond to the incident in the initial phase without assistance from outside the jurisdiction. This includes notification and warning of the public, evacuation or sheltering in place, immediate first aid and isolation of the scene.

B. Assumptions

1. Planning and training prior to an incident will significantly reduce the risk to personnel.
2. A facility involved in a hazardous material incident will provide all information required by SARA, Title III, Section 304 on a timely basis.
3. Emergency response personnel are knowledgeable in the use of available resources.
4. The North American Emergency Response Guidebook, alone or in combination with other information sources, is used as a guide for initial protective action at incidents involving hazardous materials.
5. A hazardous material accident could involve hundreds of people within a jurisdiction without any warning.
6. Plans will presume that most, but not all people affected by a hazardous material accident will follow instructions and shelter in place or relocate to the designated reception areas.
7. Public notification and warning, and evacuation, if required, will be in accordance with the evacuation policies and procedures contained in Section G, Evacuation and Entry.
8. That all movement, storage, and use of hazardous materials is in compliance with Title III, or the N.C. Right-To-Know Act.
9. Response time for resources requested from outside the county will require more than two hours.
10. Incidents in which the military can be identified as the responsible party will generally be resolved by Federal resources.

12. Hazardous materials incidents that occur in which the responsible party cannot be identified will be resolved at the expense of the jurisdiction in which the event occurred.

III. CONCEPT OF OPERATIONS

- A. The Line of Succession for Hazardous Materials is as shown below:
 1. Hazardous Materials Response Team Captain
 2. Fayetteville Fire Department Battalion Commander
 3. Fayetteville Fire Department Assistant Chief of Operations
- B. There are several types of incidents involving hazardous materials: (1) incidents at fixed facilities, (2) shipping incidents, (3) roadway or rail transportation accidents, and (4) unknown materials on the river shore, railroad, or roadway.
- C. The Cumberland Emergency Operations Plan will serve as the official LEPC Plan for response to hazardous materials events / emergencies.
- D. Depending upon the threat posed by the incident, protective measures initiated for the safety of the public could include in place sheltering, evacuation, and / or isolation of the contaminated environment.
- E. The level of response required for an incident is determined by:
 1. The quantity, quality and the toxic effects of the material involved in the release;
 2. The population and / or property threatened;
 3. The type and availability of protective equipment required for the released material, and;
 4. The probable consequences should no immediate action be taken.
- F. There are three levels of response for a hazardous material incident:
 1. Level I (Potential Emergency Condition): An incident which can be controlled by the first responder agencies, does not require evacuation of other than the involved structure or immediate outdoor area, and does not indicate major environmental damage will occur.
 2. Level II (Limited Emergency Condition): An incident involving a greater hazard or larger area which poses a potential threat to life or property and which may require a limited evacuation of the surrounding area, or indicates that major environmental damage could occur. The jurisdiction's personnel and resources can adequately handle initial response to the incident.
 3. Level III (Full Emergency Condition): An incident involving a severe hazard or larger area which poses a potential threat to life or property and will probably require a large scale evacuation; or an incident requiring the combined expertise or resources of County, State, Federal and / or Private Agencies / Organizations.
- G. This plan recognizes that a hazardous materials incident can change with time, and necessitate escalating the response, or downgrading the response as the situation dictates.

- H. Warning and notification of the public, including warning and notification of special populations such as the handicapped, will be accomplished in accordance with the Communications / Notification / Warning section. Where procedures for public warning have been developed for populations in institutions in hazard zones surrounding identifying fixed facilities, those procedures will be followed. When necessary, emergency vehicles with sirens or public address systems will be used as a public alerting system. If a fixed notification system is in place around the facility, the vehicles will be dispatched within the evacuation area and will stop at each quarter mile in the populated areas and at each house or group of houses that are not more than 1/4 mile apart. Emergency vehicles will notify the public of the situation and / or recommend protective action.
- I. To ensure receipt of the initial warning by all members of the community, each route should be run twice, if possible. The second run will be to confirm alert and notification. Back runs need only stop at houses that are dark at night or where it is apparent that people are not complying with instructions. If necessary, door-to-door alerting will be accomplished.
- J. The State Regional Response Team will be coordinated through the Eastern Branch Office of NC Emergency Management to the State Division of Emergency Management. Response procedures for each incident will be according to local policies and procedures in compliance with worker safety standards.
- K. Coordination between jurisdictions will be achieved through regional coordination with the Eastern Branch Office or through direct contact with towns and other counties.
- L. Training programs for emergency responders in the county will be through individual agency in-service training, community college courses and other offerings of related training. Exercise schedules for this plan are developed and maintained by the Emergency Services Office.
- M. A Local Emergency Planning Committee (LEPC) has been established at the jurisdiction level to identify the magnitude of a local hazard, assess the vulnerability of the community to that hazard, and provide planning guidance for emergency response. SARA, Title III, and Section 302 will identify a point of contact, The Facility Coordinator, at each covered facility as defined.
- N. Current SARA Title III information is on file in the Cumberland Emergency Services.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

INITIAL IMPACT / DAMAGE ASSESSMENT

Primary Agency: Cumberland County Tax Office

Support Agencies: Cumberland County Emergency Services
Cumberland County Building Inspector
Cumberland County Finance Officer
Cumberland County Fire Departments
Cumberland County Sheriff's Office

I. PURPOSE

This section presents a system to coordinate damage assessment and reporting functions for those hazards listed in the county's hazard analysis. It also provides procedures to estimate the nature and extent of the damage, and provide disaster recovery assistance.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. Most hazardous events, which may affect Cumberland County, have the potential for causing damage. A planned damage assessment program is essential for effective response and recovery operations.
2. If a significant emergency / disaster occurs, a series of damage assessment activities will be required in the following order:
 - a. The County Immediate Situation Report results in notification to the State EOC, information on the severity of the problems and the determination of need for further assistance.
 - b. The State supported Impact Assessment results in the identification of immediate life support needs.
 - c. Federal / State supported Damage Assessment precedes the delivery of a Presidential Disaster Declaration and defines the specific needs for long term recovery.
3. Following a significant disaster/emergency occurrence, a multitude of independent damage assessment activities will be conducted by a variety of organizations including county damage assessment teams, American Red Cross, insurance companies, utility companies, Federal Agencies, etc.
4. Recovery from a significant disaster will be managed in two identifiable phrases as follows:
 - a. Phase One is the emergency reaction phase and the implementation of emergency plans. Actions under this phase include emergency security, debris removal, mass care, and restoration of essential services. The County Emergency Management will assume the lead role in coordination of this phase.

- b. Phase Two is the long-term reconstruction phase. Actions under this phase include: rebuilding of damaged public buildings, rebuilding of roadways and bridges, rebuilding of private homes and private businesses, etc. The County Manager, the City Manager, the Finance Officer will assume the lead roles in this phase and others as needed.
 - 5. If the magnitude and severity of the emergency / disaster warrants, a Presidential Disaster Declaration could be requested. If approved, Government Assistance could be available to Cumberland County.
- B. Assumptions**
- 1. The county will continue to be exposed to various hazards resulting in damage to both public and private property.
 - 2. Damage will be assessed by pre-arranged teams of local resource personnel.
 - 3. Implementing damage assessment procedures will expedite relief and assistance for those adversely affected.
 - 4. A significant response of both solicited and unsolicited resources from outside the impacted area can be expected and preparations will be made in order to manage this assistance.
 - 5. Emergency public information is a critical tool in immediate post disaster response for informing the public about actions being taken, and for requesting help from outside the area of impact.
 - 6. Damage to utility systems and to the communications systems will hamper the recovery process.
 - 7. Routine government agency operations such as delivery of social programs, legal processes, elections and cultural events could be postponed as a result of the disaster.
 - 8. A major disaster could have a significant long-term economic impact on the county.
 - 9. A major disaster affecting the county could result in the severance of a main transportation artery resulting in a significant alteration of lifestyle in the county.

III. CONCEPT OF OPERATIONS

- A. The Line of Succession for Initial Impact / Damage Assessment is as shown below:
 - 1. County Tax Administrator
 - 2. County Tax Real Estate Division Manager
 - 3. County Tax Real Estate Supervisor
- B. General

Responsibility for Immediate Situation Reports / Phase One of recovery operations lies with local government.

C. Specific

1. Emergency and recovery operations will initially be coordinated from the County EOC. Each municipality affected will maintain a presence in the Cumberland County EOC, as needed.
2. Accurate emergency logs and expenditure records will be kept from the onset of the disaster by each response agency / organization.
3. The Damage Assessment Officer will coordinate the compilation of damage survey data, prepare damage assessment reports for the Emergency Services Director and plot damaged areas on local maps.
4. The Emergency Services Director will review, with other appropriate local officials, the damage assessment reports to determine if any outside assistance will be necessary to recover from the disaster.
5. The Emergency Services Director will forward damage assessment reports and any requests for assistance to the N.C. Division of Emergency Management, Eastern Branch Office by the quickest means available. By Executive Order, the Secretary, N.C. Department of Crime Control and Public Safety is authorized to commit any state resources to assist with the emergency / recovery efforts.
6. Based upon the local damage assessment reports, the State Emergency Response Team will determine what recovery capabilities are available to meet the anticipated requirements.
7. The Governor may request a Presidential Declaration of a "major disaster", "major emergency", or a specific federal agency disaster declaration (Small Business Administration, Department of Agriculture, Corps of Engineers, etc.) to augment state / local / private disaster relief efforts.
8. The President, under a "major emergency" declaration may authorize the utilization of any federal equipment, personnel and other resources.
9. The President, under a "major disaster" declaration may authorize two basic types of disaster relief assistance:
 - a. Individual Assistance (IA)
 - i. Temporary housing.
 - ii. Individual and family grants (IFG) [75% federal, 25% state/local funds].
 - iii. Disaster unemployment assistance.
 - iv. Disaster loans to individuals, businesses and farmers.
 - v. Agricultural assistance.
 - vi. Legal services to low-income families and individuals.
 - vii. Consumer counseling and assistance in obtaining insurance benefits.
 - viii. Social security assistance.
 - ix. Veteran's assistance.
 - x. Casualty loss tax assistance.

- b. Public Assistance (PA) [75% federal, 25% state / applicant funds]
 - I. Debris removal.
 - ii. Emergency protective measures.
 - iii. Permanent work to repair, restore or replace road systems, water facilities, public buildings and equipment, public utilities, public recreational facilities, etc.

- 10. In the event a major disaster or emergency is declared:
 - a. A Federal Coordinating Officer (FCO) will be appointed by the President to coordinate the federal efforts.
 - b. A State Coordinating Officer (SCO) and Governor's Authorized Representative (GAR) will be appointed by the Governor to coordinate the state efforts.
 - c. A Disaster Field Office (DFO) will be established within the state (central to the damaged areas) from which the disaster assistance programs will be administered.
 - d. For IA only, Disaster Recovery Centers (DRCs) will be established central to the affected areas where individuals may apply for assistance.
 - e. If the area is declared eligible for Public Assistance programs, an Applicant's Briefing will be conducted for officials of the county, cities and private nonprofit organizations to explain eligibility criteria. The Emergency Services Director will be requested to assist with identifying and notifying eligible applicants.
 - f. At the applicant's briefing, each eligible entity will submit a Notice of Interest (NOI).
 - g. Each PA applicant (including local government entities) will appoint an "Applicant's Agent" to coordinate the collection of documentation and submission of information to the DFO.
 - h. The Assistant Finance Director will serve as the Recovery Manager for public assistance.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

LAW ENFORCEMENT

Primary Agency: Sheriff's Office

Support Agencies: Fayetteville Police Department
Hope Mills Police Department
Spring Lake Police Department
Stedman Police Department
NC Highway Patrol

I. PURPOSE

This section provides for security, maintenance of law and order and traffic control.

II. SITUATION AND ASSUMPTIONS

B. Situation

1. Law enforcement in Cumberland County is provided by the Cumberland County Sheriff's Office and municipal police departments in Fayetteville, Spring Lake, Hope Mills and Stedman.
2. State law enforcement agencies that regularly operate within Cumberland County's borders are the N.C. Highway Patrol, N.C. Wildlife Commission, and State Bureau of Investigation and Division of Motor Vehicles (DMV). Federal law enforcement agencies who maintain offices in Cumberland County include the Federal Bureau of Investigation, Bureau of Alcohol, Tobacco and Firearms, the US Marshal Service and State and County Alcohol Law Enforcement (ALE).
3. A spirit of cooperation exists between the local, state and federal law enforcement agencies that operate within the county. Federal and state agencies cooperate with and support local law enforcement officers during emergency events.
4. When N.C. Highway Patrol personnel are requested to support Cumberland County traffic control, a Trooper from the N.C. Highway Patrol may be present in the EOC to coordinate N.C. Highway Patrol operations.
5. Pre-determined the N.C. Highway Patrol has identified traffic control points, Sheriff's Office and municipal police to facilitate management of traffic flow when evacuation is required.

C. Assumptions

1. Activities of local law enforcement agencies will increase significantly during emergency operations. If local capabilities are overwhelmed, support may be obtained from state and federal law enforcement agencies.

2. An evacuation from a large area of the county could significantly impact Cumberland County law enforcement / traffic control operations.
3. During evacuations, accidents or mechanical failures could significantly impede the evacuating traffic flow.
4. The number of law enforcement personnel available in the county during an emergency event will not be adequate to provide for security until supplemented.
5. Following an emergency event, it may be necessary to supplement local law enforcement personnel with officers from other jurisdictions to provide security and traffic control.

III. CONCEPT OF OPERATIONS

- A. The Line of Succession for County Law Enforcement is as shown below:
 1. Sheriff
 2. Chief Deputy
 3. Operations Commander
- B. Emergency law enforcement operations will interrupt routine functions and responsibilities. Expanded emergency responsibilities will include maintenance of law and order, traffic control, crowd control and security.
- C. The Cumberland County Sheriff's Office will be the coordinating agency for law enforcement operations in Cumberland County during multi-jurisdictional emergency events.
- D. Law enforcement officers in Cumberland County will assist with the dissemination of emergency information to isolated populations and to motorists.
- E. Law enforcement activities will remain under the control of the senior law enforcement officer for the jurisdiction in which the emergency operation is taking place.
- F. Law enforcement agencies will have primary responsibility for traffic control and security in and near an evacuated area and in other areas of emergency operations.
- G. Law enforcement officers in the field will observe and report emergency activity to the EOC.
- H. Law enforcement officers will enforce the provisions outlined in the Proclamation of a State of Emergency.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

MASS CARE - SHELTER / FEEDING

Primary Agency:	American Red Cross Department of Social Services Cumberland Emergency Services
Support Agencies:	Cumberland County Health Department Cumberland County Mental Health Department Cumberland County School System Cumberland County Sheriff's Office City of Fayetteville Parks & Recreation Department Fayetteville Police Department Cape Fear Amateur Radio Society

I. PURPOSE

This section provides for the protection and care of the population from the effects of hazards through the identification of shelters and provision of mass care and social service in shelters.

II. SCOPE

Mass Care encompasses the following activities:

- A. Mass Shelter - The provision of emergency shelter for disaster victims includes the use of pre-identified shelter sites in existing structures and creation of temporary facilities.
- B. Mass Feeding - The provision for feeding disaster victims and emergency workers through a combination of fixed sites, mobile feeding units and bulk food distribution.
- C. Emergency First Aid - Emergency first aid services will be provided to disaster victims and workers at mass care facilities and other designated areas. This emergency first aid will be supplemental to emergency health and medical services established to meet the needs of disaster victims.
- D. Disaster Welfare Information (DWI) - DWI regarding individuals within the affected area will be collected and provided to immediate family members outside the affected area. DWI will also be provided to assist in the reunification of family members within the affected area who were separated at the time of the disaster.

III. SITUATION AND ASSUMPTIONS

- A. Situation
 - 1. Based on the county's hazard analysis, there are several emergency and disaster scenarios that may require a mass care response, including severe storms, tornadoes, floods, HazMat incidents, fires and hurricanes.

2. All Cumberland County Schools are identified as potential shelter sites. Eight primary and secondary locations have been designated as the facilities that will be utilized as shelters. The shelter location will be determined by the scope of the emergency and the impact area. The information will be provided to the public in a timely manner through media channels. Other structures such as church fellowship halls, recreation centers and some private meeting facilities may be utilized as temporary shelters until all shelterees can be consolidated into fully staffed official shelters or if the situation extends beyond the county's capabilities.
3. Sheltering of Cumberland County residents being evacuated out of the county will be coordinated through the Eastern Branch Office of Emergency Management.
4. A written agreement exists between the American Red Cross, County Department of Social Services, the Emergency Services Department and Board of Education for the coordination of shelter and mass care activities.
5. While state law identifies the Department of Social Services and the Health Department as the agencies legally responsible for insuring that county residents are sheltered and fed in an emergency, the responsibility for coordinating and conducting mass care operations for the general public has been delegated to and accepted by the American Red Cross. The operation of shelters for special needs populations shall remain the responsibility of the Department of Social Services and the County Health Department. The guidelines are established under the Department of Social Services Special Needs Shelter information.

B. Assumptions

1. There is sufficient in county sheltering to meet the needs of an evacuation during an emergency or disaster.
2. Local grocery stores, restaurants and other businesses may support the initial shelter / feeding operations by donating emergency supplies.
3. For an out-of-county evacuation, sufficient shelter capacity exists in adjacent counties and shelter locations can be arranged and made available.
4. A high percentage of evacuees will seek shelter with family or friends, or in commercial facilities rather than go to a public mass shelter.
5. Evacuees will be provided with public information in the shelter concerning the emergency.
6. Following a major disaster there will be an abundance of unsolicited goods delivered to the disaster area by well-intended citizens outside the impacted area.

IV. CONCEPT OF OPERATIONS

- A. The decision to open and close mass care shelters, and the choice of specific shelter locations, will be made jointly by the County Policy / Administration Group.

- B. Public and private institutional care providers will continue to be responsible for the care of the evacuees from their respective facilities while in any shelter. The care provider will be responsible for having evacuation, transportation and sheltering plans in place for their populations.
- C. Cumberland County, the American Red Cross and other agencies involved in official mass care activities will assume no responsibility or liability for unauthorized mass care activities during emergency events.
- D. All shelters, including special needs shelters, will provide statistical, registration and other necessary information on a daily basis.
- E. Families separated will be provided information on location of other family members. To the extent possible, the American Red Cross, the Department of Social Services, the Health Department and the City of Fayetteville Parks and Recreation Department will provide mutual assistance and support with shelter management and nursing human resources. The American Red Cross will make available the training required to provide mass care in official shelters.
- F. At each official county shelter, the county will provide communications and security, to the extent possible. At each official shelter in municipalities, the City will provide communications and security.
- G. Crisis intervention and mental health counseling, coordinated by Cumberland County Mental Health Department, will be made available at shelters and at the disaster scene for both victims and emergency workers. The American Red Cross, in conjunction with the Mental Health Department, will provide Disaster Mental Health training to volunteers to enable them to assist in official shelters.
- H. The direct cost of opening and operating official Red Cross mass care shelters will be borne by the American Red Cross.
 - 1. The following specific exceptions have been identified to include: No facilities fee will be charged. No reimbursement will be required for those paid staff responding as a part of their employing agencies' official participation in the county emergency operations plan.
 - 2. The American Red Cross will assume responsibility for damage to a facility as a direct result of mass care activities, provided that a pre- and post-shelter inspection have been accomplished to the mutual satisfaction of representatives of the facility and the ARC.
 - 3. The American Red Cross will assume responsibility for the reimbursement or replacement of supplies belonging to the shelter facility that are consumed in the course of the mass care operation.
- I. The direct cost of opening and operating official special needs shelters will be borne by the county. The Special Needs Shelter will be under the direction of the Department of Social Services.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

MASS FATALITIES

Primary Agency: Cumberland County Health Department

Support Agencies: Cumberland County Medical Examiner
Cumberland County Emergency Medical Services of Cape Fear
Valley Health Systems
Highsmith-Rainey Memorial Hospital
VA Medical Center
Womack Army Medical Center
Funeral Homes
Fire Departments

I. PURPOSE

This section outlines the procedures to be followed when a disaster results in mass fatalities to the extent that the number of dead exceeds the resources of the local medical examiner's office.

II. ORGANIZATION

By law, the County Medical Examiner is responsible for the dead. The mass fatalities team and other local funeral service personnel, when activated, will be available to assist under the direction of the County Medical Examiner.

III. SITUATIONS AND ASSUMPTIONS

Any major disaster could result in extensive property damage and possibly a large number of deaths, which may require extraordinary procedures.

IV. CONCEPT OF OPERATIONS

- A. The Line of Succession for Mass Fatalities is as shown below:
1. Health Director
 2. Medical Director
 3. Emergency Medical Services Director
- B. The mass fatalities team focus is to establish the means and methods for the sensitive respectful care and handling of human remains in multi-death disaster situations. The team will be available to aid in the necessary acts of evacuation, identification (sanitation and preservation such as preparation or embalming as authorized), notification of the next of kin, counseling and facilitating the release of identified remains to the next of kin or their representative under the direction of authorized persons.
- C. When disaster conditions permit, and an estimate can be made of the dead, temporary morgue sites will be selected and activated. Remains will be recovered

and evacuated to the temporary morgues for identification purposes and safeguarding of personal effects found on the dead. Necessary information about each victim will be compiled and processed for the medical examiner. When authorized by officials and the family, the mass fatalities team shall prepare, process and release the remains for final disposition.

- D. As an assist group to the medical examiner, the local funeral directors will provide needed supplies, equipment, vehicles and personnel as available. The State Funeral Director's Association may also assist in identifying other necessary resources.
- E. Only when registered burial sites are exhausted, losses are massive, or as a last resort, should interment be in burial areas selected by local, county and / or state officials.

V. DIRECTION AND CONTROL

- A. Operations will be coordinated by the medical examiner working with the Emergency Services Director, and where designated, the mortuary response team's coordinator.
- B. When a disaster occurs, the county medical examiner should immediately contact the State Funeral Directors Association through its offices or through staff members. They, in turn, will notify the appropriate members of the mortuary response team.

VI. TEMPORARY MORGUE SITE

- A. A morgue site is to be selected, organized and put into operation if the number of dead exceeds the local resources. Once a morgue site has been selected, the medical examiner or the designated mortuary response team coordinator will organize its operations and assign personnel to some or all of the following jobs: uniformed guards, information clerks, counselors, interviewers, telephone communicators, admissions clerk, general supervisor, identification personnel, orderlies, personal effects custodian, embalming supervisor, embalmers, secretaries, inventory clerk, distribution clerk, etc.
- B. The temporary morgue should be located as near as possible to areas with heavy death toll and should have: showers, hot and cold water, heat or air conditioning (depending on climate), electricity, drainage, ventilation, restrooms, parking areas, communication capabilities and rest areas. It should be fenced or locked for security of remains and personal property, it should be removed from public view and have sufficient space for body identification procedures. It should also be subject to partitioning for separation of functions such as body handling, x-ray, autopsy, records maintenance, interviewing, etc. The functions carried out at each morgue site will be determined by the circumstances.

VII. MASS BURIAL GUIDELINES

- A. Mass burial may become necessary when the number of remains cannot be managed and becomes a public health concern, or when remains cannot be adequately refrigerated or embalmed, identified or processed in an acceptable manner.
- B. Any decision to begin mass burial must be made at the highest levels of state government. Their direction will be essential before such an effort can be initiated for the public health, safety and welfare.

- C. The location of any mass burial site must also be agreed upon by the above agencies, taking into consideration the number of remains to be buried, distance and transportation considerations. Plans should include the probability of exhumation at a later time.

VIII. CREMATIONS

Cremations should not take place for a minimum of seven (7) days after the last body has been processed. Cremation should never be used as a form of disposition for unidentified remains or tissue. Religious considerations as well as the possibility of future identification affect this decision.

IX. REMAINS NOT RECOVERED

Conditions and circumstances sometimes preclude the recovery of remains in spite of exhaustive efforts and resources expended by those involved. Once the determination has been made that one or more remains are unrecoverable, non-denominational memorial services should be arranged. If more than one, all efforts should be made to notify and include the surviving family members in this service. Assistance in post-death activities should be extended to the surviving family members. The family should be given the opportunity to select the locale of the non-denominational service if so desired.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

MITIGATION

Primary Agency: County Manager

Support Agencies: Cumberland County Emergency Services
Cumberland County Public Health
Cumberland County Planning and Inspections

I. PURPOSE

This annex outlines the mitigation procedures that Cumberland County engages through its various departments in an effort to protect its citizens from the effects of natural and made disasters.

II. SITUATION AND ASSUMPTION

A. Situation

1. Day to day mitigation efforts are performed by the various departments and divisions of Cumberland County government in accordance with County ordinances, State Code, as well as through state and federal laws and regulations.
2. The County is susceptible to many hazards, which have the potential to cause disasters and / or major damage to both citizens and / or property.
3. In response to these hazards, Cumberland County engages in daily efforts to mitigate the effects of such hazards through regulation and enforcement in the interest of public safety and health and well being of its citizens.

B. Assumption

Current mitigation programs enforced by the County through its various departments play a significant role during a local emergency and / or disasters in the protection of its citizens from hazards wrought by both natural and technological hazards.

III. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

A. General

1. *Planning & Inspections Department*
 - Subdivision Ordinance
 - Erosion Control Ordinance
 - Federal Flood Insurance Program
 - Building Code Enforcement
 - Watershed Protection Ordinance

2. *Environmental Health*
 - Sanitation
 - Water and Septic Tank
 - Solid Waste Ordinance
 - Hazardous Waste Management
3. *Fire Marshal / Emergency Management*
 - Civil Emergencies
 - State Fire Code
 - Hazardous Materials Ordinance
 - Blasting
4. *Sheriff's Department*
 - Civil Disorder
 - Terrorism
 - Mass Gatherings

B. Concept of Operations

1. On-going evaluation and assessment of the programs and program needs will be conducted by all agencies to increase awareness of potential hazards and the necessary responses that may be made on behalf of the County to further enhance mitigation efforts.
2. Following an emergency / disaster an evaluation of the County's mitigation programs and their effectiveness should be made relative to the impact of the damages incurred to the citizens of the County.
3. Identified areas in which hazards mitigation could be improved, so as to lessen the impact of a future disaster, shall be recommended by the County department head in the form of a written synopsis and forwarded to the County Manager.
4. Hazard assessment relative to mitigation functions is necessary and vital as a federally declared disaster occurring in any portion of the state makes all counties eligible to apply for hazard mitigation grants.

IV. ADMINISTRATION AND LOGISTICS

The post disaster review is to be performed for the purpose of identification of needed mitigation staging for Cumberland County. Recommendations for such review should be made in the following succession:

- Department Heads to County Manager

V. VULNERABILITY ASSESSMENT

Cumberland County is vulnerable to the broad range of threats to include, but not limited to, the following:

- Flooding

- Winter / Ice Storm
- Tornadoes / Severe Thunderstorms
- Earthquakes
- Dam Failure
- Civil Disorder / Terrorism
- Hurricanes
- Hazardous Materials Incidents

As such, mitigation of these threats, which would lessen their effect on the citizens and their property in Cumberland County, will be of primary concern and purpose of this annex.

VI. PLAN DEVELOPMENT AND MAINTENANCE

The Office of Emergency Management will review and amend this annex on an annual basis.

VII. AUTHORITIES AND REFERENCES

- A. NCGS 166-A
- B. County Ordinances

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

PUBLIC HEALTH SERVICES

Primary Agency: Cumberland County Health Department

Support Agencies: Cumberland County Department of Social Services
Cumberland Emergency Services
Public Works Commission
Hope Mills Water and Sewage Department
Spring Lake Water and Sewage Department

I. PURPOSE

The purpose of this section is to provide for the public health and welfare of the population of Cumberland County during emergency / disaster.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. The Cumberland County Health Department's main office is located at 227 Fountainhead Lane, Fayetteville, N.C.
2. Social Services will maintain a current list of persons requiring special needs.
3. Home health care is provided by the private home health agencies. Agencies providing home health care services maintain a list of their clients with special needs. A list is maintained in the Emergency Services Office.
4. Rabies Control is a shared responsibility between the Animal Control Program, which reports to the Assistant County Manager, and the Health Department. The Vector Control programs are provided by the Cumberland County Health Department.
5. A significant portion of Cumberland County's population is dependent upon private wells, private sewage treatment systems and private septic systems. These systems are susceptible to problems when flooding occurs.
6. Municipalities that operate public water & sewer systems include Fayetteville Public Works Commission, Hope Mills Water and Sewage Department and Spring Lake Water and Sewage Department.
7. Private companies providing water include The Public Works Commission, Brookwood (Lagrange) Water Corp., Baywood Water Services, and Cypress Lakes Water Service.
8. The Cumberland County Health Department inspects on-site sewage disposal systems, both residential and small businesses in the county. The Department of Environmental Health and Natural Resources inspects package sewage treatment plants at large facilities within the county.

B. Assumptions

1. A large-scale emergency will result in increased demands on Public Health and medical personnel.
2. Emergency operations for Public Health personnel will constitute a manageable increase in normal agency duties.
3. Following an emergency / disaster, the Health Department will take action to prevent the spread of communicable disease resulting from contaminated water supplies, malfunctioning septic systems, increased numbers of vectors, spoiled or contaminated food supplies and lack of functional sanitary facilities.
4. A catastrophic disaster could result in multiple fatalities necessitating extraordinary measures, including establishing a temporary morgue.
5. When local resources can no longer meet the demands of the situation, additional resource requirements will be requested through the local Emergency Services Director who will in turn contact the NC Division of Emergency Management Eastern Branch Office.

III. CONCEPT OF OPERATIONS

- A. The Line of Succession for Public Health Services is as shown below:
1. Cumberland County Health Department Director
 2. Cumberland County Public Health Physician
- B. The primary concern of public health is disease control. The County Health Department will implement effective environmental health, nursing and health education practices to minimize the incidence of disease.
- C. The Health Department will coordinate health care in approved shelters.
- D. Frequent inspections of damaged areas and emergency shelters will be necessary to determine the need for pest control, sanitation or other protective measures.
- E. The Health Director will assist the Medical Examiner in establishing temporary morgues and coordinate with Medical Examiners in the identification and proper recovery of human remains.
- F. The Health Director will oversee the expeditious testing of emergency water supplies to ensure potability.
- G. The Health Director will coordinate with the Public Information Officer concerning distribution of information to the general public on disaster related health matters.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

PUBLIC INFORMATION

Primary Agency: County Administration
Support Agencies: Board of County Commissioners
Emergency Services Director

I. PURPOSE

This section describes the process for staffing, operating and maintaining a public information system in the event of an emergency.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. The broadcast and print media will be relied upon to assist in the dissemination of public information to the general public.
2. The Public Information Officer (PIO) and Emergency Services Director have the capability to utilize the Emergency Alert System (EAS) to deliver information to the public.
3. Cumberland County will receive extensive out of county media coverage during emergency and disaster situations.
4. Scanner radios are used extensively by residents of the county and this provides an alternate avenue for delivery of emergency public information.
5. The county is served by the following news media outlets:

Radio Stations

WFAI 1230 AM	WKML 95.7 FM
WIDU 1600 AM	WAZZ 1490 AM
WFLB 96.5 FM	WQSM 98.1 FM
WFNC 640 AM	WZFX 99.1 FM
WFSS 91.9 FM	WIOZ 102.5 FM
WKQB 106.9 FM	WCCG 104.5 FM

Newspaper

The Fayetteville Observer Times

TV Stations

WRAL TV 5	Cable # (3)	WKFT TV 40	(8)
WECT TV 6	(6)	WFPX TV 62	(9)
WTVD TV 11	(11)	WNCN TV 17	(10)

WLFL - Fox (2)
COMMUNITY CHANNEL

WUPN TV (12)
(7)

B. Assumptions

1. The County Public Information Officer will be available.
2. Demands for information will be heavy; therefore, sufficient numbers of trained staff will be provided to respond to questions from the public.
3. Special interest groups in the county may disagree with official public information.
4. The public will accept rumors, hearsay and half-truths as valid information, which will cause fear and confusion.
5. Local print and broadcast media will cooperate in printing and broadcasting detailed disaster related instructions to the public.
6. Emergencies and disasters, which impact the county or its municipalities, will be of interest to media sources outside the county and the state.

III. CONCEPT OF OPERATIONS

A. The Line of Succession for Public Information is as shown below:

1. County Public Information Officer
2. County Manager
3. Emergency Services Director

B. General

1. Public information for law enforcement emergencies will be handled by the Sheriff or Chief law enforcement officer with assistance from the Public Information Officer as necessary.
2. Ongoing public education programs will be conducted to increase public awareness concerning the following:
 - a. Potential hazards of the county
 - b. Family preparedness
 - c. Necessary action to be taken by the public
 - d. Shelter locations
 - e. Flood prone areas
 - f. Evacuation routes
 - g. Emergency Services function
 - h. Transportation to designated shelters
3. The Emergency Services Director and County Public Information Officer are the authorities to activate the use of the Emergency Alert System (EAS).
4. The National Weather Service will issue weather watches or warnings directly to Cumberland County EOC, Emergency Communications Center and to the media for public release.

5. During emergencies or disasters, Policy / Administration Group decisions and general information advisories will be released on a timely basis to the media.
6. Action will be taken to correct identified errors in information released by the media, or rumors about the emergency situation.
7. Hard copy news releases are disseminated to the media and appropriate county and/or municipal officials. County news releases will be Internet e-mailed or faxed to the Area "C" Office of the N.C. Division of Emergency Management.
8. Cumberland County will practice a progressive approach for the dissemination of information to isolated and non-English speaking populations during and following emergency events.
9. The magnitude of the disaster may require innovative means of communications to inform the public. For example: aircraft banners, balloons and billboards, etc.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

PUBLIC UTILITIES

Primary Agency: Emergency Services Director

Support Agencies: Cumberland County Maintenance Department
Cumberland County Solid Waste Department

I. PURPOSE

The purpose of this section is to provide for essential public works services during an emergency / disaster to including solid waste disposal, water distribution, fleet maintenance, and buildings and grounds.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. Cumberland County

- a. Cumberland County does not operate a Public Works Department. The county does operate a Maintenance Department that provides the following services:
 - (1) Building and Grounds
 - (2) Carpentry
 - (3) Electrical and Mechanical
- b. The county owned landfills are located at Ann Street and Wilkes Road. The Ann Street Landfill accepts solid waste, commercial, industrial, and residential garbage. The Wilkes Road Landfill serves as the county tire collection site. It accepts most construction materials, household garbage and appliances. A separate facility on Wilkes Road collects household hazardous materials.
- c. Container Collection Facilities are located throughout the county. Materials accepted from these facilities include: household garbage, batteries, up to 5 tires, used oil, cardboard, metal and newspaper for recycling, and wood.

The Container Collection Facilities are located:

- (1) Camden Road – Waldo's Beach
- (2) Lowell Harris Road
- (3) River Road at Wade
- (4) Off Turnbull Road - Beaver Dam
- (5) Off Highway 210 - Beaver Dam
- (6) Wade Stedman Road
- (7) Hummingbird Place
- (8) Macedonia Church Road

- (9) McBride and Giles - Linden
- (10) Little River Road - Spring Lake
- (11) Off Tom Starling Road
- (12) Ed Dudley Road - Cedar Creek
- (13) Highway 59 to Odom Road
- (14) Blackbridge Road - Hope Mills
- (15) Dumpster Road - Godwin
- (16) Kennel Road - Eastover

- d. Municipal waste is delivered to the landfill by municipal services in Fayetteville, Hope Mills, and Spring Lake. The municipalities and private refuse companies are permitted annually by the Health Department. The listing of the private companies is maintained at the Health Department, Solid Waste and Emergency Services offices.
- e. Electrical service is provided in the county by Public Works Commission, Carolina Power and Light, Lumbee River Electric Membership Corporation and South River Electric Membership Corporation.
- f. Commercial and residential phone service is provided in the county by Sprint - Carolina Telephone and Star Telephone.
- g. Bell South Mobility, Cellular One, and Alltel Communications provide cellular service.
- h. Private water systems are operated by Baywood Water Services, Brookwood (LaGrange) Water Corporation, Cypress Lakes Water Service, and Public Works Commission.
- i. All public roads in Cumberland County are owned by the State and maintained by the North Carolina Department of Transportation.
- j. Cumberland County is in N.C. DOT Division 6 and includes Districts 1, 2, and 3. The facility is located at 558 Gillespie Street in Fayetteville. A State fuel pump is located at this site. Other services provided include:
 - (1) Area Right of Way Office
 - (2) Area Roadside Engineering
 - (3) Area Traffic Engineering Office
 - (4) Bridge Maintenance
 - (5) Equipment
 - (6) Construction
 - (7) M & T Lab
 - (8) Maintenance
 - (9) Roadside Environmental
 - (10) Road Oil
 - (11) Traffic Services
- k. The County Maintenance Facility is located at 426 Mayview Street, Fayetteville. Credit Cards are issued to departments to purchase fuel at local vendors.

- I. In emergency situations, fuel will be provided at the Central Maintenance Facility with a County School System fuel truck. An alternate point would be the City of Fayetteville Maintenance Facility on Grove Street.
- 2. Municipalities
 - a. City of Fayetteville.
 - (1) The City of Fayetteville Planning and Development Department provides services for Storm Water Services and maintenance of streets and drainage areas.
 - (2) The Solid Waste Department collects residential trash within the city.
 - (3) The Maintenance facility at 280 Lamon Street is the fuel point for city vehicles.
 - (4) Electricity is provided by the Public Works Commission.
 - b. Town of Hope Mills
 - (1) The Town of Hope Mills Street Department maintains the streets and drainage areas within the town.
 - (2) The Sanitation Department collects residential trash within the city.
 - (3) The Town of Hope Mills has an agreement with Exxon and uses Exxon gas station for fuel for all town vehicles.
 - (4) Electricity is provided by CP&L and Lumbee River Electric Corporation.
 - c. Town of Spring Lake
 - (1) The Town of Spring Lake Street Department maintains the streets and drainage areas within the town.
 - (2) The Sanitation Department collects residential trash within the city.
 - (3) The Town of Spring Lake operates a fuel pump for town vehicles behind the Town Hall at 300 Ruth Street.
 - (4) Electricity is provided by CP&L.
- B. Assumptions
 - 1. Following a catastrophic event, most roads and streets will be impassable due to debris.
 - 2. Volunteers will be available to assist with emergency debris removal.

3. Interruption of some or all-essential services is an expected consequence of an emergency / disaster, resulting in large numbers of people without essential services.
4. During major emergencies, Cumberland County will require assistance from State agencies and other localities for significant debris removal and for utility restoration.
5. A catastrophic event affecting multiple counties and/or states may result in the following sequences:
 - a. Loss of some or all-essential services for extended periods of time.
 - b. A shortage of available outside assistance.
 - c. A shortage of materials for repair of utilities-overall delay in restoration of essential services.
 - d. Rapid exhaustion of local resources.
 - e. Inability to relay resource requests/needs.
 - f. Attempted price gouging for repair of essential services.
6. The N.C. DOT Division of Highways will remove debris from the highway and road system. The Division will not remove debris from private property except in extraordinary cases cleared through the State EOC.
7. The N.C. Division of Forest Resources can perform emergency debris removal beyond State property when requested and approved through the State EOC.
8. Privately owned farm and industrial equipment will be heavily utilized by volunteers assisting with debris removal.
9. Controlled burning will be allowed as a means of disposal.
10. Cities will remove debris from city owned streets.

III. CONCEPT OF OPERATIONS

- A. The Line of Succession for Public Utilities is as shown below:
 1. Disaster Recovery Manager
 2. Solid Waste Director
 3. Emergency Services Director
- B. In non-emergency periods, the role of public works activities is confined to trash collection, landfill operations, building, ground and street maintenance, water and sewage utility service and transportation, and equipment operations and maintenance.
- C. During emergencies, the public works function expands, and coordination of public works emergency operations is essential. Solid Waste and Emergency Services arrange support and services for emergency response agencies and coordinates with the private sector.

- D. Priority debris clearance will be given to streets and primary roadways to allow passage of emergency vehicles.
- E. The County and the municipalities will keep individual records on debris clearance expenditures.
- F. Priority will be given to restoration of the public water systems damaged during disaster.
- G. The county Maintenance personnel are responsible for securing buildings and maintaining building generators for use in disasters.
- H. Controlled burning will be allowed as a means of disposal.
- I. Cities will remove debris from city owned streets.
- J. Privately owned industrial equipment providers will be called upon for support.
- K. A shortage of materials for repair / restoration can be expected.
- L. Price gouging can be expected for essential supplies (ice, milk, building supplies, etc.).

**CUMBERLAND COUNTY
EMERGENCY OPERATIONS PLAN
QUARANTINE**

(Under Development)

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

RADIOLOGICAL PROTECTION

Primary Agency: Cumberland Emergency Services Department

Support Agencies: Fayetteville Regional Response Team #3 - HazMat

I. PURPOSE

This annex establishes the organization and assigns responsibilities to provide a preparedness capability in response to radiological incidents caused by peace-time emergencies.

II. SITUATION AND ASSUMPTIONS

A. Situation

Radiological Hazards

1. Cumberland County is susceptible to accidents involving the transportation of radioactive materials. The primary road systems used are Interstate 95, US-13, US- 301, US 401, NC 24, NC 53, NC 59, NC 87 and NC 210. Pope Air Force Base, Simmons Army Field and Fayetteville Regional Airport serve the greater Fayetteville and Cumberland County area. Radiography sources used to x-ray pressure pipe welds can be transported over road systems within Cumberland County. These radiography sources can be located in the N.C. Department of Transportation District Engineers Office, Fayetteville, N.C.
2. Sources of potential radiological hazards within the County are:
 - Cape Fear Valley Medical Center – Owen Drive
 - Colocraft Corporation – 241 Tillinghast Street
 - Kelly Springfield – 401 North
 - 1 Hour Photograph Facilities (Countywide)
 - Dupont – Cedar Creek Road
 - Cargill Inc. – River Road
 - Crowell Construction, Inc.- 1100 Robeson Street
 - City of Fayetteville – 339 Alexander Street.
 - Fayetteville Technical Community College (FTCC) – Hull Road
 - Highsmith-Rainy Memorial Hospital – 150 Robeson Street
3. Without adequate initial response measures, an accident could result in radioactive contamination and unnecessary exposures.

B. Assumptions

1. Proper development and execution of a radiological protection system will significantly reduce the number of casualties from a radiological incident.
2. Adequate facilities will be available to collect and disseminate the necessary data including weapons effects and meteorological information.
3. Warning, detection, prevention and remedial measures will reduce the effect of nuclear radiation.
4. A combination of trained radiological personnel and operational equipment can be positioned to detect, measure, report, analyze, evaluate and conduct countermeasure operations.
5. Trained local emergency response agencies can effectively manage an accident scene with technical assistance from the Radiation Protection Section, DHR.
6. During nuclear threat attack, the Director of Social Services will coordinate with the American Red Cross (ARC) to support shelter operations.
7. Residents in areas where there is a high risk of nuclear weapons direct effects will be allocated only to PF2+ spaces. Where a deficit of these spaces exists, residents will be allocated to and encouraged to improvise home basement shelters or directed to the closest available fallout shelters.
8. Trained local emergency response agencies can effectively manage an accident scene with technical assistance from the Radiation Protection Section, DHR.

III. CONCEPT OF OPERATIONS

- A. A very important part of an effective radiological protection system is detection and monitoring.
- B. Cumberland County RO will develop, organize and maintain a Radiological Protection System (RADPRO) to include an EOC staff.
- C. The Radiological Protection System (RADPRO) will provide:
 1. A shelter radiological monitoring capability for monitoring and assessing the radiation environment for shelterees.
 2. A self-protection radiological monitoring capability for monitoring and assessing the radiation environment to control or limit the radiation exposure of emergency response personnel.
 3. A monitoring, reporting and assessment capability for determining the extent and magnitude of the radiological hazard.
 4. A decontamination capability to include an inventory of equipment and listing by priority of facilities and industries to be returned to an operational status.

5. A radiological emergency response capability for handling radioactive materials.

IV. ORGANIZATION AND RESPONSIBILITIES

A. Organization

1. The Emergency Management Coordinator will coordinate and maintain the RADPRO System.
2. The Radiological Officer will conduct radiological protection operations and will coordinate with other departments to ensure radiological protection operational readiness.
3. Upon request of the Radiological Officer, selected county agencies will ensure the availability of personnel for training as radiological monitors in radiological emergencies.
4. The Radiological Officer will contact the North Carolina Department of Human Resources, Radiation Protection Section for technical assistance to control and dispose of radioactive materials.

B. Responsibilities

1. ***Emergency Management Coordinator***

- a. Appoint a Radiological Officer.
- b. Establish a comprehensive radiological training program.
- c. Acquire and provide radiological monitoring equipment.
- d. Coordinate overall radiological protection activities.

2. ***Radiological Officer***

- a. Ensure serviceability of radiological monitoring instruments.
- b. Provide public education about radiological hazards and protective actions.
- c. Develop Cumberland County radiological protection procedures.
- d. Develop mutual aid agreements with neighboring jurisdictions to exchange radiological data and provide support radiological capability.
- e. Conduct a semi-annual inventory of radiological equipment.
- f. Maintain a current internal notification / recall roster.
- g. Establish a distribution system for radiological protection equipment.
- h. Develop a radiological decontamination capability and establish priorities for decontaminating facilities.
- i. Identify available protective equipment, instruments and clothing needed to perform assigned tasks in a hazardous chemical or radiological environment.
- j. Coordinate with emergency service chiefs to ensure training of response personnel in radiological monitoring techniques.
- k. Ensure that all emergency support services, vital facilities and essential industries provide trained radiological protection personnel.
- l. Provide a system of controlling the exposure of personnel within the jurisdiction to hazardous substances.
- m. Provide for the crisis training of radiological monitors for all public fallout shelters planned for use.

- n. Coordinate with the Communications Director to establish a radiological communications system.
- o. Report to EOC upon activation to direct and control the radiological protection emergency response.
- p. Obtain radiation exposure rates using a network of reporting sources.
- q. Provide for maintaining dose records for emergency workers and ensuring that dosimeters are read and reported at appropriate frequencies.
- r. Ensure that radiological monitors are available to provide data to the EOC.
- s. Report information on radiation levels to the EOC during emergency operations.
- t. Estimate total population exposure during radiation emergencies.
- u. Support specialized radiological teams as needed (e.g. Radiological Emergency Response Teams).
- v. Coordinate the release of public information about radiation safety through the PIO.
- w. Coordinate with the PIO to prepare pre-scripted announcements for radiological emergencies.
- x. Coordinate special monitoring functions (e.g. ground and aerial surveys during recovery actions).
- y. Conduct damage assessment following radiological emergencies.

3. ***Sheriff***

- a. Provide security
- b. Provide site security and protect citizens during radiological incidents.

4. ***Health Director***

Assist the Radiation Protection Section in the coordination of technical assistance.

V. DIRECTION AND CONTROL

- A. Overall coordination of emergency operations and support requirements for radiological protection will be conducted between the heads of departments / agencies and the Emergency Management Coordinator.
- B. When the EOC is activated, the Radiological Officer will supervise plotting radiological damage assessment and decontamination operations.
- C. The Radiological Officer will coordinate the collection and evaluation of radiological information and make recommendations for protective measures to the EMC.

VI. CONTINUITY OF GOVERNMENT

- A. Line of succession is:
 - 1. Fayetteville Hazmat Team
 - 2. North Carolina Regional Response Team No. 3
 - 3. North Carolina Radiological Response Team

VII. ADMINISTRATION AND LOGISTICS

A. Administration

1. **General**

- a. The Radiological Officer will develop and maintain current standard operating procedures (SOPs) for the RADPRO System.
- b. The RO will also maintain a roster of all radiological monitors to include names, addresses, telephone numbers and assignments.

2. **Record Keeping**

The computation of radiological data from a radiological incident is vital for emergency workers. These records should be kept current for exposure levels and will be supplied by the Emergency Management Coordinator.

3. **Reporting**

Radiological Hazards to State Warning Point via the County Warning Point.

B. Logistics

- 1. The Emergency Management Coordinator will provide equipment and supplies for EOC operations. Each individual organization assigned responsibilities will utilize radiation detection equipment and / or vehicles when feasible.
- 2. Radiation detection equipment that is not issued to self-protection entities will be stockpiled at the County EOC during increased readiness as stipulated in the SOP.
- 3. The North Carolina Division of Emergency Management is responsible for maintenance and calibration of RADPRO instruments.

VIII. PLAN DEVELOPMENT AND MAINTENANCE

- A. The Radiological Officer will direct and control radiological operations.
- B. This annex will be reviewed on an annual basis.

IX. AUTHORITIES AND REFERENCES

- A. N.C. General Statutes, 166A. (Emergency Management Act)
- B. N.C. General Statutes, 104 E. (Radiation Protection Act)

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

RECOVERY OPERATIONS

Primary Agency: Cumberland Emergency Services

Support Agencies: Cumberland County Finance Department
Damage Assessment Team
Designated County Agencies
Fire Departments
Cumberland County Solid Waste

I. PURPOSE

This section presents a system for the provision of disaster recovery operations.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. Recovery consists of those measures undertaken by a community following a disaster to return all systems to normal or improved levels. Recovery will not just happen, despite the fact that citizens generally take the initiative in "picking up the pieces" and trying to resume the activities that make up community life. Effective recovery consists of a complex array of inter-dependent and coordinated actions. These actions are undertaken at several levels (individual, organizational, community, national) and over a long period of time.
2. A properly managed recovery program will allow the prompt restoration of essential services, the reconstruction of damaged property and the resumption of traditional lifestyles.
3. Recovery from a significant disaster will be managed in two identifiable phases:

a. Short Term Recovery Phase

This is the emergency reaction phase that begins with the implementation of emergency plans. Actions under this phase will include:

- (1) Initial emergency response (i.e., fire / rescue, law enforcement, EMS operations and mass care)
- (2) Initial impact assessment
- (3) Emergency debris removal
- (4) Restoration of vital services
- (5) Security of damaged/evacuated areas
- (6) Management/distribution of donated goods
- (7) Preliminary damage assessment

b. Long Term Recovery Phase

Actions under this phase will include:

- (1) completion of damage assessment
 - (2) Completion of debris removal
 - (3) Request for Disaster Declaration/assistance
 - (4) Restoration of essential facilities
 - (5) Repair / rebuilding of damaged public and private buildings and facilities
 - (6) Repair / rebuilding of roadways and bridges
 - (7) Repair / rebuilding of private homes and businesses
 - (8) Hazard mitigation projects
4. A request from the Governor to the President of the United States for a Presidential Declaration will be based on the magnitude and severity of the situation and the inability of the county to recover without assistance. A declaration request must come from the County, not a Municipality.
5. The President's Disaster Relief Program is designed to supplement the efforts and available resources of State and local governments, voluntary relief organizations and other forms of assistance such as insurance. The President's declaration, of a major disaster or an emergency, authorizes Federal assistance under the Stafford Act and triggers other Federal disaster relief programs as well.
6. A full Presidential Declaration of Disaster includes all of the following emergency assistance programs:
- a. Public Assistance Programs (PA)
 - b. Individual Assistance Programs (IA)
 - c. Small Business Administration assistance (SBA)
 - d. Hazard Mitigation Programs
7. In lieu of a full Presidential Declaration, Federal assistance can also be delivered through a partial Declaration and any combination of the following:
- a. Search and Rescue Assistance
 - b. Fire Suppression Assistance
 - c. Health and Welfare measures
 - d. Emergency Conservation Program
 - e. Emergency Loans for Agriculture
 - f. Disaster Loans for Homeowners & Businesses
 - g. Repairs to Federal Aid System Roads
 - h. Tax Refunds/IRS Assistance to victims
 - i. Voluntary Agency Assistance via Red Cross
 - j. Department of Defense Predeclaration Emergency Assistance (via the Stafford Act)
8. There exists in the county a United States Department of Agriculture (USDA) County Emergency Board responsible for providing leadership and coordination for all USDA emergency programs at the county level. The USDA State Emergency Board provides guidance, direction and assistance on emergency programs.

9. The President may declare an emergency in the absence of a Governor's request when the emergency involves a subject area for which the Federal Government exercises exclusive or preeminent responsibility and authority.
10. Close cooperation among the agents of Local, State and Federal government will be essential in expediting assistance to the county after any Presidential Declaration.
11. Hazard Mitigation Grants may be available through FEMA after a Presidential Declaration; the grant total will be based on the amount of Public Assistance funds provided to Cumberland County Public Assistance applicants.
12. As potential applicants for Public Assistance, local governments and private non-profit agencies must thoroughly document disaster-related expenses from the onset of an emergency / disaster.
13. Businesses that intend to apply for Small Business Administration Disaster Loans, etc. will need thorough documentation of the history of the business and the effect of the disaster on the business.

B. Assumptions

1. A major disaster will have a significant long-term economic impact on the county.
2. Unsolicited resources and donated goods can be expected from outside the impacted area. The county must be prepared to manage this influx of resources and goods as part of the recovery effort (See Donated Goods Section).
3. Space will be available for the operation of one or more Disaster Recovery Centers in the county following a Presidential Declaration of Disaster.
4. A Disaster Field Office will be set up in North Carolina by the Federal Emergency Management Agency. The DFO will be near the disaster area.
5. The damage assessment process will identify local individuals with unmet needs.
6. A minimum loss of 30% of one of the county's major crops will qualify the county's agri-business community for USDA Disaster Assistance; however, the loss must be incurred as a result of natural disaster.
7. The State's share of PA funds provided for Public Assistance will be 25%, supplementing the mandated Federal share of 75%.
8. Mitigation is extremely important to local officials who must bear the agony of loss of life and property when disaster strikes.

III. CONCEPT OF OPERATIONS

A. The Line of Succession for Recovery Operations is as shown below:

1. County Manager
2. County Emergency Services Director
3. Assistant Finance Director

B. General

1. Responsibility for coordination and support of the recovery effort lies with local government.
2. Recovery operations will initially be coordinated from the County EOC.
3. Accurate emergency logs and expenditure records will be kept from the onset of the disaster by each local government agency/organization. Standardized forms have been developed for local government; these forms will be available through the County Emergency Services.
4. The President may authorize the utilization of any Federal equipment, personnel and other resources.
5. The Governor may request a Presidential Declaration or specific Federal Agency declarations, i.e., Small Business Administration, Department of Agriculture, Corps of Engineers, etc., to augment state/local/private disaster relief efforts.
6. The Farm Service Agency will be the lead agency for agricultural disasters under a declaration. For natural disasters where loss is confined to agriculture, the following actions will occur:
 - a. Damage assessment
 - b. USDA County Emergency Board meeting
 - c. Submission of a USDA Flash Situation Report to Farm Service Agency Area Office
 - d. USDA State Emergency Board meeting
 - e. Exchange of information on available programs/ actions plus other counties affected
 - f. State Review of damage assessments reports
 - g. Decision made by State Board on "concurring" and "not concurring" with information in the damage assessment reports
 - h. Forwarding of reports to Rural Economic & Community Development National Headquarters to support a request for designation of a county for FHA Emergency Loans
7. A Presidential Declaration of Disaster will initiate the following series of events:
 - a. A Federal Coordinating Officer (FCO) will be appointed by the President to coordinate the federal efforts.
 - b. A State Coordinating Officer (SCO) and Governor's Authorized Representative (GAR) will be appointed by the Governor to coordinate the state efforts.
 - c. A Disaster Field Office (DFO) will be established within the state (central to the damaged areas) from which the disaster assistance programs will be administered.
 - d. Disaster Recovery Centers (DRCs) will be established in the affected areas to accommodate persons needing Individual Assistance.
 - e. An Applicants' Briefing will be held to explain Public Assistance eligibility criteria for officials of the county, cities and private nonprofit organizations. The Emergency Services Director will assist with identification and notification of potential applicants.

- f. Each eligible entity will submit a Notice of Interest (NOI) within thirty days of the Declaration.
8. A Presidential Declaration of Disaster may authorize two basic types of disaster relief assistance:

- a. Individual Assistance (IA) - supplementary Federal assistance provided under the Stafford Act to individuals and families adversely affected by a major disaster or an emergency. Such assistance may be provided directly by the Federal Government or through State or local governments or disaster relief organizations.

Individual Assistance can consist of any or all of the following:

- (1) Temporary housing (100% federal dollars)
- (2) Individual and family grants (IFG) (75% federal, 25% state/local funds)
- (3) Disaster unemployment assistance
- (4) Disaster loans to individuals, businesses and farmers
- (5) Agricultural assistance
- (6) Legal services to low-income families and individuals
- (7) Consumer counseling and assistance in obtaining insurance benefits
- (8) The Cora Brown Fund
- (9) Veterans' assistance
- (10) Casualty loss tax assistance

- b. Public Assistance (PA) - supplementary Federal assistance provided under the Stafford Act to State and local governments or certain private nonprofit organizations, other than assistance for the direct benefit of individuals and families.

Categories of Public Assistance available include:

- (1) Debris removal
- (2) Emergency protective measures
- (3) Permanent work to repair, restore or replace:
 - (a) Road systems
 - (b) Water control facilities
 - (c) Public buildings and equipment
 - (d) Public utilities
 - (e) Public recreational facilities
 - (f) etc.

9. Following the Public Assistance Applicant's briefings, Damage Survey teams will be dispatched from the DFO to inspect every damaged site and prepare Damage Survey Reports (DSR) for each applicant. The DSR will provide a recommended scope of work and give estimated costs in accordance with FEMA eligibility criteria. The criteria allow repairs or restoration of facilities to their pre-disaster condition in accordance with applicable codes, specifications and standards.

10. A Public Assistance Damage Survey team will be comprised of the following:

- a. A Federal representative who will serve as the team leader
- b. A State representative

c. Local applicant's representative

11. The Emergency Services Director and the County Engineer will take the lead in determining mitigation projects needed following a disaster. Applications will be prepared for available mitigation grants.

12. Following any major emergency or disaster event, a critique will be held to evaluate the jurisdiction's response to the event. A critique will include the following issues related specifically to recovery:

a. Mitigation of potential problems through use of Hazard Mitigation Grants

b. Plan Revision based on lessons learned

c. Unmet Needs status

d. Management of Donated Goods

e. Interagency cooperation

f. Damage Survey Report process / documentation

g. Recovery training needed

B. Specific

Areas of the county where large quantities of disaster supplies could be stockpiled at are:

1. Charlie Rose Agri-Expo Center

2. Cape Fear Community Food Bank

3. Cumberland County Schools Operations Building on Gillespie Street

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

RESOURCE MANAGEMENT

Primary Agency:	Emergency Services Department
Secondary Agency:	Fire Marshal's Office Sheriff's Office Emergency Communications Center County Fire Departments Solid Waste Department Parks and Recreation Department County Tax Assessor County School System Central Maintenance Facility Municipal Fire Department Municipal Police Departments Municipal Street Maintenance Municipal Sanitation Department

I. PURPOSE

This section provides for the identification and management of resources that may be utilized during emergency / disaster situations.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. A multitude of resources will be critical to immediate emergency response following a major emergency / disaster event. Additionally, many resources will be critical for long-term recovery operations.
2. Several categories of resources have been identified and include:
 - a. Personnel
 - b. Equipment
 - c. Facilities
 - d. Information
 - e. Commodities
3. Cumberland County Emergency Services maintains a list of public and private sector resources, updated on a regular basis that could be utilized during an emergency / disaster response. This list will be maintained in the EOC during emergencies and in the Emergency Services Offices during normal operations.

B. Assumptions

1. During or immediately following an emergency / disaster situation, the initial emergency response will be dependent upon available local, public and private resources.
2. Adequate local resources do not exist to cope with a catastrophic emergency / disaster response.
3. Identified public and private sector resources are identified and will be available for emergency / disaster response.
4. Required personnel and supplies will be available to respond to emergency resource requirements.

III. CONCEPT OF OPERATIONS

A. The Line of Succession for Resource Management is as shown below:

1. Emergency Services Director (Operations Officer)
2. Logistics Officer
3. Assistant Finance Director

B. Cumberland County Jurisdictions and Agencies will use their own resources and equipment during emergency / disaster situations and will have control over the management of the resources as needed to respond to the situation.

C. Resource management will be coordinated from the Cumberland County EOC during countywide emergency / disaster situations. It will be coordinated from Municipal EOCs during emergencies, isolated to a municipality.

D. The commitment of resources from outside Cumberland County will be initiated by the Emergency Services Director with operational control being exercised by the on-site commander of the service requiring that resource.

E. Requests for additional resources to respond to an emergency will be directed to the Resource Manager function within the EOC.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

SCHOOL EMERGENCY PLAN

I.	INTRODUCTION
II.	NOTIFICATION
III.	PROTECTIVE ACTION: SHELTERING
IV.	PROTECTIVE ACTION: EVACUATION
V.	STUDENT IDENTIFICATION
VI.	TRANSPORTATION

Primary Agency:

- Superintendent of Schools / Associate Superintendent of Auxiliary Services

Support Agencies:

- Cumberland County Board of Education
- Cumberland County Schools - Building Maintenance
- School Principals
- Cumberland County Board of Commissioners
- Emergency Management
- Sheriff

I. INTRODUCTION

- A. The School Emergency Plan (SEP) for protective actions to be taken in the event of an emergency have been developed by the NC Division of Emergency Management in conjunction with Cumberland County Emergency Management and the school system.
- B. There are numerous situations and circumstances that may implement this portion of the Emergency Operations Plan. The conditions may be:
 1. Severe weather
 2. Man made events, such as chemical spills
 3. Mass casualty event at the school or other such event

Each condition requires a specific response from local government. Local government will activate the Emergency Operations Center (EOC), as necessary, when an event affects schools or the school system.

II. NOTIFICATION

- A. Should an event occur (i.e., weather, chemical spill, etc.) which requires notification; action will be taken based upon the conditions at the time. If protective actions by the public and / or schools are necessary, local government will activate the primary notification system.
- B. School officials will be notified by telephone of the emergency.

- C. If an emergency incident occurs at the school, school officials will contact the Cumberland County Warning Point, via 9-1-1.
- D. Schools in Cumberland County are also supplied with a weather alert radio system to warn of impending severe weather. This system can also be used for other emergency events.
- E. Upon notification that an incident has occurred, the school principal or his / her designee shall activate its emergency response plan to ensure the safety and welfare of students and staff.
- F. Following receipt of notification of an emergency, the principal (or designee) will notify the Superintendent of Schools, the Safety/Security Officer, the school transportation system director, and the EOC representative of their course of action. This will ensure that resources are activated or put on standby to implement the school plan.

III. PROTECTIVE ACTION: SHELTERING

Protective actions include sheltering and evacuation. All actions shall be performed under the direction of the school principal or his / her designee. When notified that sheltering is necessary the following actions shall be taken:

- A. Notify students and staff of existing emergency and instructions to be followed by PA system.
- B. Ensure that all outside activities have ceased and all have returned to the buildings.
- C. Remain indoors until notified that it is safe to leave the building. **DO NOT GO OUTSIDE.** All students will remain in classrooms under the supervision of a teacher.
- D. Teachers and staff members will close all doors and windows.
- E. Custodial staff will turn off ventilation systems leading to the outside (i.e., air conditioning, heat system, fans).
- F. Remain in the interior section of the building away from exterior doors and windows for greatest protection (i.e., basement, interior rooms, etc.)
- G. Food service staff should cut off all fans, air conditioners, forced air heating systems, and any other ventilation system leading to the outside.
- H. Communicate with superintendent of schools regarding protective actions undertaken.

IV. PROTECTIVE ACTION: EVACUATION

- A. Notification to evacuate a school may occur depending upon the severity of conditions during an emergency. Efforts will be made to evacuate all schools within the shortest possible time.
- B. Upon notice to evacuate, the principal or designee will announce the course of action that the school will take over the PA system. Students will clear their desks, lockers, and closets of personal items and report to classrooms or homerooms. Teachers will take roll call and account for all students.
- C. Each school will be evacuated to the reception center identified for that school. Teachers and other school staff will be requested to drive personal vehicles to reception center location and assist in accountability of students; however, at least one (1) teacher or staff member will be

assigned to each bus leaving the school. Students will not be allowed to drive their personal vehicles to the reception center location.

- D. Each school will be assisted in traffic and crowd control by a law enforcement officer from local or state government. Buses will leave each school and proceed to the reception center as a convoy. Each convoy will be escorted and followed by a law enforcement officer. They will also serve as the primary communications link between the convoy and the EOC. Additional buses will be allocated if necessary.
- E. After leaving the school, all evacuees will proceed directly to the appropriate reception center. Families will be notified by Cumberland County Schools "Connect ED" message system and local media of the reception center location to which their children have been relocated. Parents / guardians should not attempt to go to the school for pick up but should proceed to the appropriate reception center location.

V. STUDENT IDENTIFICATION

- A. Each student shall be provided with a visible identification badge (either a school id self-adhesive label or school manufactured badge that will be worn on the student's body pinned to clothing with a safety pin) prior to evacuation. The following information will be on the badge:
 - 1. School
 - 2. Student's name
 - 3. Address
 - 4. Name of parent / guardian
 - 5. Home telephone number
 - 6. Teacher's name
 - 7. Bus number of evacuation
- B. The identification badges will be prepared at the beginning of each year and updated on a routine basis to ensure that each student is provided with a means of identification if evacuation should become necessary. If utilized for evacuation for other than a radiological emergency, new badges shall be made for each student following use of the earlier badges. It is vitally important that this information be maintained and updated routinely since some younger students may be confused and unable to communicate their identity to reception center officials. Identification badges will be kept by the teacher and distributed in the event an evacuation is ordered.

VI. TRANSPORTATION

- A. Transportation resources will be pre-established to expedite the evacuation process. Transportation needs will be reviewed at the beginning of each academic year to ensure adequate resources. School buses will be the primary means of transportation. In addition, activity buses and other support vehicles may be used. If additional transportation is necessary, it will be provided through the EOC. Students driving to schools will not be permitted to drive their own cars out of the area, but will be instructed by the principal to report immediately to the assigned reception center.
- B. The principal or designee at each school will assign the order in which buses will be loaded by classroom with at least one (1) teacher or staff member assigned to each bus. All buses will be loaded to maximum safe capacity.

C. Each school will have a supply of information packages for bus drivers. Each package will contain protective information and directions to the appropriate reception center.

* Plans, specific to each school, are available from the school principal or the Administrative Offices.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

TRAINING AND EXERCISE

Primary Agency:

- Cumberland County Emergency Management

Support Agencies:

- NC Division of Emergency Management
- Emergency services training officers
- Red Cross

I. PURPOSE

To identify training and exercise programs available to county personnel in support of the County's planning efforts and response / recovery operations.

II. SCOPE

The Training and Exercise annex covers the below listed programs and identifies the target and audiences along with other information for each.

III. PROGRAMS

A. *Shelter Management Course*

1. Scope

A four to six-hour course which includes registration and identification of shelterees, organization of the shelter, types of shelter groups, organization of property brought into the shelter and shelter resources; shelter rules, social control and goals in radiological protection. It also includes the importance of water, safety, food, fresh air, sleeping, recreational activities and support.

2. Availability

Conducted by the American Red Cross in Cooperation with Emergency Management.

3. Refresher Training

At least once every year by the County Shelter Officer or upon request to the office of Emergency Management.

B. *Shelter Monitoring*

1. Scope

A three hour course presents an overview of the appropriate emergency response plans and

standard operating procedures for persons assigned

duties at personnel monitoring and decontamination stations, personal dose measurement, record keeping and personal monitoring and decontamination duties should take the 12 hour FCRM Course and this three hour course to be fully trained.

2. Availability

Conducted by the Division of Emergency Management certified instructors upon request.

3. Refresher Training

At least once every two years or as deemed necessary

C. NIMS

1. Scope

The NIMS represents a core set of doctrine, principles, terminology, and organizational processes to enable effective, efficient and collaborative incident management at all levels. To provide the framework for interoperability and compatibility, the NIMS is based on a balance between flexibility and standardization.

2.

Availability

Conducted by the Division of Emergency Management certified instructors upon request.

3. Refresher Training

At least once every two years or as deemed necessary

Additional courses may be found on the North Carolina Emergency Management website under [Training](#).

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

UNMET NEEDS

Primary Agency:

- Cumberland County Department of Social Services

Support Agencies:

- Health Department
- County Manager
- Emergency Management
- Other agencies as appropriate, and private and faith based organizations

I. PURPOSE

This section describes the process for addressing unmet needs following an emergency / disaster.

II. SITUATION AND ASSUMPTION

A. Situation

1. "Unmet needs" refers to those needs of individuals that are not met, or cannot be met, through a variety of service organizations i.e., Red Cross, Salvation Army, or Federal, State and local government programs.
2. Typical unmet needs can include the following:
 - Financial Assistance
 - Housing
 - Food
 - Transportation
 - Home Furnishings
 - Medical
 - Debris Removal
 - Counseling
3. An unmet needs committee is in place consisting of the following representatives:
 - Emergency Services
 - County Commissioners
 - Mayors & Commissioners
 - Social Services

Faith based organizations or businesses

This committee is chaired by the Social Services Director and is responsible for the identification of those persons who, for whatever reason, did not receive assistance or sufficient assistance to get them back to pre-disaster levels.

4. There are many sources of assistance available to be utilized through Church groups, civic groups, individual contributions and others.

B. Assumptions

1. There may be people with unmet needs following an emergency / disaster.
2. The committee will work with all available sources to identify those people with needs and all victims will be identified.
3. Assistance will be available to help with unmet needs.
4. All victims will be returned to pre-disaster levels.

III. CONCEPT OF OPERATIONS

- A. The committee will meet following an emergency / disaster and start assessing the needs, monitoring assistance and creating files on the victims and their needs.
- B. The committee will coordinate with other relief agencies to eliminate duplication of aid.
- C. Pre-disaster situations of victims will be determined on a case-by-case basis.
- D. Assistance other than the normal Federal, State and local programs will be identified and utilized in meeting needs.
- E. The committee will maintain a presence in the Disaster Application Center.
- F. The committee will refine the concept of operation as needed to best address the unmet need of the emergency at hand..

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

VITAL FACILITIES

Primary Agency:

- Cumberland County Emergency Management

Support Agencies:

- County Manager
- County Maintenance
- Sheriff
- Superintendent of Schools

I. PURPOSE

This section provides for the identification and management of critical / vital facilities.

II. SITUATION AND ASSUMPTIONS

A. Situation

1. Many of these identified facilities would be vital to emergency response during a major emergency or disaster event. Other facilities would be critical for immediate and long-term recovery operations.
2. Several categories of vital facilities and resources have been identified in Cumberland County including:

Vital Facilities:

- a. Shelter facilities
- b. Health / Medical facilities
- c. Government facilities
- d. Communications facilities
- e. Public buildings
- f. Emergency service facilities

Vital Utilities:

- a. Communications network components
- b. Electric distribution system components
- c. Transportation networks
- d. Energy facilities
- e. Water distribution / waste water facilities

Vital Resource and services sites:

- a. Private shelter / reception centers
- b. Landfill and debris collection sites
- c. Public / Private supply centers
- d. Helicopter landing sites

Special Needs Facilities:

- a. Correctional facilities
 - b. Congregate Care facilities
 - c. Day Care facilities
 - d. Hospitals
3. Cumberland County Emergency Management maintains a list of public and private sector resources that could be utilized during an emergency / disaster response.
 4. Cumberland County vital facility information is updated on a regular basis.

B. Assumptions

1. Identification of vital facilities will make it possible to predict the consequences of disaster, and to expedite the response of necessary resources from outside the area of impact.
2. Knowledge of the location and function of vital facilities will reduce the dependence on unwritten and assumed information.
3. Knowledge of vital facilities will expedite damage assessment and loss estimation.
4. The identification of vital facilities allows for the prioritization of post-disaster areas and restoration.

III. CONCEPT OF OPERATIONS

- A. Information pertaining to vital facilities and resources will be maintained in the Cumberland County computer systems, and accessible to the Cumberland County and Municipal Emergency Operations Centers.
- B. Annual update of the vital facilities inventory will be maintained through the Office of Emergency Management.
- C. Vital facilities may serve as the basis for establishing mutual aid and statements of understanding with other governmental or non-governmental agencies.
- D. Knowledge of the location and function of vital facilities allows for the implementation of planned mitigation approaches / projects in an attempt to reduce vulnerabilities.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

GLOSSARY

AREA "C" EMERGENCY MANAGEMENT COORDINATOR - Supervisor of the field office of the N.C. Division of Emergency Management, which serves the East Central Area of the state. The Area C Coordinator serves as liaison between State and Local governments, procures and coordinates necessary State resources.

CFR - Code of Federal Regulations: "49 CFR" refers to Title 49, the primary volume regarding HAZMAT transportation regulations.

CHEMTREC - CHEMical TRansportation Emergency Center operated by the Chemical Manufacturers Association to provide information and/or assistance to emergency responders.

Command Post - A centralized base of operations established near the site of a hazardous materials incident.

Community Emergency Coordinator - A person appointed for the local emergency planning committee (pursuant to SARA), who makes determinations necessary to implement plans, and who receives official emergency notification of releases.

Comprehensive Emergency Management (CEM) - An integrated approach to the management of emergency programs and activities for all four phases (mitigation, preparedness, response, and recovery), for all types of emergencies and disasters (natural, manmade, and attack), and for all levels of government (local, State, and Federal) and the private sector.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 - Legislation (PL 96-510) covering hazardous substance releases into the environment and the cleanup of inactive hazardous waste disposal sites. CERCLA established the "Superfund" to provide resources for these clean-ups. Amended and extended by SARA. (See CERCLA)

Continuity of Government (COG) - Plans and procedures for ensuring the survival and operational capabilities of governmental processes and lines of succession. This includes the protection and maintenance of agency and departmental vital records.

CPG 1-5, Objectives for Local Emergency Management - prepared by FEMA. Describes and explains functional objectives that represent a comprehensive and integrated emergency management program.

CPG - 1-8, Guide for Development of State and Local Emergency Operations Plans - prepared by FEMA (see EOP).

CPG 1-8a, Guide for the Review of State and Local Emergency Operations Plans - prepared by FEMA. Provides FEMA staff with a standard instrument for assessing EOPs that are developed to satisfy the eligibility requirement to receive Emergency Management Assistance (EMA) funding. Also called the "crosswalk" checklist. Utilized in development of NRT-1a.

Damage Assessment/Estimation - The conduct of on the scene surveys following any disaster to determine the amount of loss or damage caused by the incident. Extent of damage is assessed in all types of disasters such as flash flood, tornado, winter storm, hurricane, nuclear power incident, and chemical explosion.

Department of Crime Control and Public Safety (CC&PS) - The North Carolina department responsible for state crime control and disaster preparation and response.

Disaster - An occurrence or imminent threat of widespread or severe damage, injury, or loss of life or property resulting from any natural or man-made accidental, military or paramilitary cause.

Division of Emergency Management (EM) - The North Carolina state agency tasked with protecting the general public from the effects of natural or man-made disasters.

Emergency Alert System (EAS) - A voluntary network of broadcast stations and interconnecting facilities, which have been authorized by the Federal Communications Commission to disseminate information during an emergency, as provided by the Emergency Alert System Plan. EAS is made up of AM, FM, TV Broadcast Stations and non-governmental electronic communications operating in a voluntary organized manner during natural / man-made emergencies or disasters at national, state or local levels. This system keeps the public informed.

Emergency Management - Organized analysis, planning, decision-making, assignment, and coordination of available resources to the mitigation of, preparedness for, response to, or recovery from major community-wide emergencies. Refer to local and state emergency legislation.

Emergency Services Director (ESD) - The Emergency Response person responsible to the Direction and Control Group for coordinating the response activities of the combined government, industry, and public forces at work in the disaster.

Emergency Medical Services (EMS) - Local medical response teams, usually rescue squads or local ambulance services which provide medical services during a disaster.

Emergency Operations Center (EOC) - The protected site from which civil government officials (municipal, county, State, and Federal) exercise centralized direction and control in an emergency. Operating from an EOC is a basic emergency management concept. The person-in-charge of the disaster directs the response from this location, and all community officials assigned primary emergency response tasks coordinate their actions from this center. The EOC also serves as a Resource Center and coordination point for additional field assistance. The EOC may be partially activated with key staff persons meeting periodically, or it may be fully activated, thus operating on a continuous 24-hour basis, depending on the situation.

Emergency Operation Plan (EOP) - An all-hazards document, which briefly, clearly, and concisely specifies actions to be taken or instructions to be given in the event of natural disasters, technological accidents, or nuclear attack. The plan identifies authorities, relationships, and the coordinated actions to be taken based on predetermined assumptions, objectives, and existing capabilities.

Emergency Public Information - Information disseminated primarily in anticipation of an emergency, or at the actual time of an emergency; in addition to providing information as such, frequently directs actions, instructs, and transmits direct orders.

Evacuation - A population protection strategy involving orderly movement of people away from an actual or potential hazard.

Exercise - Maneuver or simulated emergency condition involving planning, preparation, and execution for the identification of areas of strength and weakness for improvement of emergency plan (EOP).

Extremely Hazardous Substance - EPA list of 300-plus substances named in SARA section 302(a)(2). Section 302, 303, and 304 of CERCLA apply to these substances. Length of list may be altered by EPA review process.

Federal Emergency Management Agency (FEMA) - A federal agency tasked with national emergency preparedness and disaster response. Responsibilities include assistance in all aspects of community planning, preparedness and response to the full range of likely disasters and emergencies, including recommendation for a Presidentially declared disaster area and administration of disaster funds. Provides a range of expertise and administrative skills in community preparedness planning via state emergency offices. It also deals in flood insurance, temporary emergency housing, training of state and local emergency response personnel and funding of preparedness projects and functions.

General Statute (G.S.) - The specific form of state law, codified and recorded for reference.

Hazard Analysis - A process used by emergency managers to identify and analyze crisis potential and consequences.

Hazard Identification - The Hazard Identification provides a structured approach for identifying those hazards judged by local officials to pose a significant threat to their jurisdiction.

HazMat, Hazardous Materials - any substance or material in a particular form or quantity, which the Secretary of Transportation finds may pose an unreasonable risk to health, safety, and property.

Hurricane - Pronounced rotary circulation, constant wind speed of 74 miles per hour (64 knots) or more.

ICS - Incident Command System: combination of facilities, equipment, personnel, procedures, and communication operating within a common organizational structure with responsibility for management of assigned resources to effectively direct and control the response to an incident. Intended to expand as situation requires larger resource, without requiring new, reorganized command structure.

In-Place Sheltering - Directing of personnel to remain in a building or seek shelter in a building or structure, in lieu of evacuation, for protection from a life safety threat.

Integrated Emergency Management System (IEMS) - A system, which allows improved capability by all levels of government to mitigate, prepare for, respond to, and recover from all disasters or emergencies.

LEPC - Local Emergency Planning Committee. (See "Committee")

Material Safety Data Sheet (MSDS) - Compilation of the health, flammability and reactivity hazards of a chemical. It is a legal document, required by the OSHA and SARA to be submitted to LEPC, SERC, and local fire department by chemical manufacturer or importer.

Mitigation - Is an activity that actually eliminates or reduces the probability of a disaster occurrence, or reduces the effects of a disaster. Mitigation includes such actions as, zoning and land use management, safety and building codes, flood proofing of buildings, and public education.

Mutual Aid Agreements - Formal or informal understanding between jurisdictions that pledge exchange of emergency or disaster assistance.

National Contingency Plan (NCP) - Term referring to the National Oil and Hazardous Substance Pollution Contingency Plan. Regulations prepared by the Environmental Protection Agency implement the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the response system of the Clean Water Act (sec. 311); refer to 40 CFR Part 300. It establishes three organizational levels: the National Response Team (NRT), Regional Response Teams (RRTs), and On-Scene Coordinators (OSCs), and can be implemented using two sources of federal response

funding. One fund enables the OSC to conduct oil spill activities; the other is used for chemical releases.

National Response Center (NRC) - Established under the Clean Water Act and CERCLA, and operated by the U.S. Coast Guard. The NRC receives and relays notices of discharges or releases, disseminates reports when appropriate, and provides facilities for use in coordinating a national response action when required. For release reporting call 24-hours a day (800) 424-8802; in Washington, D.C. call (202) 426-2675.

National Response Team (NRT) - Organization of representatives from 14 federal agencies with responsibility for national planning and coordination (interagency and interjurisdictional) of CERCLA objectives.

NOAA - National Oceanic and Atmospheric Administration.

National Warning System (NAWAS) - The Federal Warning System, used to disseminate warnings of imminent natural disaster or enemy attack into a Regional Warning System, which passes it to the State Warning Points for action.

National Weather Service (NWS) - A federal Agency tasked with forecasting weather and providing appropriate warning of imminent natural disaster such as hurricane, tornados tropical storm, etc.

NRT-1 - Emergency Planning Guide issued by NRT, dated March 1987; fulfills Congressional requirement for unified Federal guidance document for HazMat emergency planning. Product of numerous inputs from State and local government, industry, emergency planners, environmental groups, and the public. Known to some as the "orange book", and is a key, central document for LEPC/SERC guidance.

NRT-1A - "Criteria for Review of Hazardous Materials Emergency Plans", issued by NRT in May 1988, to assist communities in assessing the effectiveness of their plans. Derived in part from FEMA documents such as CPG 1-8,1-8a, and NRT-1.

NSF - The Coast Guard's National Strike Force (NSF), composed of two strategically located strike teams which are extensively trained and equipped to assist OSCs in responding to major oil spills and chemical releases. Their capabilities are especially suited to incidents in a marine environment but also include site-assessment, safety, action plan development and documentation for both inland and coastal zone incidents.

On-Scene Commander - Official who directly commands and allocates local resources and supervises all local operations at the scene.

Public Information Officer (PIO) - Official responsible for preparing and coordinating the dissemination of public information in cooperation with other responding Federal, State, and local government agencies. Also called Public Affairs Officer (PAO).

Recovery - Activity involves assistance to return the community to normal or near-normal conditions. Short-term recovery returns vital life-support systems to minimum operating standards. Long-term recovery may continue for a number of years after a disaster and seeks to return life to normal or improved levels. Recovery activities include; temporary housing, loans or grants, disaster unemployment insurance, reconstruction, and counseling programs.

Regional Response Team - Established under CERCLA and operated under the National Response Team, chaired by EPA and co-chaired by Coast Guard; composed of representatives of Federal agencies and a representative from each State in the Federal region.

Response - Activities occur immediately before, during, and directly after an emergency or disaster. They invoke lifesaving actions such as the activation of warning systems, manning the EOCs, implementation of shelter or evacuation plans, and search and rescue.

Risk Analysis - Assesses probability of damage (or injury) due to probable hazards, in light of the hazard analysis and vulnerability analysis.

SARA - Superfund Amendments and Reauthorization Act of 1986 (PL99-49-9). Extends and revises Superfund authority (in Title I & II). Title III of SARA includes detailed provisions for community planning and Right-To-Know systems.

Sect III (of SARA) - The "Emergency Planning and Community Right-to-Know Act of 1986". Specifies requirements for organizing the planning process at the State and local levels for specified extremely hazardous substances; minimum plan content; requirements for fixed facility owners and operators to inform officials about extremely hazardous substances present at the facilities; and mechanisms for making information about extremely hazardous substances available to citizens. (42 USC ., sec.1101, et. seq.-1986)

SERC - State Emergency Response Commission, designated by the Governor, responsible for establishing HAZMAT planning districts and appointing/overseeing Local Emergency Planning Committees.

Shelter - A facility to house, feed, and care for persons evacuated from a risk area for periods of one or more days. For the risk areas the primary shelter and the reception center are usually located in the same facility.

Staging Area - A pre-selected location having large parking areas such as a major shopping area, schools, etc. The area is a base for the assembly of and management of responding resources.

Standard Operating Procedures (SOPs) - Set of instructions having the force of a directive, covering features of operations which lend themselves to a definite or standardized procedure without loss of effectiveness, and implemented without a specific direct order from higher authority.

State Emergency Response Plan - Plan designated specifically for State-level response to emergencies or major disasters; which sets forth actions to be taken by the State and local governments, including those for implementing Federal disaster assistance.

State Emergency Response Team (SERT) - A team of emergency response personnel from the Department of Crime Control and Public Safety who are dispatched to the scene of a disaster in order to evaluate conditions, offer advice, and coordinate all recovery activities.

State Warning Point (SWP) - The State facility (State Highway Patrol Communications Center) that receives warnings and other emergency information over NAWAS and relays this information in accordance with current directives.

Superfund Amendments and Reauthorization Act of 1986 (SARA) - Act (PL99-499) reauthorizing the Comprehensive Environmental Response, Compensation, and Liability Act for another 5 years. Under Title III of SARA, new authorities are established for chemical emergency planning and preparedness, community right-to-know reporting, and toxic chemical release reporting.

Threshold Planning Quantity (TPQ) - The amount of an Extremely Hazardous Substance present in a facility at any one time which, when exceeded, subjects the facility to Emergency Planning Notification (sec.302).

Threshold Report Quantity (TRQ) - The amount of Hazardous Chemical present in a facility at any one time which, when exceeded, subjects the facility to the Hazardous Chemical Reporting

requirements of 40 CFR 370. The threshold reduces over several years to a base value that will be the reporting level thereafter.

Tier I or Tier II - Inventory form for reporting Hazardous Chemicals (Sec. 312) and Extremely Hazardous Substances (Sec. 302). Tier II describes more detailed chemical quantity and location(s) within the facility.

Traffic Control Points - Places along evacuation routes that are manned to direct and control movement to and from the area being evacuated.

Tropical Depression - Rotary circulation at surface, highest constant wind 38 miles per hour (33 knots).

Tropical Disturbance - A moving area of thunderstorms in the Tropics that maintains its identity for 24-hours or more. A common phenomenon in the tropics.

Tropical Storm - Distinct rotary circulation, constant wind speed ranges 39-73 miles per hour (34-63 knots).

Tornadoes - Spawned by hurricanes sometimes produce severe damage and casualties. If a tornado is reported, a warning will be issued.

Vulnerability - The susceptibility to life, property, and the environment to damage is a hazard manifests its potential.

Vulnerability Analysis - Identifies what is susceptible to damage. Should provide information on: extent of the vulnerable zone; population, in terms of size and types that could be expected to be within the vulnerable zone; private and public property that may be damaged, including essential support systems and transportation corridors; and environment that may be affected, and impact on sensitive natural areas and endangered species.

Warning Point - A facility that receives warning and other information and disseminates or relays this information in accordance with a prearranged plan.

CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

ACRONYMS AND ABBREVIATIONS

ARC - American Red Cross

ARES - Amateur Radio Emergency Service

CFR - Code of Federal Regulations

CPCS - Common Program Control Station

CPG - Civil Preparedness Guide

DCI - Division of Criminal Information (formerly Police Information Network)

DEHNR - Department of Environment, Health and Natural Resources

EAS - Emergency Alert System

EHS - Extremely Hazardous Substance

EM - Emergency Management

EMD - Emergency Management Director

EMS - Emergency Medical Services

EMT - Emergency Management Technician

EOC - Emergency Operations Center

EOP - Emergency Operations Plan

FAR - Federal Aviation Regulation

FCC - Federal Communications Commission

FEMA - Federal Emergency Management Agency

GS - General Statute

HAZMAT - Hazardous Materials

IC - Incident Commander

ICS - Incident Command System

IDLH - Immediately Dangerous to Life and Health

IEMS - Integrated Emergency Management System

LEPC - Local Emergency Planning Committee

MSDS - Material Safety Data Sheet

NAWAS - National Warning System

NCEM - North Carolina Division of Emergency Management

NCERC - North Carolina Emergency Response Commission

NCGS - North Carolina General Statutes

NCP - National Contingency Plan

NFPA - National Fire Protection Association

NOAA - National Oceanic and Atmospheric Administration

NRC - Nuclear Regulatory Commission

NRT - National Response Team

NWS - National Weather Service

OSHA - Occupational Safety and Health Act

PIO - Public Information Officer

RRT - Regional Response Team

SARA - Superfund Amendments and Reauthorization Act

SERC - State Emergency Response Commission

SERT - State Emergency Response Team

SOG - Standard Operating Guidelines

SOP - Standard Operating Procedure

SWP - State Warning Point

TLV - Threshold Limit Value

TPQ - Threshold Planning Quantity

TRQ - Threshold Reporting Quantity

USCG - United States Coast Guard

**CUMBERLAND COUNTY
EMERGENCY OPERATIONS PLAN**

**Comprehensive Glossary of Terms
For Nuclear, Biological and Chemical**

July 2004

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INTRODUCTION

Section 1 – Introduction

1.1 Background

In this era of the Sophisticated and complex, integrated battlefield, the threat of asymmetric warfare by opposing (national or terrorist) forces using Weapons of Mass Destruction (WMD) has become a very real issue. The number of nations capable of developing and possessing WMD is steadily increasing. Furthermore, the potential for the use of WMD can range from conflict, national war, or acts of terrorism and blackmail. The contingencies necessary to protect U.S. and Allied Forces have never been more important than they are today, especially in the area of design and fielding of Nuclear, Biological and Chemical (NBC) defense equipment.

Our forces must be able to survive, fight, and win in an NBC-contaminated warfare environment. While the U.S. Forces remain the best-protected forces in the world for surviving and conducting operations in an NBC-contaminated environment, NBC warfare is not an area that healthcare providers are willingly familiar with. After Operation Desert Shield/Desert Storm, it became obvious that healthcare providers knew little about the effects of NBC agents or the medical defense against them. However, through education medical professionals have learned that medical defenses are possible and effective, that NBC casualties can be saved and returned to duty, and that mortality can be minimized. There are several ongoing initiatives directed at evaluating the health hazards, integrating human systems, and executing plans on potential materials and prototype pieces of equipment.

1-2. Purpose

Our national leaders take the global NBC threat seriously. The threat of WMD is real, and the potential for devastating casualties is high for NBC agents. The U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) has developed this Glossary to serve as a tool in providing an explanation of the terms, definitions, and the technical semantics associated with the discussion of NBC equipment, agents, and their potential effects.

1-3. Scope

The NBC threat will continue in planning for future conflicts as well as domestic and International terrorism. It is critical not only for our military to understand the threat of WMD, their impact on tactical operations, and the required preparations for managing casualties but for Federal, state, and local planners; first responders; and medical professionals to understand the WMD threat to civilian populations as well. This Glossary is meant to be available to a wide audience of readers, to include those who will plan and develop new concepts and systems as well as those who may be called upon to implement plans and systems in response to the use of WMD. By including terms relevant to the diverse backgrounds of users of this document, some terms may not be applicable to a particular group of readers but may still be of benefit by enhancing understanding of the terminology associated with the different aspects of WMD threats, impacts, responses and solutions. For the ease of the reader, the guide has been broken down into separate sections for General, Nuclear, Biological, and Chemical terminology.

Section 2 – General Terms

Absorption

The process of a substance penetrating into or through another substance or medium. The uptake and entry of a substance through intact skin, eyes, or linings of the body (e.g., ingestion or once the substance has entered the lungs).

Acceptable Daily Intake (ADI)

An estimate of the dose resulting from exposure to a toxicant that is likely to be without harmful effect even if continued exposure occurs over a lifetime

Acceptable Intake for Chronic Exposure (AIC)

An estimate similar in concept to the reference dose but derived using a less strictly defined methodology. Chronic reference doses have replaced acceptable intake for chronic exposures as the USACHPPM preferred values for use in evaluating potential non-carcinogenic health effects resulting from chronic exposure to a chemical.

Acceptable Intake for Sub chronic Exposure (AIS)

An estimate similar in concept to the sub chronic reference dose but derived using a less strictly defined methodology. Sub chronic reference doses have replaced acceptable intake for sub chronic exposures as the USACHPPM preferred values for use in evaluating potential non-carcinogenic health effects resulting from sub chronic exposure to a chemical.

Accuracy

The discrepancy between the true value and the result obtained by measurement.

Acute Effects

Effects that arise quickly and have a relatively short, severe course.

Acute Exposure

Single or multiple exposure(s) to a substance for less than 24 hours.

Acute Toxicity

A term used to describe immediate and severe toxicity. Its use is associated with toxic effects that are severe (e.g., mortality) in contrast to the term "sub chronic toxicity," which is associated with toxic effects that are less severe.

Adult

An individual 18 or more years of age.

Adsorption

The adhesion of a substance to the surface of another solid or liquid.

Adverse Effect

A biochemical change, functional impairment, or pathological lesion that impairs performance and reduces the ability of the organism to respond to additional challenges.

Adverse Effect Level (AEL)

An exposure level at which there are statistically or biologically significant increases in frequency or severity of harmful effects between the exposed population and its appropriate control group.

Aerosol

A suspension of finely divided liquid or solid particles suspended in a gaseous form. They are solid or liquid substances classified as dusts, fumes, smokes, mists, and fogs according to their physical nature, particle size, and method of generation. Particle size may vary from 100 micrometers (μm) to 0.01 in diameter

Airborne Exposure Limits

These are allowable concentrations in the air for occupational and general population exposures.

Air Sampling

This sampling involves the collection and analysis of samples of air to measure its radioactivity or to detect the presence of radioactive substances, particulate matter or chemical pollutants.

American Conference of Governmental Industrial Hygienists (ACGIH)

Membership includes practitioners in industrial hygiene, occupational health, environmental health, or safety. The ACGIH has 12 technical committees for a range of topics: agriculture safety and health, air sampling instruments and procedures, bio-aerosols, biological exposure indices, computer technology, construction, industrial ventilation, infectious agents, small business, chemical substance threshold limit values, and physical agent threshold limit values. Through the efforts of the committees, ACGIH provides information and recommended practices to industrial hygienists worldwide.

<http://www.acgih.org/home.htm>

Anecdotal Data

Data based on descriptions of individual cases rather than on controlled studies.

Annual Basis or Annually

Annual basis or annually should be from the month of the current year to the same month of the following year. However, the time period will not exceed 13 months. This does not apply to items covered under the Army Maintenance Management System.

Antidote

Any substance or other agent that inhibits or counteracts the effects of a poison.

Aplasia

Lack of development of an organ or tissue.

Attack

Any act or series of acts by an enemy causing substantial damage or injury to property or persons in any manner by sabotage or by the use of bombs, shellfire, or atomic, radiological, chemical or biological means or other processes.

Availability (Operational)

A measure of the degree to which a system is either operating or is capable of operating at any time when used in its typical operational and support environment.

Blast Effects

When a high explosive detonates, the solid or liquid explosive material is converted into mostly gaseous product. These extremely hot gases expand immediately and compress the air around the charge to form a blast wave.

Btu

A British thermal unit. The amount of heat required changing the temperature of one pound of water one degree Fahrenheit at sea level.

Carcinogen

A chemical substance known to cause cancer (i.e., malignant tumors) in experimental animals and / or man. Four types of responses are generally accepted as evidence -

- a. An increase in incidence of the tumor types that occur in controls.
- b. The development of tumors earlier than in controls.
- c. The occurrence of tumor types not observed in controls.
- d. Two or more tumors of independent origin in one individual.

Carcinogen Classification Schemes

a. American Conference of Governmental Industrial Hygienists (ACGIH)

(1) *A1 - Confirmed Human Carcinogen*: The agent is carcinogenic to humans based on the weight of evidence from epidemiological studies of, or convincing clinical evidence in, exposed humans.

(2) *A2 - Suspected Human Carcinogen*: The agent is carcinogenic in experimental animals at dose levels, by route(s) of administration, at site(s), of histological type(s), or by mechanism(s) that are not considered relevant to worker exposure. Available epidemiological studies are conflicting or insufficient to confirm an increased risk of cancer in exposed humans.

(3) *A3 - Animal Carcinogen*: The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histological type(s), or by mechanism(s) that are not considered relevant to worker exposure. Available epidemiological studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

(4) *A4 - Not Classifiable as a Human Carcinogen*: There are inadequate data on which to classify the agent in terms of its carcinogenicity in humans and / or animals.

(5) *A5 - Not Suspected as a Human Carcinogen*: The agent is not suspected to be a human carcinogen on the basis of properly conducted epidemiological studies in humans. These studies have sufficiently long follow-up, reliable exposure histories, sufficiently high dosage, and adequate statistical power to conclude that exposure to the agent does not convey a significant risk of cancer to humans. Evidence suggesting a lack of carcinogenicity in experimental animals will be considered if supported by other relevant data. Substances for which no human or experimental animal carcinogenic data have been reported are assigned no carcinogen designation.

b. U.S. Environmental Protection Agency (USEPA)

(1) *Group A - Human Carcinogen*: Sufficient evidence in epidemiological studies to support causal association between exposure and cancer.

(2) *Group B - Probable Human Carcinogen*: Limited evidence in epidemiological studies (Group B1) and / or sufficient evidence from animal studies (Group B2).

(3) *Group C - Possible Human Carcinogen*: Limited to equivocal evidence from animal studies and inadequate or no data in humans.

(4) *Group D - Not Classified*: Inadequate or no human and animal evidence of carcinogenicity.

(5) *Group E - No Evidence of Carcinogenicity for Humans*: No evidence of carcinogenicity in at least two adequate animal tests in different species or in adequate epidemiological and animal studies.

c. International Agency for Research for Cancer (IARC)

(1) *Group 1 - The agent (mixture) is carcinogenic to humans*. The exposure circumstance entails exposures that are carcinogenic to humans. This category is used when there is sufficient evidence of carcinogenicity in humans. Exceptionally, an agent (mixture) may be placed in this category when evidence in humans is less than sufficient; however, there may be sufficient evidence of carcinogenicity in experimental animals and strong evidence in exposed humans that the agent (mixture) acts through a relevant mechanism of carcinogenicity.

(2) *Group 2* - This category includes agents, mixtures, and exposure circumstances for which, at one extreme, the degree of evidence of carcinogenicity in humans is almost sufficient, as well as those for which, at the other extreme, there are no human data but for which there is evidence of carcinogenicity in experimental animals. Agents, mixtures, and exposure circumstances are assigned to either Group 2A (probably carcinogenic to humans) or Group 2B (possibly carcinogenic to humans) on the basis of epidemiological and experimental evidence of carcinogenicity and other relevant data.

□ *Group 2A - The agent (mixture) is probably carcinogenic to humans.* The exposure circumstance entails exposures that are probably carcinogenic to humans. This category is used when there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals. In some cases, an agent (mixture) may be classified in this category when there is inadequate evidence of carcinogenicity in humans but sufficient evidence of carcinogenicity in experimental animals and strong evidence that the carcinogenesis is mediated by a mechanism that also operates in humans. Exceptionally, an agent, mixture, or exposure circumstance may be classified in this category solely on the basis of limited evidence of carcinogenicity in humans.

□ *Group 2B - The agent (mixture) is possibly carcinogenic to humans.* The exposure circumstance entails exposures that are possibly carcinogenic to humans. This category is used for agents, mixtures, and exposure circumstances for which there is limited evidence of carcinogenicity in humans and less than sufficient evidence of carcinogenicity in experimental animals. It may also be used when there is inadequate evidence of carcinogenicity in humans but sufficient evidence of carcinogenicity in experimental animals. In some instances, an agent, mixture, or exposure circumstance for which there is inadequate evidence of carcinogenicity in humans but limited evidence of carcinogenicity in experimental animals, together with supporting evidence from other relevant data, may be placed in this group.

(5) *Group 3 - The agent (mixture of exposure circumstance) is not classifiable as to its carcinogenicity to humans.* This category is used most commonly for agents, mixtures, and exposure circumstances for which the evidence of carcinogenicity is inadequate in humans and inadequate or limited in experimental animals. Exceptionally, agents (mixtures) for which the evidence of carcinogenicity is inadequate in humans but sufficient in experimental animals may be placed in this category when there is strong evidence that the mechanism of carcinogenicity in experimental animals do not operate in humans. Agents, mixtures, and exposure circumstances that do not fall into any other group are also placed in this category.

(6) *Group 4 - The agent (mixture) is probably not carcinogenic to humans.* This category is used for agents or mixtures for which there is evidence-suggesting lack of carcinogenicity in humans and in experimental animals. In some instances, agents or mixtures for which there is inadequate evidence of carcinogenicity in humans but evidence suggesting lack of carcinogenicity in experimental animals, consistently and strongly supported by a broad range of other relevant data, may be classified in this group.

Carcinogenicity

The potential for development of cancer in a living individual. A cancer is a malignant tumor resulting from a change in the normal growth and development of cells. (Cancerous tumors have the tendency to invade surrounding tissue and spread to other sites in the body.)

Casualty

Any person who is lost to the organization by reason of having been declared dead, wounded, injured, diseased, interned, captured, retained, missing, missing in action, beleaguered, besieged, or detained.

CBRNE

Chemical, Biological, Radiological, Nuclear, and Explosives. This term is used in reference to Homeland Security Issues. (See Homeland Security.)

Ceiling Limit

An airborne concentration of a substance that should not be exceeded.

Ceiling Value

Normally refers to the maximum exposure concentration at any time, for any duration. Practically, it may be an average value over the minimum time required to detect the specified concentration.

Centers for Disease Control and Prevention (CDC)

The CDC is recognized as the lead Federal agency for protecting the health and safety of people, at home and abroad, providing credible information to enhance health decisions, and promoting health through strong partnerships. The CDC serves as the national focus for developing and applying disease prevention and control, environmental health, and health promotion and education activities designed to improve the health of the people of the U.S. (See the Department of Health and Human Services (DHHS).) <http://www.cdc.gov/aboutcdc.htm>

Central Nervous System (CNS)

The part of the human nervous system that consists of the brain and spinal cord. Sensory impulses are transmitted and motor impulses pass out. The CNS supervises and coordinates the activity of the entire nervous system.

Cerebral Anoxia

Absence of oxygen supply to the brain despite adequate perfusion of the tissue by blood.

ChE

Cholinesterase. This is an enzyme that catalyzes the hydrolysis of acetylcholine to choline (a vitamin) and acetic acid.

ChE50

The dosage producing 50 percent ChE inhibition in the given population. (Note that the ChE50 is not a dosage that produces this effect in 50 percent of the given population.)

Chemical Abstracts Service (CAS)

CAS is a producer of comprehensive databases of chemical information. Their principal databases, Chemical Abstracts (CA) and REGISTRY, now include about 15 million document records and more than 23 million substance records respectively. CAS also produces databases of chemical reactions, commercially available chemicals, listed regulated chemicals and compounds claimed in patents.

Chemical / Biological Incident Response Force (CBIRF)

This is a Marine strategic organization. It is manned, trained, and equipped to counter the growing chemical / biological terrorist threat. This response force will respond to chemical or biological incidents worldwide, when directed by the National Command Authority, to assist local civilian and military agencies in order to assist the on-scene commander in providing initial post-incident consequence management. This Force deploys to incident locations by the most expeditious means possible, where they will coordinate initial relief efforts, provide security and area isolation at the affected site; detection, identification and decontamination; expert medical advice and assistance to local medical authorities; and service support assistance as required.

Chemical Stockpile Emergency Preparedness Program (CSEPP)

The U.S. Congress directed that the Army destroy certain kinds of chemical weapons stockpiled at eight U.S. Army installations within the continental U.S. The CSEPP was started in 1988 to enhance the emergency preparedness of the communities around the chemical stockpile (until the stockpile is destroyed) by developing emergency plans and providing chemical accident response equipment, training and warning systems. The CSEPP includes Army, Federal Emergency Management Agency (FEMA), state and local emergency management officials. <http://www.fema.gov/ptc.csepp1.htm>

Chronic Effects

These are effects that persist over a long period of time. These effects may arise after months or years, may have a long course ranging from relatively mild to severe, or may arise immediately after exposure.

Chronic Exposure

These are multiple or continuous exposures occurring over an extended period of time or a significant fraction of an individual's lifetime.

Chronic Reference Dose (RfD)

An estimate (with uncertainty spanning perhaps an order of magnitude or greater) of a daily exposure level for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of harmful effects during a lifetime. Chronic RfDs are specifically developed to be protective for long-term exposure to a compound (as a Superfund program guideline, seven years to lifetime).

Chronic Study

A toxicity study designed to measure the effects (toxic) of chronic exposure to a chemical.

Chronic Toxicity

Effects that persist over a long period of time whether or not they occur immediately or are delayed. The term "chronic toxicity" is often confused with the term of chronic exposure and is often used to describe delayed toxicity.

cm

Centimeter

Code of Federal Regulations (CFR)

The Code is a consolidation and codification by subject matter of the general and permanent laws of the U.S.

Collective Protection

A shelter, with filtered air, that provides a contamination free working environment for selected personnel and allows relief from continuous wear of protective gear.

Combat Developer (COMDEV)

The command or organization responsible for formulating concepts doctrine, organization, materiel objectives, requirements, and user tests and evaluations.

Compound

A chemical combination of two or more elements combined in a fixed and definite proportion by weight.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

This act was enacted into law in 1980, and its follow-up amendment, the Superfund Amendments and Reauthorization Act (SARA), was passed in 1986. These two laws establish a series of programs for the cleanup of hazardous waste disposal and spill sites nationwide CERCLA and SARA also establish cleanup programs for inactive and abandoned hazardous waste sites. CERCLA and SARA are administered by the USEPA in cooperation with individual states and site owners. CERCLA also enabled the revision of the National Contingency Plan (NCP).

<http://www.epa.gov/superfund/action/law/cercla.htm>

Concentration (C)

The total quantity of substance present in a given unit volume (of gas or liquid). It may be expressed in any unit or mass per unit of volume such as milligrams per cubic meter (mg/m³), grams per Liter (g/L), or as volume per volume such as parts per million (ppm).

Congestion

The excessive or abnormal accumulation of blood in a tissue or organ.

Contaminant

An impurity in water, soil, materials, etc.

Contaminate

To make impure by contact or mixture into water, soil, materials, etc.

Contamination

Any deposit, adsorption, or absorption of radioactive, biological, or chemical substances on and by structures, areas, personnel, objects, soil, and water. Food and / or water made unfit for human or animal consumption by the presence of radioactive, biological, or chemical substances.

Continuous Exposure Guidance Level (CEGL)

The ceiling concentrations designed to avoid adverse health effects, either immediate or delayed, of more prolonged exposures and to avoid degradation in growth performance that might endanger the objectives of a particular mission as a consequence of continuous exposure for up to 90 days.

Convection

The transfer of heat through a liquid or gas by the actual movement of the molecules.

Convulsion

An abnormal violent and involuntary contraction or series of contractions of the voluntary muscles.

Coronary

Pertaining to the heart.

Criterion

A standard that represents the best scientific estimate of an environmental concentration of a contaminant corresponding to a given level of hazard, which, in the case of non-cancer toxicity, represents a level that is not expected to cause additional health risk.

Ct

This means concentration times time. Note that Ct = 200, a 2-minute exposure to a concentration of 100 mg/m³ (Ct = 200 milligram-minutes per cubic meter (mg-min/m³)), does NOT necessarily produce the same toxicological effects as a 50-minute exposure to a concentration of 4 mg/m³ (Ct = 200 mg-min/m³).

Ct Value

A measure of vapor or gas exposure by inhalation. It is a product of the concentration usually expressed in mg/m³ and duration of exposure (t) in minutes. The resulting (and somewhat confusing units) is mg-min/m³. It is important to recognize that this is not simple algebra; predictions of toxic effects should never be extrapolated more than twice, or less than half, known toxic exposure data. (Exposure to 1 mg/m³ for 20 minutes; 2 mg/m³ for 10 minutes; or 4 mg/m³ for 5 minutes is all valid extrapolations of 2-minute exposure data. All three equate to a Ct of 20 mg-min/m³.)

Cutaneous

Pertaining to the skin.

Cytokine

A non-antibody protein released by one cell population that acts as an intercellular mediator on another cell population(s).

Data Quality Objectives

A quantitative or qualitative statement that clarifies study, technical, and quality objectives, defines the appropriate type of data, and specifies potential decision errors that will be used as the basis for establishing the quality and quantity of data needed to support decisions.

Data Quality Assessment

The scientific and statistical evaluation of data to determine if data are of the right type, quality, and quantity to support the intended use.

Decontaminate

To breakdown, neutralize, or remove a radioactive, chemical, or biological substance that poses a hazard to personnel or equipment.

Decontamination

Decreasing the amount of chemical agent on any person, object or area by absorbing, neutralizing, destroying, ventilating or moving chemical agents. Decontamination procedures are critical during: a. Response Phase: to eliminate direct and immediate threats to human life. b. Recovery Phase: to eliminate indirect and less immediate threats to human life (such as cross-contamination).

Department of Health and Human Services (DHHS)

The DHHS is the U.S. government's principal agency for protecting the health of all Americans and providing essential human services through over 300 different programs. Operating divisions with DHHS include the following:

- a. National Institutes of Health (NIH), a world-class medical research organization, supporting some 35,000-research projects nationwide in diseases like cancer.
- b. The CDC is the lead Federal agency responsible for protecting the health of the American public through monitoring of disease trends, investigation of outbreaks, health and injury risks, foster a safe and healthful environments, and implementation of illness and injury control and prevention interventions.
- c. The Agency for Toxic Substances and Disease Registry (ATSDR) which seeks to prevent exposure to hazardous substances from waste sites by conducting public health assessments, health studies, surveillance activities, and health education training in communities around waste sites on the USEPA's National Priorities List. ATSDR also has developed toxicological profiles of hazardous chemicals found at these sites.
<http://www.os.dhhs.gov/>

Deposition Probability

The fraction of the activity or mass of an inhaled aerosol that is deposited in a particular region of the lung.

Dermal Exposure

Exposure to or by absorption through the skin. The inflammation of the skin from any cause.

Desquamation

The shedding of epithelial elements, chiefly of the skin, in scales or small sheets; exfoliation.

Detection

The discovery of the existence of a substance/contaminant.

Developmental Reference Dose (RfDdt)

An estimate (with uncertainty spanning perhaps an order of magnitude or greater) of an exposure level for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of developmental effects. Developmental reference doses are used to evaluate the effects of a single exposure event.

Differential Pressure

To differentiate in pressure between two points of a system, such as between the inlet and the outlet of a pump.

Diffusion

The process of spontaneous intermixing of different substances due to molecular motion that tends to produce uniformity of concentration.

DNA (Deoxyribonucleic Acid)

A complex sugar-protein polymer of nucleoprotein that contains the complete genetic code for every enzyme in the cell. It occurs as a major component of the genes, which are located on the chromosomes in the cell nucleus.

Dosage

The amount of substance administered (or received) per body weight.

Dose

The amount of substance or energy that is taken into or absorbed by the body; the amount of substance, radiation, or energy absorbed in a unit volume, an organ, or an individual.

Dose Response

The characteristics of exposure to a substance and the spectrum of effects.

Dose-Response Evaluation

The process of quantitatively evaluating toxicity information and characterizing the relationship between the dose of a contaminant administered or received and the incidence of adverse health effects in the exposed population. From the quantitative dose-response relationship, toxicity values are derived that are used in the risk characterization step to estimate the likelihood of adverse effects occurring in humans at different exposure levels.

Dose-Response Relationship

The relationship between—

- a. The dose often based on an "administered dose" (i.e., exposure) rather than absorbed dose.
- b. The extent of toxic injury produced by that chemical. The response can increase with greater doses and can be expressed either as the severity of injury or proportion of exposed subjects affected.

Dust

Any solid particulate matter from 1 to 150 microns (μ) in diameter.

Dry Deposition

Depositing onto surfaces by settling out of particles, as opposed to droplets (liquid); also by absorption from the vapor phase.

ECt50 (Median Exposure Concentration)

The dosage causing a specifically defined effect in 50 percent of the given population. The route of exposure can be either inhalation or percutaneous. Similarly, the ECt05, ECt16, ECt84, and ECt95 are the dosages causing that defined effect in 5 percent, 16 percent, 84 percent, and 95 percent of the given population, respectively.

ED50 (Median Effective Dose)

The dose of a substance that produces a given, defined therapeutic or toxic effect in 50 percent of the exposed population. NOT A 50 PERCENT EFFECT. This is a quantal (yes/no) determination, but it can be applied to graded effects if they are defined in a quantal manner (e.g., the dose of drug

necessary to decrease diastolic blood pressure by 10 millimeters (mm) mercury in 50 percent of the subjects). Under these circumstances, it is imperative that the assumptions and definition of "effect" be stated with the dose.

Edema

The presence of abnormally large amounts of fluid in the intercellular tissue.

Element

One of the 103 known chemical substances that cannot be broken down further without changing its chemical properties. Some examples include hydrogen, nitrogen, gold, lead, and uranium.

Elimination

Removal of material from the body via urine, feces, sweat, or exhalation. Excretion usually refers to elimination via urine or feces.

Embryo / Fetus

The development of a human organism from conception until the time of birth. More accurately; embryo: 2 week (when implantation occurs) – 8 week; fetus: end of 8-week term.

Emergency

A rare and unexpected situation with potential for significant loss of life, property, or mission accomplishment.

Emergency Disposal

Immediate transportation and disposal of chemical agents/munitions when the senior explosive ordnance disposal person determines the health or safety of any person is clearly endangered.

Emergency Exposure Guidance Level (EEGL)

A concentration of a substance in air (as a gas, vapor, or aerosol) that will permit continued performance of specific tasks during rare emergency conditions, lasting for periods of 1 to 24 hours. This should not be used for planned exposures because these guidance levels are neither safe nor hygienic.

Emergency Phase

As used by FEMA and the USEPA, the initial phase of response actions, during which actions are taken in response to a threat of release or a release in progress. Short-term protective actions, such as sheltering and evacuation, may be taken during this phase to mitigate the hazard from immediate exposure to the passing plume.

Enclosed Area

Any operating building, shed, magazine, railroad car, truck, or trailer that sufficiently restricts natural ventilation to allow possible accumulation of agent vapors.

Endpoint

A response measure in a toxicity study.

Environment

The external surroundings and influences.

Estimate

A numerical value calculated from data. The average is a numerical value of the quantity under measurement. Other parameters, such as the standard deviation, are often estimated from the data.

Evacuation

The urgent removal of people from an area to avoid or reduce high-level, short-term exposure, usually from the plume or from deposited activity. Evacuation may be a preemptive action taken in response to a facility condition rather than an actual release.

Evaporation

The change of a liquid into a gas at any temperature below its boiling point.

Exposure

The amount of chemical that enters the body by some route for a specified frequency and duration.

Exposure Assessment

A process that takes into account the chemical and physical properties of the substance, the effect the substance produces, the exposure frequency and duration, and the affected subject.

Exposure Duration

The length of time that a receptor population is exposed to a contaminant.

Exposure Routes

The major courses of exposure include ingestion, inhalation, and absorption through the skin.

Extrapolation

An estimate of response or quantity at a point outside the range of the experimental data. Also refers to the estimation of a measured response in a different species or by a different route than that used in the experimental study of interest (i.e., species to species, route to route, acute to chronic, high to low).

Extremity

A bodily limb such as hand, elbow, arm below the elbow, foot, knee, or leg below the knee.

Federal Emergency Management Agency (FEMA)

The mission of FEMA is to reduce loss of life and property and protect the nation's critical infrastructure from all types of hazards through a comprehensive, risk-based, emergency management program of mitigation, preparedness, response and recovery.

<http://www.fema.gov/about>

Fertility

The ability to reproduce.

Fever

Abnormally high body temperature, characterized by marked increase of temperature, acceleration of the pulse, increased tissue destruction, restlessness, and sometimes delirium.

Field Operations

Activities conducted outdoors or outside of man-made enclosures or structures which contain built-in alarms or engineered chemical agent controls. Short-term operations in storage structures are also considered field operations.

First Aid

Any one-time treatment, and any follow-up visit for the purpose of observation or minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care. Such one-time treatment and follow-up visit for observation, is considered first aid, even though provided by a physician or registered medical professional personnel.

g

gram.

g/L

grams per Liter

Gas

A state of matter in which the material is compressible and has a low density and viscosity.

Genetic Effect

An effect in a descendant resulting from the modification of genetic material in a parent.

Geneva Protocol

“Geneva Protocol for the Prohibition of the Use in War of Asphyxiating Gases and Poisonous or other Bacteriological Methods of Warfare” of 17 June 1925; first diplomatic attempt to limit biological warfare; ratified by the USA in 1975. <http://www.state.gov/www/global/arms/treaties/geneva1.html#1>

Germ Cell

A cell from which another organism can develop; a sex cell.

Global Positioning System (GPS)

A high-precision satellite navigation service created by the U.S. military.

Granulocytopenia

A symptom complex consisting of a marked decrease in the number of circulating white blood cells, with lesions of the throat and mucous membranes.

Hazardous Materials

Any material that is flammable, corrosive, an oxidizing agent, explosive, toxic, poisonous, etiological, radioactive, nuclear, unduly magnetic, a chemical agent, biological research material, compressed gases, or any other material that, because of its quantity, properties, or packaging, may endanger human life or property.

Health Hazard

An existing or likely condition, inherent to the operation or use of materiel, that can cause death, injury, acute or chronic illness, disability, or reduced job performance of personnel by exposure to acoustical energy, biological substances, chemical substances, oxygen deficiency, radiation energy, shock, temperature extremes, trauma, and vibration.

Health Hazard Assessment (HHA)

The application of biomedical knowledge and principles to document and quantitatively determine the health hazards of systems. This assessment identifies, evaluates, and recommends solutions to control the risks to the health and effectiveness of personnel who test, use, or service Army systems. This assessment includes the evaluation of hazard severity, hazard probability, risk assessment, and operational constraints; the identification of required precautions and protective devices; and the training requirements.

Health Hazard Assessment Report (HHAR)

The formal Army documentation for a given system, the assessment of health hazard issues and risks, the recommendation of preventive or control actions, and the recommendation of training requirements.

Health Hazard Domain Report (HHDR)

This report is one of the seven domain reports made under the Army Manpower and Personnel Integration (MANPRINT) Program. It identifies potential health hazards that may be associated with the development, acquisition, operation, and maintenance of Army systems. This identification will be done early in the system's life cycle to preserve and protect the humans who will—

- a. Operate, maintain, and support the equipment.
- b. Enhance total system effectiveness.
- c. Reduce system retrofit needed to eliminate health hazards.
- d. Reduce personnel compensation.

Data from this report are entered into the MANPRINT Program Report and the System Manpower and Personnel Integration Program Management Plan (SMMP).

Health Standards

Published documents specifying conditions of acceptable risk for individual health hazards. These can include medical exposure limits, health conservation criteria, and materiel design standards.

Heat Cramps

An illness due, in part, to excessive loss of salt during sweating resulting in painful muscle spasms in the extremities, back and abdomen.

Heat Exhaustion

An illness due to circulatory failure in which venous blood returned to the heart is significantly reduced; fainting may result. This failure is caused because the individual's blood supply is not adequate to serve both heat regulation and other bodily needs.

Heat Strain

The natural, physiological response reaction of the body to the application of heat stress.

Heat Stress

The relative amount of thermal strain from the environment.

Heat Stroke

An illness due to the body temperature reaching a level where sweating stops. The body temperature can then rise to critical levels causing tissue damage and death.

Homeland Security

A national strategy to strengthen protections against terrorist threats or attacks in the U.S. (See Office of Homeland Security.)

<http://www.whitehouse.gov/homeland>

Host

A living animal or plant that harbors or nourishes another organism.

Hypotension

Abnormally low blood pressure.

Ileus

Obstruction of the intestines.

Immediate versus Delayed Toxicity

The immediate effects that occur or develop rapidly after a single administration of a substance; delayed effects are those that occur after the lapse of some time. These effects have also been referred to as acute and chronic, respectively.

Immediately Dangerous to Life or Health (IDLH)

The maximum concentration from which, in the event of respiratory failure, one could escape within 30 minutes without a respirator and without experiencing any escape-impairing (for example, severe eye irritation) or irreversible health effects (Department of Health and Human Services, National Institute for Occupational Safety and Health (NIOSH) Publication No. 90- 117). (Respiratory protection and sufficient oxygen to support life (at least 16 percent by volume) are addressed in Code of Federal Regulations, Part 1910.134, Title 29 e (3) and g (5).)

Incapacitate

To render a subject unable to perform normal activities or tasks.

Incapacitating Agent

A chemical that produces a temporary, disabling condition that persists for hours to days after exposure has ceased. Complete recovery of casualties is expected without medical treatment.

Incapacitating Dose

The concentration / dose that renders an individual unable to perform normal activities or tasks.

Incapacitation

Considered to be "moderate-to-severe"-unless otherwise specified. It may include prostration and convulsions.

Incidence

The number of new cases of a disease within a specified period of time or dose.

Incidence Rate

The rate new cases of a disease or condition develop within a specified period of time or dose.

Incubation Period.

The time required between initial contact with an infectious agent and the appearance of the first clinical symptoms of disease.

Individual

Any human being.

Individual Risk

The probability that a person will experience an adverse effect. This is identical to population risk unless specific population subgroups can be identified that have different (higher or lower) risks.

Inflammation

Reaction of tissues to injury; characterized by pain, heat, redness, or swelling of the affected parts.

Initial Response Force (IRF)

An emergency action organization tasked to provide first response to a chemical accident/incident at an installation assigned a chemical surety mission or in the public domain. The IRF performs the following functions:

- a. Rescue operations.
- b. Accident site security.
- c. Firefighting.
- d. Initiation of appropriate explosive ordnance material procedures.
- e. Radiation monitoring.
- f. Establishment of command, control, and communication.
- g. Public affairs activities.

Injury

A specific impairment of body structure or function caused by an outside agent or force that may be physical or chemical.

Intake

Quantity of material introduced into the body by inhalation, by ingestion, or through the skin.

International Agency for Research for Cancer (IARC)

The mission of IARC is to coordinate and conduct research on the causes of human cancer, the mechanisms of carcinogenesis, and to develop scientific strategies for cancer control. The Agency is involved in both epidemiological and laboratory research and provides scientific information through publications, meetings, courses, and fellowships. <http://www.iarc.fr/>

In-vitro

In an artificial environment, referring to a process or reaction occurring therein, as in a test tube or culture media.

In-vivo

In the living body, referring to a process or reaction occurring therein.

Irritant

A substance that produces an irritating effect when it contacts skin, eyes, nose, or respiratory system.

kg

kilogram.

km

kilometers.

Laboratory

A location or facility where engineering controls include a glove box or laboratory type ventilation hood and the quantities of chemical agents in use at one time are small, normally not exceeding one Liter. These operations may include research and development, production/acceptance testing, sample analysis and evaluation, limited detoxification, animal testing, or other small-scale agent operations.

Latent Period

A period of seeming inactivity.

LC50 (Median Lethal Concentration)

A dosage of a substance by inhalation that results in death in 50 percent of the exposed population.

LD50 (Median Lethal Dose)

A dose of a substance that produces death in 50 percent of the exposed population usually as a single dose, with the route of exposure specified.

Liter

A metric unit of volume equal to 1000 cubic centimeters (cm³) or 1.056 quart.

Local versus Systemic Toxicity

Local effects occur at the site of entry (e.g., lungs, stomach) of a toxicant into the body; systemic effects are elicited after absorption and distribution of the toxicant from its entry point to a distant site.

Lowest-Effect Level (LEL)

The lowest exposure level at which there are statistically or biologically significant increases in frequency or severity of effects between the exposed population and its appropriate control group.

Lowest-Observed Adverse Effect Level (LOAEL)

The lowest exposure level at which there are statistically or biologically significant increases in frequency or severity of adverse effects between the exposed population and its appropriate control group.

Malformation

A birth defect; an abnormal structure or form.

“Man”

An individual assumed to be a healthy, 18-35 year old, 70 kg adult male.

Manpower and Personnel Integration (MANPRINT)

The process of integrating the full range of manpower, personnel, training, human engineering, health hazard, system safety, and soldier survivability to improve individual performance and total system performance throughout the entire system development and acquisition process.

Materiel Developer (MATDEV)

The command or organization responsible for developing or modifying materiel.

Maximum Contaminant Level (MCL)

The maximum permissible level of a contaminant in water that is delivered to the consumer.

Medical Contaminant Criteria

The varying amounts of air contaminants and duration of exposure causing specific adverse effects to health.

meter (m)

A metric unit of length equal to 39.37 inches.

mg/kg

milligram/kilogram.

mg/m³

milligrams per cubic meter.

mg-min/m³

milligram-minutes per cubic meter. It is a product of the concentration of a substance in milligrams per cubic meter times the exposure time in minutes.

micron (□)

A unit of measurement equal to one-millionth (10⁻⁶) of a meter.

milligram (mg)

A metric unit of mass equal to one thousandth of a gram, 1 x 10⁻³ gram.

milliliter (mL)

A metric unit of liquid capacity equal to 0.061 cubic inch.

□g

microgram, 1 x 10⁻⁶ g of 1 x 10⁻³ mg.

□m

micrometer(s)

Microsecond

A one-millionth part of a second. (See Curie, Section 3.)

Military Occupational Specialty (MOS)

A grouping of duty positions possessing such a close occupational or functional relationship that an optimal degree of interchangeability among persons so classified exists at any given skill level.

Military Standard (MIL-STD)

Standards and specifications, also known as MIL-SPEC, developed to specify military-unique requirements whether it is for parts, materials, processes, interfaces, data, or tests.

Milli

A prefix that divides a basic unit by 1000.

Minor

An individual less than 18 years of age.

Minute Volume (MV)

The amount of air expelled from the lungs in a minute that is assumed to be 15 L—unless otherwise stated. This amount represents mild activity.

Mission-Oriented Protective Posture (MOPP)

A flexible system that provides maximum nuclear, biological, and chemical protection for the individual with the lowest risk possible and still maintains mission accomplishment. Typically used to refer to chemical response personnel's personal protection equipment.

Mission Specific Protection

Measures for important units, systems, and functions so that the military units can continue to work with their primary tasks to the greatest extent possible. The aim is that the defense forces will retain their operative ability even after an NBC attack.

Mist

The liquid particles up to 100 μ m in diameters.

mm

millimeter.

Molecule

A group of atoms held together by chemical forces. The smallest unit of a compound that can exist by itself and retain all its chemical properties.

Morbidity

The ratio of sick to well individuals in a community; sick rate.

Mortality

The ratio of people who die to those who survive exposure to nuclear/radiological, biological, or chemical agents; death rate.

Mutagen

Anything that can cause a change (mutation) in the genetic material of a living cell.

Mutagenicity

The cause of changes in cellular genetic material that may be passed on to subsequent generations of cells. When these changes occur in germ cells (i.e., sperm or ova), the mutations may be passed on to subsequent generations.

National Command Authority (NCA)

The U.S. President and the Secretary of Defense or their duly deputized alternates or successors, hold this nuclear weapons release authority for the U.S. Armed Forces.

<http://www.periscope.ucg.com/terms/t0000206.html>

National Contingency Plan (NCP)

The set of regulations that implement CERCLA and direct responsibility and procedures for cleanup of hazardous material spills. The regulations are codified at Code of Federal Regulations, Part 300, Title 40, et seq. <http://www.epa.gov/oilspill/ncpover.htm>

National Institute for Occupational Safety and Health (NIOSH)

NIOSH was established by the Occupational Safety and Health Act of 1970. NIOSH is part of the CDC and is the only Federal institute responsible for conducting research and making

recommendations for the prevention of work-related illnesses and injuries.

<http://www.cdc.gov/niosh/homepage.html>

Nausea

Tendency to vomit; sickness of the stomach.

NBC

Nuclear, Biological and Chemical. This terminology is used in deployment issues.

Nerve Agent

A toxic substance that inhibits the cholinesterase enzyme and, therefore, elevates the acetylcholine level in the body. Symptoms include pinpoint pupils, difficulty focusing, headache, and secretion from the skin and mucous membranes. Nausea, vomiting, and loss of bladder and bowel control lead to severe dehydration. These lead to general muscular fasciculation followed by violent convulsions, respiratory arrest, and death. (See Section 5, Nerve Agent.)

No-Observed Adverse Effects Level (NOAEL)

An exposure level at which there are no statistically or biologically significant increases in the frequency or severity of adverse effects (to tissue, cells, organs, etc.) between the exposed population and its appropriate control (some effects may be produced at this level, but they are not considered as adverse, nor precursors to specific adverse effects). It is based on the highest exposure without adverse effect.

No-Observed Effects Level (NOEL)

An exposure level at which there are no statistically or biologically significant increases in the frequency or severity of any effect (to tissue, cells, organs, etc.) between the exposed population and its appropriate control.

North Atlantic Treaty Organization (NATO)

This organization is to enhance the stability, well-being and freedom of its members through a system of collective security. Members of the alliance agree to defend one another from attack by other nations. The alliance includes Belgium, Canada, Denmark, France, the United Kingdom, Iceland, Italy, Luxembourg, The Netherlands, Norway, Portugal, the United States, Greece, Turkey, the newly unified Germany, Hungary, Poland, and the Czech Republic. <http://www.nato.int/>

Nuclear, Biological, and Chemical (NBC) Contamination

The deposition and / or absorption of residual radioactive material or biological or chemical agents on or by structures, areas, personnel, or objects.

Nuclear, Biological, and Chemical (NBC) Survivability

The capability of a system (and its crew) to withstand an NBC-contaminated environment and relevant decontamination without losing the ability to accomplish the assigned mission. An NBC-contamination survivable system is hardened against NBC contamination and decontaminants. This system can be decontaminated and is compatible with individual protective equipment.

Occupational Safety and Health Administration (OSHA)

The mission of OSHA is to save lives, prevent injuries and protect the health of America's workers. OSHA and its state partners have thousands of inspectors, plus complaint discrimination investigators, engineers, physicians, educators, standards writers, and other technical and support personnel spread over more than 200 offices throughout the country. This staff establishes protective standards, enforces those standards, and reaches out to employers and employees through technical assistance and consultation programs. <http://www.osha.gov/comp.links.html>

Office of Homeland Security

President George W. Bush established this office on 8 October 2001. Its mission is to develop and coordinate the implementation of a comprehensive national strategy to secure the U.S. from terrorist

threats or attacks. The Office will coordinate the executive branch's efforts to detect, prepare for, prevent, protect against, respond to, and recover from terrorist attacks within the U.S.
<http://www.whitehouse.gov/homeland>

Overpressure

The transient pressure that is created by the shock wave of an explosion and exceeds the ambient pressure; expressed in pounds per square inch.

Parameter

The property or quantity that measurements are expected to evaluate.

Parasite

A plant or animal that lives upon or within another living organism at whose expense it obtains some advantage.

Particle Size-Selective-Threshold Limit Values (PSS-TLVs)

Expressed in three forms—

- a. Inhalable Particulate Mass-TLVs (IPM-TLVs): for those materials that are hazardous when deposited anywhere in the respiratory tract. Particles with aerodynamic diameters up to 100 μm are of interest.
- b. Thoracic Particulate Mass-TLVs (TPM-TLVs): for those materials that are hazardous when deposited anywhere within the lung airways and the gas-exchange regions. Particles with aerodynamic diameters up to 25 μm are of interest.
- c. Respirable Particulate Mass-TLVs (RPM-TLVs): for those materials that are hazardous when deposited in the gas-exchange region. Particles with aerodynamic diameters up to 10 μm are of interest.

Particulate

A particle of solid or liquid matter. Particle aerodynamic diameters of biological interest range up to 100 μm .

Parts per million (ppm)

Parts (molecules) of a substance contained in a million parts of air.

Pathogenic Organism

Any disease-producing organism.

Perceived Threat

Any possible danger that is experienced by a person subjectively and out of proportion to the real threat or physical danger.

Percutaneous Exposure

The absorption of a contaminant through the unbroken skin.

TLV

Is a registered trademark of the American Conference of Governmental Industrial Hygienists, Cincinnati, Ohio. Use of trademarked name does not imply endorsement by the U.S. Army but is intended only to assist in identification of a specific product.

Periodic Table

An arrangement of chemical elements in order of increasing atomic number. Elements of similar properties are placed one under the other, yielding groups or families of elements. Within each group, there is a variation of chemical and physical properties, but in general, there is a similarity of chemical behavior within each group.

Permissible Exposure Limit (PEL)

Time-weighted average concentrations that must not be exceeded during any 8-hour work shift of a 40-hour workweek.

Personal Protective Equipment (PPE)

The combination of clothing and respirator designed to protect the wearer from exposure to chemical and biological warfare agents.

Personnel

Military and civilian individuals with the abilities, skill level, and grades required to operate, maintain, and support a system in peacetime and wartime. It refers to the Army's ability to provide qualified people of specific aptitudes, experience, and other human characteristics needed to use, operate, maintain, and support Army systems or items. It requires a detailed assessment of the aptitudes that soldiers must possess in order to complete training and to use, to operate, and / or to maintain the system successfully.

Pico

A prefix that divides a basic unit by one trillion.

Population

A group of items / persons / animals belonging to a well-defined class from which items / persons / animals are taken for measurement.

Potency

The degree to which an agent can cause strong or toxic effects.

Preliminary Hazard Analysis (PHA)

The initial effort in hazard analysis during the system design phase or the programming and requirements development phase for facilities acquisition. It may also be used on an operational system for the initial examination of the state of safety. The purpose of the PHA is not to affect control of all risks but is to fully recognize the hazardous states with all of the accompanying system applications.

Preliminary Hazards List (PHL)

This list provides the MATDEV with a list of hazards that may require special safety design emphasis or hazardous areas where in-depth analyses need to be done. The MATDEV may use the results of the PHL to determine the scope of follow-on hazard analyses.

Pressor

Tending to increase blood pressure.

Prevalence

The total number of cases of a disease existing in a population at a certain time in a designated area.

Prodrome

A premonitory symptom or precursor; a symptom indicating the onset of a disease.

Prodromal Effects

The forewarning symptoms of more serious health effects.

Properties

The characteristics by which a substance may be identified. Physical properties describe its state of matter, color, odor, and density; chemical properties describe its behavior in reaction with other materials.

Pulmonary

Pertaining to the lungs.

Quarter

A period of time equal to one-fourth of the year observed by the licensee (approximately 13 consecutive weeks), providing that the beginning of the first quarter in a year coincides with the starting date of the year and that no day is omitted or duplicated in consecutive quarters.

Range

The difference between the largest and smallest values in a collection of measurements.

Readiness

Phase of preparations to deal with an accident or incident.

Reaction

Any process involving a chemical or nuclear change.

Reconstruction

Rebuilding and replacing destroyed structures and utilities to approximate the pre-disaster condition.

Recovery Phase

a. The period following the response when immediate threat to human life has passed and general evacuation has ceased. This phase includes—

(1) Recovery: Recovery decontamination refers to the actions taken to restore an affected area to its pre-emergency condition. Thus, it refers to the process of reducing exposure rates and concentrations in the environment to acceptable levels for unconditional occupancy or use after the emergency phase of an accident or incident. Recovery differs from reentry in that recovery encompasses the efforts and resources needed to return the affected area to its pre-accident condition. Recovery includes both short- and long-term activities. Short-term recovery returns vital systems to minimum operating standards, seeks to restore critical services to the community, and provides for the basic needs of the public. Long-term recovery focuses on restoring the community to its normal, or improved state of affairs and on returning life to normal or improved levels. The recovery period is also an opportune time to institute mitigation measures, particularly those related to the recent emergency.

(2) Reentry: Reentry deals with persons entering an affected (i.e., contaminated or potentially contaminated) area following a release. The terms controlled reentry, restricted reentry, occupational reentry, and emergency reentry refer to the temporary, short-term readmission of persons (primarily emergency workers) into a restricted zone for the purpose of performing specific tasks (such as monitoring teams). The terms uncontrolled reentry, unrestricted reentry, and general reentry are used in the context of uncontrolled, permanent re-access referring to those provisions leading up to unlimited public access, reoccupation, or use of previously restricted zones after the hazards have been reduced to acceptable levels or have been declared "clean."

(3) Restoration: Removal and decontamination of all NBC agents, removal of any rubble, and emergency repair of structures and facilities. The culmination of these activities is reestablishment of major utilities and services and the return of social and economic activities to near-normal levels. The terms *recovery* and *restoration* have been used in combination to refer to the entire group of activities undertaken to prepare a previously contaminated and restricted area for unlimited reoccupation and / or use by the public.

Reference Concentration (RfC)

An estimate (with uncertainty spanning perhaps an order of magnitude) of a daily inhalation exposure to the human population (including sensitive subgroups) that is likely to be without appreciable risk of deleterious effects during a lifetime.

Reference Dose (RfD)

The toxicity value for evaluating non-carcinogenic effects resulting from exposure at Superfund sites. See specific entries for chronic reference dose, subchronic reference dose, and developmental reference dose. The acronym RfD, when used without other modifiers, either refers generically to all types of reference dose or specifically to chronic reference dose; it never refers specifically to subchronic or developmental RfD.

Reference Man

A hypothetical aggregation of human physical and physiological characteristics arrived at by international consensus. These characteristics may be used by researchers and public health workers to standardize results of experiments and to relate biological insult to a common base.

Relocation

Temporary or permanent removal of a population or community in response to an emergency or disaster. A protective action in which persons are asked to vacate a contaminated area to avoid chronic exposure from deposited contamination.

Reproductive Death

The loss of the ability to reproduce. Reproductive death may cause irreversible organ damage.

Reproductive Effects

A toxic effect of a substance that is evident in the second or third generation of exposed grandparents.

Residual Hazards

Hazards that are not eliminated by design.

Residual Risk

The probability or likelihood of injury resulting from the actual use of a substance in the quantity and manner proposed once all recommendations to eliminate or minimize the hazard have been implemented.

Restricted Area or Zone

Any region with controlled access from which the population has been evacuated or relocated; any area to which access is controlled for the protection of individuals from exposure to contamination from NBC agents.

Retained Quantity

The quantity of a deposited material in a compartment, in an organ, or in the whole body at a given time after intake, deposition, or uptake.

Retention Function

A function describing the time dependence of the retained quantity.

Return

Refers to the reoccupation of areas cleared for unrestricted residence or use by previously evacuated populations. It includes what was termed "resettlement" in earlier draft USEPA guidance.

RfDs

Subchronic Reference Dose. An estimate (with certainty spanning perhaps an order of magnitude or greater) of a daily exposure level for the human population (including sensitive populations) that is likely to be without an appreciable risk of deleterious effects during a portion of a lifetime.

Risk

The probability or likelihood of an adverse effect or event (e.g., injury, disease, or death) resulting from the actual use of a substance in the quantity and manner proposed. It is the product of—

- a. The probability that an adverse effect or event will occur under specific circumstances of exposure.
- b. The probability that those specific circumstances of exposure will be realized. In quantitative terms, risk is expressed in values ranging from zero (representing the certainty that harm will not occur) to one (representing the certainty that harm will occur).

Risk Assessment

The scientific process of evaluating the toxic properties of a chemical and the conditions of human exposure to it, in order to both ascertain the likelihood that exposed humans will be adversely affected, and to characterize the nature of the effects they may experience. It may contain some or all of the following four steps:

- a. Hazard Identification: The determination of whether a particular chemical is or is not causally linked to particular health effect(s).
- b. Dose-Response Assessment: The determination of the relation between the magnitude of exposure and the probability of occurrence of the health effects in question.
- c. Exposure Assessment: The determination of the extent of human exposure.
- d. Risk Characterization: The description of the nature and often the magnitude of human risk, including attendant uncertainty.

Risk Assessment Code (RAC)

A code used to quantify risk to personnel operating or maintaining the system or conducting an operation. The RACs show the adverse health effect or possible loss of bodily systems described in categories of hazard severity and hazard probability. The RAC is assigned based on the failure to implement the recommendations for eliminating or minimizing the hazard. It is an expression of the risk associated with a hazard that combines the hazard severity and accident probability into a single Arabic numeral as described in Army Regulation 385-10.

Risk Management

A decision-making process that entails consideration of political, social, economic, and engineering information with risk-assessment information to develop, analyze, and compare regulatory options and to select the appropriate regulatory response to a potential health risk.

RNA (Ribonucleic Acid)

RNA consists of five-carbon sugar (ribose), phosphate, and four nitrogenous bases (adenine, guanine, cytosine, and uracil). In an RNA molecule, the sugar and phosphate combine to form a structure to which the nitrogenous bases are attached. These molecules range in composition from fewer than 100 to several thousand nitrogenous bases, and vary in shape from helical to uncoiled. RNA is the primary agent of protein formation, and processes genetic information from DNA molecules into enzymes necessary for life.

Safety

The opposite of risk. It is the probability that harm will not occur under specified conditions.

Sample Data Collection

A method for obtaining information on the performance and maintainability of equipment. Data are obtained directly from observations made in the field. An effort is made to see that the sample form from which feedback is obtained represents the total population.

Sanitary Sewerage

A system of public sewers for carrying off waste water and refuse, but excluding sewage treatment facilities, septic tanks, and leach fields owned or operated by the licensee.

Sepsis

The presence of pathogenic microorganisms (bacteria) or their toxins in the blood or other tissues.

Severity

The degree to which an effect changes and impairs the functional capacity of an organ system.

Shock

An upset in the body caused by inadequate amounts of blood circulating in the bloodstream. It manifests itself by a drop in blood pressure, rapid weak pulse, pale moist clammy skin, marked thirst, and a state of great anxiety. Shock can be caused by marked blood loss, overwhelming infection, severe injury to tissues, emotional factors, etc.

Short-Term Exposure

Multiple or continuous exposures occurring over a week or so.

Short-Term Public Emergency Guidance Level (SPEGL)

A suitable concentration of a substance in air (as a gas, vapor, or aerosol) for unpredicted, single, short-term, emergency exposure of the general public.

Site Closure and Stabilization

Those actions that are taken upon completion of operations that prepare the disposal site for custodial care and assure that the disposal site will remain stable and will not need ongoing active maintenance.

Skin Permeability

The rate at which the skin absorbs a liquid; expressed as a coefficient. The lower a substance's coefficient, the greater the rate of absorption.

Symptom

Information related by an individual about himself/herself that may indicate illness or injury. Signs or observations are made about an individual or an animal that may indicate illness or injury.

Syndrome

A set of symptoms that occur together.

Synergistic

Acting together to enhance the effect of another force or agent

System MANPRINT Management Plan (SMMP)

It is a planning and management tool that outlines and documents the Human Systems Integration (HSI) management approach, associated decisions and planning efforts, user concerns, and resolution of MANPRINT issues during system development and acquisition process. Identifying and documenting these issues early in the system acquisition process increases the probability of their resolution, thereby enhancing total system performance, affordability, supportability, and conservation of the Army resources.

Systemic

Spread throughout the body, affecting all body systems and organs, not localized in one spot or area.

Systemic Effects

Results that require absorption and distribution of the toxicant to a site distant from its portal of entry, at which point effects are produced. Most chemicals that produce systemic toxicity do not cause a similar degree of toxicity in all organs, but usually demonstrate major toxicity to one or two organs. These are referred to as target organs of toxicity for that chemical.

Systemic Toxicity

See Systemic Effects.

t

time.

Terrorism

Terrorism is the use or threatened use of force designed to achieve political or social objectives. It is the premeditated, deliberate, systematic murder, mayhem, and threatening of uninvolved people to create fear and intimidation. To protect against terrorism, individuals should—

- a. Be alert and learn where emergency exits are located. Think ahead about how to evacuate a building, subway, or congested public area in a hurry. Learn where staircases are located.
- b. Take precautions when traveling. Be aware of conspicuous or unusual behavior. Do not leave luggage unattended. Do not accept packages from strangers.
- c. Learn about the different types of terrorist weapons including explosives, kidnappings, hijackings, biological agents, arson, and shootings. (<http://www.whitehouse.gov/homeland/>)

Threshold

The lowest dose or exposure at which a specified effect begins to be produced.

Threshold, Th50

The vapor dosage producing the defined threshold (low-level) response in 50 percent of the given population. Within the context of this Glossary, the route of exposure can be either inhalation or percutaneous. (Note that percutaneous vapor effects can also include direct vapor effects upon the eyes.)

Threshold Dose

The smallest amount of toxic substance that can produce the first recognizable injuries (e.g., irritation of skin, eyes, or nose; miosis).

Threshold Limit Value (TLV)

A value that refers to airborne concentrations of substances and represents conditions under which it is believed nearly all workers may be repeatedly exposed day after day, without adverse health. A table of these values and accompanying precautions is published annually by the ACGIH.

Threshold Limit Value Categories—

- a. Threshold Limit Value- Time-Weighted Average (TLV-TWA): The TWA concentration for a normal 8-hour workday and a 40-hour workweek, to which nearly all workers may be repeatedly exposed, day after day, without adverse effect.
- b. Threshold Limit Value- Short-Term Exposure Limit (TLV-STEL): The concentration to which workers can be exposed continuously for a short period of time without suffering from: (1) irritation, (2) chronic or irreversible tissue damage, or (3) narcosis of sufficient degree to increase the likelihood of accidental injury, impair self-rescue, or materially reduce work efficiency, provided that the daily TLV-TWA is not exceeded. It is not a separate independent exposure limit; rather, it supplements the time-weighted average limit where there are recognized acute effects from a substance whose toxic effects are primarily of a chronic nature. Exposures up to the STEL should not be longer than 15 minutes and should not occur more than four times per day.
- c. Threshold Limit Value - Ceiling (TLV-C): The concentration that should not be exceeded during any part of the working exposure.

Time-Weighted Average (TWA) Concentration

The concentration of airborne contaminants that have been weighted for the time duration, usually eight hours. A sufficient number of samples are needed to determine a time-weighted average concentration throughout a complete cycle of operations or through the work shift.

Time-Weighted Average Exposure

An average over a given (working) period of an individual's exposure, as determined by sampling at given times during the period.

Total Parenteral Nutrition

By injection through some route other than the canal providing sustenance or nourishment.

Toxic

Harmful to living organisms; poisonous.

Toxic Dose

The dose of a substance needed to produce a defined toxic effect in 100 percent of the exposed population.

Toxic Dose, TD50

The dose of a substance needed to produce a defined toxic effect in 50 percent of the exposed population. It is an infrequently used term, equivalent to ED50 where "toxicity" is the measured "effect."

Toxic Substances

A substance that destroys life or injures health when introduced into or absorbed by a living organism.

Toxicity

The capacity of a substance to induce injury. It describes the nature, degree, and extent of undesirable effects.

Training Device

Any three-dimensional object developed, fabricated, or procured specifically for improving the learning process.

Tumor

A swelling or enlargement due to pathogenic overgrowth of tissue.

Uncertainty Factor (UF)

One of several, generally 10-fold, factors used in operationally deriving a standard or a reference dose from experimental data. UFs are intended to account for—

- a. The variation in sensitivity among the members of the human population.
- b. The uncertainty in extrapolating animal data to the case of humans.
- c. The uncertainty in extrapolating from data obtained in a study involving less-than-lifetime exposure.
- d. The uncertainty in using lowest-observed adverse effect level data rather than NOAEL data.
- e. The inability of any single study to address adequately all possible adverse outcomes in man.

Uptake

Quantity of material taken up into the extra-cellular fluids. It is usually expressed as a fraction of the deposition in the organ from which uptake occurs.

U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID)

The Department of Defense's lead laboratory for medical aspects of biological warfare defense. It conducts research to develop vaccines, drugs, and diagnostics for laboratory and field use. USAMRIID also formulates strategies, information, procedures, and training programs for medical defense against biological threats. It is Located in Fort Detrick, MD. <http://www.usamriid.army.mil>

U.S. Environmental Protection Agency (USEPA)

The mission of the USEPA is to protect human health and to safeguard the natural environment. The USEPA implements the Federal laws designed to promote public health by protecting our nation's air, water, and soil from harmful pollution and endeavors to accomplish its mission systematically by proper integration of a variety of research, monitoring, standard-setting, and enforcement activities. <http://www.epa.gov/>

Vapor

The gaseous form of substances that is normally in the solid or liquid state; it can be changed to this state by increasing the pressure or decreasing the temperature. These vapors will diffuse.

Vaporization

Change of a substance from a liquid into a gas.

Ventilation

One of the principal methods to control health hazards; it may be defined as "causing fresh air to circulate to replace foul air simultaneously removed."

Ventilation, Dilution

Airflow designed to dilute contaminants to acceptable levels.

Ventilation, Mechanical

Air movement caused by a fan or other air-moving device.

Ventilation, Natural

Air movement caused by wind, temperature difference, or other non-mechanical factors.

Virus

Any of various submicroscopic pathogens consisting essentially of a core of a single nucleic acid surrounded by a protein coat, having the ability to replicate only inside a living cell.

Weapons of Mass Destruction (WMD)

This term means any destructive device to include—

- a. Any explosive, incendiary, or poison gas.
- b. Bomb.
- c. Grenade.
- d. Rocket having a propellant charge of more than four ounces.
- e. Missile having an explosive or incendiary charge of more than one-quarter ounce.
- g. Mine.
- h. Any type of weapon (excluding a shotgun or a shotgun shell used for sporting purposes) that can be readily converted to, expel a projectile by the action of an explosive or other propellant, and which has any barrel with a bore of more than one-half inch in diameter.
- i. Any combination of parts either designed or intended for use in converting any device into any destructive device described above, above from which a destructive may be readily assembled.
- j. Any weapon that is designed or intended to cause death or serious bodily injury through the release, dissemination, or impact of toxic or poisonous chemicals or their precursors.
- k. Any weapon involving a disease or organism.
- l. Any weapon that is designed to release radiation or radioactivity at a level dangerous to human life.

Well Bore

A drilled hole in which wire line service operations or subsurface tracer studies are performed.

Wire Line

A cable containing one or more electrical conductors, which is used to lower and raise logging tools in the well bore.

Wire Line Service Operation

Any evaluation or mechanical service that is performed in the well bore using devices on a wire line.

Section 3 – Nuclear Terms**Ablation**

The functional destruction of an organ through surgery or exposure to large doses of radiation.

Absorbed Dose

The energy imparted by ionizing radiation per unit mass of irradiated material. The units of absorbed dose are the rad and the gray.

Absorber

Any material that absorbs or lessens the intensity of ionizing radiation. Neutron absorbers (like boron, hafnium, and cadmium) are used in control rods for reactors. Concrete and steel absorb gamma rays and neutrons in reactor shields. A thin sheet of paper or metal will absorb or weaken alpha particles and all except the most energetic beta particles. (See Shielding.)

Absorption

The process by which the number of particles or photons entering a body of matter is reduced or attenuated by interaction with the matter.

Accident Response Group

A group of technical and scientific experts composed of U.S. Department of Energy personnel assigned responsibility for providing assistance to peacetime accidents and significant incidents involving nuclear materials anywhere in the world.

Activation

The process of making a material radioactive by bombardment with neutrons, protons, or other nuclear radiation. (See Induced Radioactivity.)

Activity

The rate of disintegration (transformation) or decay of radioactive material. The units of activity are the curie (Ci) and the becquerel (Bq).

Activity Median Aerodynamic Diameter

The diameter of a unit density sphere with the same terminal settling velocity in air as that of the aerosol particle whose activity is the median for the entire aerosol.

Acute Radiation Exposure

The absorption of a relatively large amount of radiation (or intake of radioactive material) over a short period of time.

Acute Radiation Health Effects

Prompt radiation effects (those that would be observable within a short period of time) for which the severity of the effect varies with the dose, and for which a practical threshold exists.

Acute Radiation Syndrome

The combination of clinical syndromes occurring during a period of hours to weeks after an exposure.

Added Filtration

Any filtration that is in addition to the inherent filtration.

Afterwind

Wind currents that are created near a nuclear explosion by the updraft accompanying the rise of the fireball and that travel toward the blast.

Airborne Radioactive Material

Radioactive material dispersed in the air in the form of dusts, fumes, particulates, mists, vapors, or gases.

Airborne Radioactivity Area

A room, enclosure, or area in which airborne radioactive materials exist in concentrations—
a. In excess of the specified derived air concentrations.

b. To such a degree that an individual present in the area without respiratory protective equipment could exceed, during the hours an individual is present in a week, an intake of 0.6 percent of the annual limit on intake or 12 derived air concentration hours.

Air Burst

The explosion of a nuclear weapon at such a height that the expanding fireball does not contact the Earth's surface.

Alpha Particle

A positively charged particle ejected spontaneously from the nuclei of some radioactive elements. It is identical to a helium nucleus that has a mass number of 4 and an electrostatic charge of +2.

Aluminum Equivalent

The thickness of type 1100 aluminum alloy (the nominal chemical composition of type 1100 aluminum is 99.00 percent minimum aluminum, 0.12 percent copper) affording the same attenuation, under specified conditions, as the material in question.

Analytical X-Ray Equipment

Equipment used for x-ray diffraction or fluorescence analysis.

Analytical X-Ray System

A group of components utilizing x or gamma rays to determine the elemental composition or to examine the microstructure of materials.

Anion

Negatively charged ion. (See Ionization.)

Annual Limit on Intake (ALI)

The derived limit for the amount of radioactive material taken into the body of an adult worker by inhalation or ingestion in a year. The ALI is the smaller value of intake of a given radionuclide in a year by the reference man that would result in a committed effective dose equivalent of 5 rems (0.05 Seivert (Sv)) or a committed dose equivalent of 50 rems (0.5 Sv) to any individual organ or tissue.

Anti-contamination Clothing

Clothing consisting of coveralls, shoe covers, gloves, and hood or hair cap. This clothing provides protection for the user from alpha radiation, and is also a control device to prevent the spread of contamination.

Armed

The configuration of a nuclear weapon which a single signal initiates the action for a nuclear detonation.

Armed Forces Radiobiology Research Institute

This organization provides support to commanders during the response to a nuclear accident or radiological incident. They provide functional area experts in the field of health physics, radiation medicine, and site remediation. <http://www.afrii.usuhs.mil>

Arming System

As applied to weapons and ammunition, the changing from a safe condition to a state of readiness for initiation.

As Low As is Reasonably Achievable (ALARA)

Making every reasonable effort to maintain exposures to radiation as far below the dose limits as is practical and consistent with the purpose for which the licensed activity is undertaken. It must be taken into consideration the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and

other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed materials in the public interest.

Atmospheric Release Advisory Capability

A centralized computer-based system that provides estimates of the transport, diffusion, and deposition of radioactive or other hazardous material released to the atmosphere and dose projection to people and the environment.

Atom

The smallest particle of an element that cannot be divided or broken up by chemical means. It consists of a central core called the nucleus, which contains protons and neutrons. Electrons revolve in orbits in the region surrounding the nucleus.

Atomic Energy

Energy released in nuclear reactions. Of particular interest is the energy released when a neutron initiates the breaking up or fissioning of an atom's nucleus into smaller pieces (fission), or when two nuclei are joined together under millions of degrees of heat (fusion). It is more correctly called "nuclear energy."

Atomic Number

The number of positively charged protons in the nucleus of an atom and the number of electrons on an electrically neutral atom.

Atomic Weight

The number of nucleons (neutrons or protons) in the nucleus of an atom. (See Mass Number.)

Attenuation

The process by which a beam of radiation is reduced in intensity when passing through some material. It is the combination of absorption and scattering processes and leads to a decrease in flux density of the beam when projected through matter.

Attenuation Coefficient

Of a substance, for a parallel beam of specified radiation: the quantity μ in the expression μdx for the fraction removed by attenuation in passing through a thin layer of thickness dx of that substance. It is a function of the energy of the radiation. As dx is expressed in terms of length, mass per unit area, moles or atoms per unit area, μ is called the linear, mass, molar, or atomic attenuation coefficient respectively.

Back End

The series of steps after fuel is burned in the reactor, including the handling of discharged fuel elements from the reactor, chemical reprocessing, recycling of recovered fissile and fertile material, and radioactive waste disposal.

Background Radiation

Radiation from cosmic sources; naturally occurring radioactive materials, including radon (except as a decay product of source or special nuclear material) and global fallout as it exists in the environment from the testing of nuclear explosive devices. Background radiation does not include radiation from source, byproduct, or special nuclear materials.

Beam Limiting Device

A device that provides a means to restrict the dimensions of the x-ray field.

Beryllium

A low-density, gray metal used in many industries because of its high permeability to x-rays, lightweight, and high tensile strength. It is also used in aerospace structures and inertial guidance systems. It is highly toxic; death may result from ingestion of very low concentrations of the element

and its salts. Beryllium compounds can enter the body through inhalation of the dusts and fumes, and they may act locally on the skin.

Beta Gauge

An industrial device that uses beta radiation for measuring thickness or density of materials.

Beta Particle, Radiation

A charged particle emitted from a nucleus during radioactive decay, with a mass equal to $1/1837$ that of a photon. A negatively charged beta particle is identical to an electron. A positively charged beta particle is called a positron. Large amounts of beta radiation may cause skin burns, and beta emitters are harmful if they enter the body. Beta particles are easily stopped by a thin sheet of metal or plastic.

Becquerel (Bq)

A unit, in the International System of Units, of measurement of radioactivity equal to one transformation per second.

Binding Energy

The minimum energy required separating a nucleus into its component neutrons and photons.

Bioassay

The determination of kinds, quantities or concentrations, and, in some cases, the locations of radioactive material in the human body, whether by direct measurement (in-vivo counting) or by analysis and evaluation of materials excreted or removed from the human body (radiobioassay).

Biological Half-Life

The time required for a biological system, such as that of a human, to eliminate by natural processes half the amount of a substance (such as a radioactive material) that has entered it.

Biological Shield

A mass of absorbing material placed around a reactor or radioactive source to reduce the radiation to a level safe for humans.

Blast Wave

A pulse of air in which the pressure increases sharply at the front propagated by the explosion. "Blue Glow". The characteristic blue light emitted by very high-energy particle interaction with matter. It is usually only visible in the vicinity of very intense radiation such as a reactor core or spent fuel pools.

Body Burden

The amount of radioactive material that if deposited in the total body will produce the maximum permissible dose rate to the body organ considered the critical organ.

Bone Seeker

A radioisotope that tends to accumulate in the bones when it is introduced into the body. An example is strontium-90, which behaves chemically like calcium.

Brachytherapy

A method of radiation therapy in which sealed sources are utilized to deliver a radiation dose at a distance of up to a few centimeters, by surface, intracavitary, or interstitial application.

Breeder, Breeder Reactor

A reactor which produces more fissile nuclei than are consumed. The fissile material is produced both in the reactor's core and when neutrons are captured in fertile material placed around the core.

Bremstrahlung

The process by which a beta particle emits an x-ray photon during its interaction with an atomic nucleus.

Buildup Factor

In the passage of radiation through a medium, the ratio of the total value of a specified radiation quantity at any point to the contribution to that value from radiation reaching the point through the medium without having undergone a collision.

Buildup Factor, Energy Absorption, BA

A photon buildup factor in which the quantity of interest is the absorbed or deposited energy in the shield medium. The energy response function is that of absorption in the material.

Buildup Factor, Exposure BD

A photon buildup factor in which the quantity of interest is exposure. The energy response function is that of absorption in air.

Byproduct Material

- a. Any radioactive material (except special nuclear material) yielded in, or made radioactive by, exposure to the radiation incident to the process of producing or utilizing special nuclear material.
- b. The tailings or wastes produced by the extraction or concentration of uranium or thorium from ore processed primarily for its source material content, including discrete surface wastes resulting from uranium solution extraction processes. Underground ore bodies depleted by these solution extraction operations and do not constitute byproduct material within this definition.

Cadmium

A metal with a very high absorption factor for neutrons in a certain energy range. It is used in detectors to separate thermal neutrons from fast neutrons, and for control rods and neutron shielding.

Cation

A positively charged ion. (See Ionization.)

Centrifuge

A machine using centrifugal force that can be used for isotope enrichment or uranium.

Cephalometric Device

A device intended for the radiographic visualization and measurement of the dimensions of the human head.

Chain Reaction

A response that stimulates its own repetition. In a fission chain reaction, a fissionable nucleus absorbs a neutron and fissions, releasing additional neutrons. These in turn can be absorbed by other fissionable nuclei, releasing still more neutrons. A fission chain reaction is self-sustaining when the number of neutrons released in a given time equals or exceeds the number of neutrons lost by absorption in non-fissionable material or by escape from the system.

Charged Particle

An ion. An elementary particle carrying a positive or negative electric charge.

Chemical Recombination

Following an ionization event, the positively and negatively charged ion pairs may or may not realign themselves to form the same chemical substance they formed before ionization. Thus, chemical recombination could change the chemical composition of the material bombarded by radiation.

China Syndrome

A phrase referring to the possibility of a core reassembling into a critical mass after meltdown, and burning its way downward through the earth to China.

Chronic Exposure

The absorption of radiation (or intake of radioactive materials over a long period of time, i.e., over a lifetime).

Class (Lung Class or Inhalation Class)

A classification scheme for inhaled material according to its rate of clearance from the pulmonary region of the lung. Materials are classified as D, W, or Y, which applies to a range of clearance half-times; for Class D (Days) of less than 10 days, for Class W (Weeks) from 10 to 100 days, and for Class Y (Years) of greater than 100 days.

Cleanup System

Components used for continuously filtering and demineralizing the reactor coolant system to reduce contamination levels and minimize corrosion.

Cloudshine

Gamma radiation from radioactive materials in an airborne plume.

Cobalt

A gray, hard, magnetic, ductile, and somewhat malleable metal. It is relative rare and generally obtained as a byproduct of other metals such as copper.

Cold Neutrons

Neutrons in thermal equilibrium with an environment cooled well below 20 degrees Celsius typically at 20-50° Kelvin.

Collective Dose

The sum of the individual doses received in a given period of time by a specified population from exposure to a specified source of radiation.

Command Disable

A subsystem of command and control features that destroy a weapon's ability to produce nuclear yield.

Committed Dose Equivalent (HT, 50)

The dose equivalent to organs or tissues of reference that will be received from an intake of radioactive material by an individual during the 50-year period following the intake.

Committed Effective Dose

See Committed Effective Dose Equivalent.

Committed Effective Dose Equivalent (HE, 50)

The sum of the products of the weighting factors applicable to each of the body organs or tissues that are irradiated and the committed dose equivalent to these organs or tissues— (HE, 50 \square WTHT, 50)

Contamination, Radioactive

The deposition of unwanted radioactive material on the surfaces of structures, areas, objects, or personnel.

Contamination Control

Procedures to avoid, reduce, remove, or render harmless, temporarily or permanently, nuclear, biological, chemical agent and hazardous materials contamination.

Containment Building

A structure made of steel-reinforced concrete that houses the nuclear reactor. It is designed to protect the reactor from external hazards and to prevent the escape of radioactive material into the environment.

Containment Vessel

A gas-tight shell or other enclosure around a nuclear reactor.

Coordinating Committee (COCOM)

This group grew out of the NATO's Cold War efforts to restrict militarily useful trade to the Soviet Union. Belgium, Canada, Denmark, France, the United Kingdom, Italy, Luxembourg, The Netherlands, Norway, Portugal, and the United States founded COCOM. Since its inception, COCOM has worked to control technology rather than products.

Correction Factor, Shield Tissue Interface

A correction factor to be applied to the basic infinite-medium exposure buildup factor to correct for the scattering in a tissue phantom after emerging from a shield.

Cosmic Radiation

Penetrating ionizing radiation, both particulate and electromagnetic, originating in space. Secondary cosmic rays, formed by interactions in the earth's atmosphere, account for about 45 to 50 millirem annually.

Count Rate

The number of particles of a given type or radiation counted per second.

Counter

A general designation applied to radiation detection instruments or survey meters that detect and measure radiation. The signal that announces an ionization event is called a count.

Critical Mass

The smallest mass of fissionable material that will support a self-sustaining chain reaction.

Critical Organ

The body organ receiving a radionuclide or radiation dose that results in the greatest overall damage to the body.

Criticality

A term used in reactor physics to describe the state when the number of neutrons released by fission is exactly balanced by the neutrons being absorbed (by the fuel and poisons) and escaping the reactor core. A reactor is said to be "critical" when it achieves a self-sustaining nuclear chain reaction.

Cumulative Dose

The total dose resulting from repeated exposures of radiation to the same region, or to the whole body, over a period of time.

Curie (Ci)

The basic unit used to describe the intensity of radioactivity in a sample of material. The Ci is equal to 37 billion disintegrations per second, which is approximately the rate of decay of 1 g of radium. A Ci is also a quantity of any radionuclide that decays at a rate of 37 billion disintegrations per second.

Daughter Products/Progeny

Isotopes that are formed by the radioactive decay of some other isotope. In the case of radium-226, for example, there are 10 successive daughter products, ending in the stable isotope lead-206.

Decay

The decrease in the radiation intensity of any radioactive material with respect to time.

Decay Heat

The heat produced by the decay of radioactive fission products after the reactor has been shut down.

Decay, Radioactive

The decrease in the amount of any radioactive material with the passage of time, due to the spontaneous emission from the atomic nuclei of either alpha or beta particles, often accompanied by gamma radiation.

Decommission

The process of removing a nuclear facility from service by a reduction of residual radioactivity to a level that permits the release of the property for unrestricted use or maintenance under protection for reasons of public health and safety.

Decontamination, Radioactive

The reduction or removal of contaminating radioactive material from a structure, area, object, or person. Decontamination may be accomplished by—

- a. Treating the surface to remove or decrease the contamination.
- b. Letting the material stand so that the radioactivity is decreased as a result of nature decay.
- c. Covering the contamination to shield or attenuate the radiation emitted.

Deep-Dose Equivalent (Hd)

Which applies to external whole-body exposure, is the dose equivalent at a tissue depth of 1 centimeter (cm) (1000 mg/m³).

Delayed Fallout

Radioactive fallout that returns to Earth later than 24 hours after a nuclear detonation.

Delayed Health Effects

The results of radiation that are manifested long after the relevant exposure. The vast majority is stochastic, that is, the severity is independent of dose and the probability is assumed to be proportional to the dose, without threshold.

Demilitarization

The process of eliminating or reducing military weapons, materials, or other hardware and organizational structures.

Depleted Uranium

Uranium having a percentage of uranium-235 smaller than the 0.7 percent found in natural uranium. It is obtained from spent (used) fuel elements or as by-product tails, or residues, from uranium isotope separation.

Derived Air Concentration

The concentration of a given radionuclide in air which, if breathed, by the reference man for a working year of 2,000 hours under conditions of light work (inhalation rate 1.2 m³ of air per hour), results in an intake of one ALI.

Derived Air Concentration-Hour (DAC-Hour)

The product of the concentration of radioactive material in air (expressed as a fraction or multiple of the derived air concentration for each radionuclide) and the time of exposure to that radionuclide, in hours. A licensee may take 2,000 derived air concentration-hours to represent one ALI equivalent to a committed effective dose equivalent of 5 rems (0.05 Sv).

Derived Response Level (DRL)

The amount of radioactivity in an environmental medium that would be expected to produce a dose equal to its corresponding Protective Action Guide.

Detector

A material or device that is sensitive to radiation and can produce a response signal suitable for measurement or analysis. A radiation detection instrument.

Deterministic Effect

A result that occurs after a certain dose threshold, with the severity of the effect determined by the dose.

Detonation

An explosion.

Detonator

A device containing a sensitive explosive intended to produce a detonation wave for setting off a high explosive element.

Deuterium

An isotope of hydrogen with one proton and one neutron in the nucleus. (See Heavy Water.)

Deuteron

The nucleus of deuterium. It contains one proton and one neutron.

Disassembly

The process of taking apart a nuclear warhead and removing the subassemblies, components, and individual parts.

Disintegration

See Decay, Radioactive.

Doppler Coefficient

See Fuel Temperature Coefficient of Reactivity.

Dose or Radiation Dose

A generic term that means absorbed dose, dose equivalent, effective dose equivalent, committed dose equivalent, committed effective dose equivalent, or total effective dose equivalent.

Dose Conversion Factor

Any factor that is used to change an environmental measurement to dose in the units of concern. Frequently used as the factor that expresses the committed effective dose equivalent to a person from the intake (inhalation or ingestion) of a unit activity of a given radionuclide.

Dose Equivalent (HT)

The product of the absorbed dose in tissue, quality factor, and all other necessary modifying factors at the location of interest. The units of dose equivalent are the rem and Sv. The ICRP defines this as the equivalent dose.

Dose Rate

The radiation dose delivered per unit of time. Measured, for example, in rem per hour.

Dosimeter

A portable instrument for measuring and registering the total accumulated exposure to ionizing radiation.

Dosimetry

The theory and application of the principles and techniques involved in the measurement and recording of radiation doses. Its practical aspect is concerned with the use of various types of radiation instruments with which measurements are made. (See Film Badge.)

Dosimetry Processor

An individual or an organization that processes and evaluates individual monitoring equipment in order to determine the radiation dose delivered to the equipment.

Dynamic Pressure

Air pressure that results from the wind behind the shock front of a blast wave.

Early Fallout

Radioactive debris that returns to the Earth within 24 hours after a nuclear detonation; local fallout.

Effective Dose Equivalent (HE)

The sum of the products of the dose equivalent to the organ or tissue (HT) and the weighting factors (WT) applicable to each of the body organs or tissues that are irradiated ($HE = \sum HTWT$). The ICRP defines this as the effective dose.

Effective Half-Life

The time required for the amount of a radioactive element deposited in a living organism to be diminished 50 percent as a result of the combined action of radioactive decay and biological elimination. (See Biological Half-Life.)

Electromagnetic Pulse

A sharp pulse of radio-frequency electromagnetic radiation is produced when a nuclear explosion occurs in an unsymmetrical environment, especially at or near the earth's surface or at high altitudes.

Electromagnetic Radiation

A traveling wave motion resulting from changing electric or magnetic fields. Familiar electromagnetic radiation range from x rays (and gamma rays) of short wavelength, through the ultraviolet, visible, and infrared regions, to radar and radio waves of relatively long wavelength. All electromagnetic radiation travel in a vacuum with the velocity of light. (See Photon.)

Electron

An elementary particle with a unit negative charge and a mass 1/1837 that of the proton. Electrons surround the positively charged nucleus and determine the chemical properties of the atom.

Energy Absorption Coefficient

Of a substance, for a parallel beam of specified radiation: the quantity μ_{en} in the expression $\mu_{en} dx$ for the fraction removed by attenuation in passing through a thin layer of thickness dx of that substance. It is a function of energy of the radiation. As dx is expressed in terms of length, mass per unit area, moles per unit area, or atoms per unit area, μ_{en} is called the linear, mass, molar, or atomic energy absorption coefficient. NOTE: It is that part of the attenuation coefficient resulting from energy absorption only, and is equal to the product of the energy transfer coefficient and $1-g$, where g is the fraction of the energy of secondary charged particles that is lost to bremsstrahlung in the material.

Energy Reorganization Act (Public Law 93-438, 93rd Congress, H.R. 11510, October 11, 1974)

An act to reorganize and consolidate certain functions of the Federal Government in a new Energy Research and Development Administration and in a new Nuclear Regulatory Commission (NRC) in order to promote more efficient management of such functions. (<http://www-aca1.ria.army.mil/LC/R/RS/act.htm>)

Enrichment

See Isotopic Enrichment.

Exposure

A measure of the ionization produced in air by x or gamma radiation; the sum of electric charges on all ions of one sign produced in air when all electrons liberated by photons in a volume of air are completely stopped in air, divided by the mass of the air in the volume; a unit of exposure in air is the roentgen (R), or coulomb per kg (International System of Units).

Eye Dose Equivalent

Applies to the external exposure of the lens of the eye and is taken as the dose equivalent at a tissue depth of 0.3 cm (300 mg/m³).

Fallout

The process or phenomenon of the descent to the Earth's surface of particles contaminated with radioactive material from the radioactive cloud produced by a nuclear detonation.

Fast Breeder Reactor

This reactor is fueled by a mixture of plutonium and natural uranium oxides and relies on the nuclear fission of the two atoms in an intense flux of high energy neutrons produced in a highly compact core without any moderator.

Fast Fission

Fission of a heavy atom (such as uranium-238) when it absorbs a high-energy (fast) neutron. Most fissionable materials need thermal (slow) neutrons in order to fission.

Fast Neutron

A neutron with kinetic energy greater than its surroundings released during fission.

Federal Radiological Emergency Response Plan

The Federal plan to assist state and local government officials or other Federal agencies in the response to a radiological emergency in the U.S., its possessions and territories.

<http://www.fema.gov/pte/rep/352-22.htm>

Federal Radiological Monitoring and Assessment Center

A Center established near the scene of a radiological emergency responsible for off-site radiological response from which the Center Director conducts the response.

Federal Radiological Monitoring and Assessment Plan

A plan to provide coordinated radiological monitoring and assessment assistance to the state and local governments in response to radiological emergencies.

Fertile Material

A material, which is not itself fissile (fissionable by thermal neutrons) that can be converted into a fissile material by irradiation in a reactor. There are two basic fertile materials, uranium-238 and thorium-232. When these fertile materials capture neutrons, they are converted into fissile plutonium-239 and uranium-233, respectively.

Film Badge

A pack of photographic film used for approximate measurement of radiation exposure for personnel monitoring purposes. The badge may contain two or three films of differing sensitivity, and it may contain a filter that shields part of the film from certain types of radiation.

Fireball

Hot gases that form a luminous sphere after a nuclear explosion.

Fissile Material

Although sometimes used as a synonym for fissionable material, this term has acquired a more restricted meaning; namely, any material fissionable by thermal (slow) neutrons. The three primarily fissile materials are uranium-233, uranium-235, and plutonium-239.

Fission

The splitting of a nucleus into at least two other nuclei and the release of a relatively large amount of energy. Two or three neutrons are usually released during this type of transformation.

Fission Gases

Those fission products that exist in the gaseous state. Primarily the noble gases (e.g., krypton, xenon, etc.).

Fission Products

The nuclei (fission fragments) formed by the fission of heavy elements, plus the nuclides formed by the fission fragments' radioactive decay.

Fissionable Material

Commonly used as a synonym for fissile material, the meaning of this term has been extended to include material that can be fissioned by fast neutrons, such as uranium-238.

Flash Burn

A burn caused by excessive exposure of the skin to thermal radiation.

Fluence

The number of radioactive particles, neutrons, or photons per unit cross-sectional area.

Flux

A term applied to the amount of some type of radiation crossing a certain area per unit time. The unit of flux is the number of particles, energy, etc., per square centimeter per second.

Flux Density

The flux density at a point is the number of radioactive particles, neutrons, or photons passing per unit time, per unit area of the beam.

Fuel Cycle

The sequences of operations involved in supplying fuel for nuclear power generation, for irradiating the fuel in a nuclear reactor, and for handling and treating the fuel elements following discharge from the reactor.

Fuel Temperature Coefficient of Reactivity

The physical property of fuel pellet material (uranium-238) that causes the uranium to absorb more neutrons away from the fission process as fuel pellet temperature increases. This acts to stabilize power reactor operations. Also known as the Doppler Coefficient.

Fusion

A nuclear reaction characterized by joining together of light nuclei to form heavier nuclei, the energy for the reactions being provided by violent thermal agitation of particles at very high temperatures. If the colliding particles are properly chosen and the agitation is violent enough, there will be a release of energy from the reaction. The energy of the stars is derived from such reactions.

Gamma Ray

High-energy, short wavelength electromagnetic radiation (a packet of energy) emitted from the nucleus. Gamma radiation frequently accompanies alpha and beta emissions and always accompanies fission. Gamma rays are very penetrating and are best stopped or shielded against by

dense materials, such as lead or uranium. Gamma rays are similar to x-rays but are usually more energetic.

Gamma Ray, Radiation

High-energy electromagnetic radiation emitted by nuclei during nuclear reactions or radioactive decay. These rays have high energy and a short-wave length.

Gamma Ray Camera

A device for transporting and handling intense gamma ray sources in the field for the purpose of gamma radiography. It consists of a heavily shielded container with a shutter and remote controls so that the source can be exposed without hazard to the operator.

Gamma Ray Detector

A detector designed to measure gamma rays rather than x-rays.

Gases

Normally formless fluids that completely fill the space and take the shape of their container.

Gaseous Diffusion

A method of isotopic separation based on the fact that gas atoms or molecules with different masses will diffuse through a porous barrier (or membrane) at different rates. This method is used to separate uranium-235 from uranium-238; it requires large gaseous diffusion plants and enormous amounts of electric power.

Geiger-Mueller Counter

A radiation detection and measuring instrument. It consists of a gas-filled tube containing electrodes, between which there is an electrical voltage but no current flowing. When ionizing radiation passes through the tube, a short, intense pulse of current passes from the negative electrode to the positive electrode and is measured or counted. The number of pulses per second measures the intensity of radiation.

Gonad Shield

A protective barrier for the testes or ovaries.

Graphite

A form of carbon, similar to the lead used in pencils, used as a moderator in some nuclear reactors.

Gray (Gy)

The International System of Units of absorbed dose. One Gy is equal to an absorbed dose of 1 J kg⁻¹ (100 rad).

Groundshine

Gamma radiation from radioactive materials deposited on the ground.

Half-Life

The time in which half the atoms of a particular radioactive substance disintegrate to another nuclear form. Measured half-lives vary from millionths of a second to billions of years.

Half-Life, Effective

The time required for a radionuclide contained in a biological system, such as a human or an animal, to reduce its activity by half as a combined result of radioactive decay and biological elimination.

Half-Thickness

The thickness of any given absorber that will reduce the intensity of a beam of radiation to one half its initial value. (See Attenuation; Shielding.)

Half-Time, Biological (Tb)

The time in which half the quantity of a material in a component, in an organ, or in the whole body is eliminated by biological processes.

Half-Time, Effective (Te)

The time taken for the activity of a radioactive material in a compartment, in an organ, or in the whole body to be reduced to half its value by a combination of biological elimination and radioactive decay.

$$\frac{1}{Te} = \frac{1}{Tb} + \frac{1}{TR}$$

Half-Time, Physical (TR)

The time taken for the activity of a radionuclide to lose half its value by radioactive decay.

Health Physics

The science concerned with recognition, evaluation, and control of health hazards from ionizing and non-ionizing radiation.

Heat Exchanger

Any device that transfers heat from one fluid (liquid or gas) to another fluid or to the environment.

Heat Sink

Anything that absorbs heat; usually part of the environment, such as the air, a river or outer space.

Heavy Metal

The fuel materials, including uranium, plutonium, and thorium, with atomic numbers of 90 and above, used in nuclear reactors and nuclear weapons.

Heavy Water (D2O)

Water containing significantly more than the natural proportions (1 in 6500) of heavy hydrogen (deuterium) atoms to ordinary hydrogen atoms. Heavy water is used as a moderator in some reactors because it slows down neutrons effectively and also has a low probability for absorption of neutrons.

Heavy Water Reactor

A nuclear reactor that uses heavy water as a moderator and / or coolant and natural uranium as fuel.

Hematopoietic

Pertaining to or effecting the formation of blood cells.

Hemorrhage

The escape of blood from the vessels.

High-Radiation Area

An area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent in excess of 0.1 rem (1 milli/Sv (m/Sv) in 1 hour at 30 cm from the radiation source or from any surface that the radiation penetrates.

Hot

A colloquial term meaning highly radioactive.

Hot Cells

Any type of shielded room with remote handling equipment for examining and processing radioactive materials.

Hot Line

The inner boundary of the contamination control station, marked with tape or line.

Hot Spot

The region in an NBC contamination area in which the level of contamination is noticeably greater than in neighboring regions in the area.

Hydrogen Bomb

A nuclear weapon that derives its energy largely from fusion; it is also known as thermo-nuclear weapon.

Hyperpyrexia

A highly elevated body temperature.

Image Intensifier

A device, installed in its housing, which instantaneously converts an x-ray pattern into a corresponding light image or higher energy density.

Image Receptor

Any device, such as a fluorescent screen or radiographic film, which transforms incident x-ray photons either into a visible image or into another form which can be made into a visible image by further transformations.

Individual Monitoring

- a. The assessment of dose equivalent by the use of devices designed to be worn by an individual.
- b. The assessment of committed effective dose equivalent by bioassay (see Bioassay) or by determination of the time-weighted air concentrations to which an individual has been exposed (i.e., derived air concentration-hours).
- c. The assessment of dose equivalent by the use of survey data.

Individual Monitoring Devices (Individual Monitoring Equipment)

Devices designed to be worn by a single individual for the assessment of dose equivalent such as film badges, thermoluminescent dosimeters, pocket ionization chambers, and personal ("lapel") air sampling devices.

Induced Radioactivity

Radioactivity that is created when stable substances are bombarded by neutrons. For example, the stable isotope cobalt-59 becomes the radioactive isotope cobalt-60 under neutron bombardment.

Industrial Radiography

The examination of the macroscopic structure of materials by nondestructive methods using sources of ionizing radiation to produce radiographic images.

Ingestion Pathway

Route for internalization of radioactive contaminants; the pathway most accessible for decontamination.

Inhalation Pathway

The means by which a person at the accident area or downwind is subjected to respiratory radiation exposure.

Inherent Filtration

The filtration of the useful beam provided by the permanently installed components of the tube housing assembly.

Internal Dose

That portion of the dose equivalent received from radioactive material taken into the body. International Commission on Radiological Protection (ICRP)

ICRP is an independent Registered Charity, established in 1928 in the United Kingdom, to advance for the public benefit the science of radiological protection, in particular by showing recommendations and guidance on all aspects of protection against ionizing radiation. <http://www.icrp.net/>

Ion

An atom that has too many or too few electrons, causing it to be chemically active; an electron that is not associated (in orbit) with a nucleus. (See Ionization.)

Ionization

The process of stripping electrons from their atomic orbits by radiation.

Ionization Chamber

An instrument that detects and measures ionizing radiation by measuring the electrical current that flows when radiation ionizes gas in a chamber, making the gas a conductor of electricity. (See Counter.)

Ionizing Radiation

Any radiation capable of displacing electrons from atoms or molecules, thereby producing ions. Examples: alpha, beta, gamma, x-rays, neutrons and ultraviolet light. High doses of ionizing radiation may produce severe skin or tissue damage.

Irradiation

Exposure to radiation.

Isotone

One of several different nuclides having the same number of neutrons in their nuclei.

Isotope

One of two or more atoms with the same number of protons but different numbers of neutrons in their nuclei. Thus, carbon-12, carbon-13, and carbon-14 are isotopes of the element carbon, the numbers denoting the approximate atomic weights. Isotopes have very nearly the same chemical properties but often different physical properties (e.g., carbon-12 and -13 are stable, carbon-14 is radioactive).

Isotope Separation

The process of separating isotopes from one another or changing their relative abundances, as by gaseous diffusion or electromagnetic separation. Isotope separation is a step in the isotopic enrichment process.

Isotopic Enrichment

A process by which the relative abundances of the isotopes of a given element are altered, thus producing a form of the element that has been enriched in one particular isotope and depleted in its other isotopic forms.

keV

A kiloelectronvolt, 1000 electronvolts.

Kelvin

The unit of thermodynamic temperature equal to 1/273.16 of the thermodynamic temperature of the triple point of water.

Kilo (k)

A prefix that multiplies a basic unit by 1000. Example: 1 kilometer = 1000 meters.

Kilovolt (kV)

The unit of electrical potential equal to 1000 volts.

Kinetic Energy

The energy that a body possesses by virtue of its mass and velocity; the energy of motion.

Laser

A device that produces a coherent, intense, and collimated beam of electromagnetic radiation of well-determined wave length, through a physical process known as stimulated emission.

Late Effect

A biological effect that occurs long after radiation exposure ends (e.g., cancer).

Lethal Dose (LD) 50/60

The dose of radiation expected to cause death within 60 days to 50 percent of those exposed. Generally accepted as 500 rad received over a short period of time.

Light Water

Ordinary water (H₂O) as distinguished from heavy water (D₂O).

Light Water Reactor

The most common type of nuclear reactor in which ordinary water is used as the moderator and coolant and enriched uranium is used as fuel. They are usually boiling water reactors or pressurized water reactors.

Limits

The permissible upper bounds of radiation doses (dose limits).

Linear Energy Transfer

A measure of the ability of biological material to absorb ionizing radiation; specifically, for charged particles traversing a medium, the energy lost per unit length of path as a result of those collisions with electrons in which the energy loss is less than a specified maximum value. A similar quantity may be defined for photons.

Liquid Nitrogen

A major coolant for various types of radiation detectors.

Lixiscope

A portable light intensified imaging device using a sealed source.

Low-Level Waste

A general term for a wide range of radioactive wastes that includes materials such as laboratory wastes and protective clothing that contain only small amounts of radioactivity, pose few health hazards, and are usually disposed of by shallow land burial.

Low Population Zone

An area of low population density often required around a nuclear installation. The number and density of residents is of concern in emergency planning so that certain protective measures (such as notification and instructions to residents) can be accomplished in a timely manner.

Lung Class (Days, Weeks, or Years or Fast Absorption, Moderate Absorption, and Slow Absorption)

A classification scheme for inhaled material according to its rate of clearance from the pulmonary region of the lung.

Lymphocyte

A mononuclear leukocyte; chiefly a product of lymphoid tissue and participates in humoral and cell-mediated immunity.

Mach Stem

The shock front formed by the merging of the primary and reflected shock fronts from an explosion.

Mass-Energy Equation

The equation developed by Albert Einstein which is usually given as $E = mc^2$, showing that, when the energy of a body changes by an amount E (no matter what form the energy takes), the mass, m , of the body will change by an amount equal to E/c^2 . The c^2 , the square of the speed of light in a vacuum, may be regarded as the conversion factor relating units of mass and energy. The equation predicted the possibility of releasing enormous amounts of energy by the conversion of mass to energy. It is also called the Einstein equation.

Mass Number

The number of nucleons (neutrons and protons) in the nucleus of an atom. Also known as the atomic weight of an atom.

Maximum Permissible Dose

That radiation dose which a military commander or other appropriate authority may prescribe as the limiting cumulative radiation dose to be received over a specific period of time by members of the command, consistent with operational military consideration.

Mean Free Path

The average distance that photons of a given energy travel before an interaction in a given medium occurs. It is equal to the reciprocal of the attenuation coefficient. Thus, the distance x in ordinary units can be converted into the dimensionless distance $\square x$, the number of mean free path lengths.

Mean Lifetime

An average lifetime related to the biologic of the effective half-time, or the physical half-life. Effective mean lifetime = 1.443 x effective half-time.

Mega

A prefix that multiplies a basic unit by 1,000,000.

Megacurie

One million curies. (See Curie.)

Meltdown

A situation in a nuclear reactor, in which the core materials melt.

MeV

A megaelectronvolt, 1 million electronvolts.

meV

A millielectronvolt, 1/1000 of an electronvolt.

Member of the Public

An individual in a controlled or unrestricted area. However, an individual is not a member of the public during any period in which the individual receives an occupational dose.

Microcurie

A one-millionth part of a curie.

Milli

Prefix meaning 10^{-3} , or 1/1000th part.

Milling

A process in the uranium fuel cycle by which ore containing only a very small percentage of uranium oxide is converted into material containing a high percent of uranium oxide, often referred to as yellowcake.

Millirem

A one-thousandth part of a rem. (See Rem.)

Milliroentgen

A one-thousandth part of a roentgen. (See Roentgen.)

Missile Technology Control Regime

A joint effort of 23 member countries led by the U.S. to control the proliferation of missiles (and missile technology) capable of delivering nuclear weapons. <http://fas.org/nuke/control/mtr/>

Moderator Temperature Coefficient of Reactivity

The property of a reactor moderator to slow down fewer neutrons as its temperature increases. This acts to stabilize power reactor operations.

Monitoring, Radiation

The measurement of radiation levels, concentrations, surface area concentrations or quantities of radioactive material and the use of the results of these measurements to evaluate potential exposures and doses.

Nadir

The point at which a blood count drops to or closest to zero before beginning to increase.

Nano

A prefix that divides a basic unit by one billion.

Nanocurie

One billionth part of a curie.

Natural Radiation

See Background Radiation.

Natural Uranium

Uranium is found in nature. It contains 0.7 percent uranium-235, 99.3 percent uranium-238, and a trace of uranium-234.

Negative Temperature Coefficient

See Moderator Temperature Coefficient of Reactivity.

Neutron

An uncharged elementary particle with a mass slightly greater than that of the proton, and found in the nucleus of every atom heavier than hydrogen.

Neutron Capture

The process in which an atomic nucleus absorbs or captures a neutron.

Neutron Chain Reaction

A process in which some of the neutrons released in one fission event causes other fissions to occur. There are three types of chain reactions—

- a. Non-sustaining (see Subcriticality).
- b. Sustaining (see Criticality).
- c. Multiplying (see Supercriticality).

Neutron Generation

The release, thermalization, and absorption of fission neutrons by a fissile material and the fission of that material producing a second generation of neutrons. In a typical reactor system, there are about 40,000 generations of neutrons every second.

Neutron Radiography

The industrial use of neutrons to produce x-ray like images of the internal structure of objects. It has been used to examine explosive devices.

Neutron Source

A radioactive material (i.e., decays by neutron emission) that can be inserted into a reactor to ensure that a sufficient quantity of neutrons is available to start a chain reaction and register on neutron detection equipment.

Non-penetrating Radiation

External radiation of such low penetrating power that the absorbed dose from human exposure is in the skin and does not reach deeper organs to any damaging extent.

Neutron, Thermal

A neutron that has (by collision with other particles) reached an energy state equal to that of its surroundings.

Noble Gas

A gaseous chemical element that does not readily enter into chemical combination with other elements. An inert gas. (See Fission Gases.)

Non-ionizing Radiation

Electromagnetic radiation that does not have sufficient energy to remove electrons from the outer shells of atoms. Types of non-ionizing radiation would include ultraviolet, visible light, infrared, microwave, radio and television, and extremely low frequency. The primary health effect from high exposure levels of non-ionizing radiation arises from heat generation in body tissue.

Nonstochastic Effect

Health effects, the severity of which varies with the dose and for which a threshold is believed to exist. Radiation-induced cataract formation is an example of a non-stochastic effect (also called a Deterministic Effect).

Normal Form Radioactive Material

Radioactive material that has not been demonstrated to qualify as special form radioactive material.

Nuclear Accident Response Procedures

A manual summarizing Department of Defense responsibilities and provides procedural guidance for a joint response to accidents involving nuclear weapons or components thereof in the U.S. and its territories or possessions. http://www.dtra.mil/cs/cs_narp.html

Nuclear Detonation

A nuclear explosion resulting from fission or fusion reactions in nuclear materials such as from a nuclear weapon.

Nuclear Device

Nuclear fission together with the arming, fuzing, firing, chemical explosive, canister, and diagnostic measurement equipment that have not reached the development status of an operational nuclear weapon.

Nuclear Emergency Search Team

A cadre of highly trained technical personnel that maintain on-call, deployable search, identification and diagnostic capabilities to respond to lost or stolen nuclear weapons and special nuclear materials; nuclear explosive threats; and radiation dispersal threats.

<http://www.milnet.com/milnet/nest.htm>

Nuclear Energy

The energy liberated by a nuclear reaction (fission or fusion) or by radioactive decay.

Nuclear Force

A powerful short-ranged attractive force that holds together the particles inside an atomic nucleus.

Nuclear Materials Licensing Requirements

Within the U.S., a license is required from the NRC to deliver, receive, possess, use, or transfer thorium, plutonium, or uranium. A specific license is required to authorize a general licensee to acquire, deliver, receive, possess, use, transfer, import, or export special nuclear material.

Nuclear Power Plant

Any device or assembly that converts nuclear energy into useful power. In a nuclear electric power plant, heat produced by a nuclear reactor is used to produce steam to drive a turbine that in turn drives an electricity generator.

Nuclear Radiation

See Radiation.

Nuclear / Radiological Agent

Traditionally, uranium and plutonium used to produce a nuclear detonation via the fission or fusion process. The fuel is compressed into a given volume to cause supercriticality. The major products include blast effects, heat, nuclear radiation, and fallout.

Nuclear Reaction

See Reaction.

Nuclear Regulatory Commission (NRC)

The NRC is an independent agency established by the Energy Reorganization Act of 1974 to regulate civilian use of nuclear materials. Its mission is to regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, to promote the common defense and security, and to protect the environment. <http://www.nrc.gov/>

Nuclear Technology Security Program

A Department of Energy program dedicated to controlling the transfer or dissemination outside the U.S. or certain unclassified equipment and materials and scientific and technical information.

<http://www.td.anl.gov/Programs/nmts/nmts.html>

Nuclear Waste

The radioactive by-products formed by fission and other nuclear processes in a reactor. It is separated from irradiated fuel in a processing plant.

Nuclear Weapon

A device that releases nuclear energy in an explosive manner as the result of nuclear chain reactions involving the fission or fusions, or both, of atomic nuclei.

Nuclear Weapon Incident

An unexpected event involving a nuclear weapon, facility, or component resulting in any of the following, but not constituting a nuclear weapon(s) accident:

a. An increase in the possibility of explosion or radioactive contamination.

- b. Errors committed in the assembly, testing, loading, or transportation of equipment, and / or the malfunctioning of equipment and material which could lead to an unintentional operation of all or part of the weapon arming and / or firing sequence, or which could lead to a substantial change in yield, or increased dud probability.
- c. Any act of God, unfavorable environment, or condition resulting in damage to a weapon, facility, or component.

Nucleated Blood Cell

A blood cell that contains a nucleus, to include white cells and reticulocytes.

Nucleon

Common name for a constituent particle of the atomic nucleus. At present, applied to protons and neutrons but may include any other particles found to exist in the nucleus.

Nucleus, (Pl. Nuclei)

The small, central, positively charged regions of an atom that carries essentially all the mass. Except for the nucleus of ordinary (light) hydrogen, which has a single proton, all atomic nuclei contain both protons and neutrons. The number of protons determines the total positive charge, or atomic number; this is the same for all the atomic nuclei of a given chemical element. The total number of neutrons or protons is called the mass number (or Atomic Nucleus).

Nuclide

A general term referring to all known isotopes, both stable (279) and unstable (about 5000), of the chemical elements.

Occupational Dose

The dose received by an individual in a restricted area or in the course of employment in which the individual's assigned duties involve exposure to radiation and to radioactive material from licensed and unlicensed sources of radiation, whether in the possession of the licensee or other person. Occupational dose does not include dose received from background radiation, as a patient from medical practices, from voluntary participation in medical research programs, or as a member of the general public.

Open Beam Configuration

An analytical x-ray system in which an individual could accidentally place some part of his body in the primary beam path during normal operation.

Oralloy

Uranium enriched in the isotope uranium-235. This material is an excellent fission fuel and is capable of sustaining a chain reaction.

Parent

A radionuclide that upon radioactive decay or disintegration yields a specific nuclide (the daughter/progeny).

Particulate Radiation

Radiation in the form of particles as opposed to electromagnetic radiation.

Penetrating Radiation

External radiations of such penetrating power that the absorbed dose from exposure is delivered in significant and damaging quantities to human tissues and other organs. It refers to most gamma radiation, x-ray radiation, and neutron radiation.

Personnel Monitoring

The determination of the degree of radioactive contamination on individuals using survey meters, or the determination of radiation dosage received by means of dosimetry devices.

Phantom

A volume of material behaving in a manner similar to tissue with respect to the attenuation and scattering of radiation.

Photodosimetry

The determination of the cumulative dose of ionizing radiation by use of photographic film.

Photon

A quantum (or packet) of energy emitted in the form of electromagnetic radiation. Gamma rays and x-rays are examples of photons.

Phototimer

A method for controlling radiation exposures to image receptors by the amount of radiation that reaches a radiation monitoring device(s). The radiation monitoring device(s) is part of an electronic circuit that controls the duration of time the tube is activated.

Picocurie

One trillionth part of a curie.

Pig

A container (usually lead) used to ship or store radioactive materials. The thick walls protect the person handling the container from radiation. Large containers are commonly called casks.

Pit

The components of a nuclear warhead located within the inner boundary of the high explosive assembly, but not including safing materials.

Planned Special Exposure

An infrequent exposure to radiation, separate from and in addition to the annual dose limits.

Plume

Airborne material spreading from a particular source; the dispersal of particles, gases, vapors, and aerosols in the atmosphere.

Plutonium (Pu)

A heavy, radioactive, manmade metallic element with atomic number 94. Its most important isotope is fissile plutonium-239, which is produced by neutron irradiation of uranium-238.

Pocket Dosimeter

A small ionization detection instrument that indicates radiation exposure directly. An auxiliary charging device is usually necessary.

Positron

Particle equal in mass, but opposite in charge, to the electron; a positive electron.

Power Reactor

A nuclear reactor designed to produce electricity as distinguished from reactors used primarily for research for producing radiation or fissionable materials.

Primary Stage

The fission trigger or first stage of a thermonuclear weapon or device.

Projected Dose

Future dose calculated for a specified time period on the basis of estimated or measured initial concentrations of radionuclides or exposure rates and in the absence of protective actions.

Proportional Counter

An instrument in which an electronic detection system receives pulses that are proportional to the number of ions formed in a gas-filled tube in ionizing radiation.

Protective Action

An activity conducted in response to an incident or potential incident to avoid or reduce radiation dose to members of the public (sometimes called a protective measure).

Protective Barrier

A radiation absorbing material(s) used to reduce radiation exposure. The types of protective barriers are as follows:

- a. Primary Protective Barrier: the material, excluding filters, placed in the useful beam, for protection purposes, to reduce the radiation exposure.
- b. Secondary Protective Barrier: a barrier sufficient to attenuate the stray radiation to the required degree.

Proton

An elementary nuclear particle with a positive electric charge located in the nucleus of an atom. (See Atomic Number.)

Public Dose

The dose received by a member of the public from exposure to radiation and to radioactive material released by a licensee, or to another source of radiation either within a licensee's controlled area or in unrestricted areas. It does not include occupational dose or doses received from background radiation, as a patient from medical practices, or from voluntary participation in medical research programs.

Quality Factor

The modifying factor that is used to derive dose equivalent from absorbed dose.

Quantum Theory

The concept that energy is radiated intermittently in units of definite magnitude called quanta, and absorbed in a like manner. (See Photon.)

Rad

The special unit of absorbed dose. One rad is equal to an absorbed dose of 100 ergs/g or 0.01 J kg⁻¹ (0.01 Gy).

RADIAC

An acronym derived from "radioactivity detection indication and computation," a generic term applying to radiological instruments or equipment.

Radiation

Alpha particles, beta particles, gamma rays, x-rays, neutrons, high-speed electrons, high-speed protons, and other particles capable of producing ions. Radiation, as used in this part, does not include non-ionizing radiation, such as radio- or microwaves, or visible, infrared, or ultraviolet light. (See Ionizing Radiation.)

Radiation Area

An area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent in excess of 0.005 rem (0.05 mSv) in 1 hour at 30 cm from the radiation source or from any surface that the radiation penetrates.

Radiation Detection Instrument

A device that detects and records the characteristics of ionizing radiation.

Radiation Dispersal Weapon

Any device other than a nuclear exposure device and including weapons or equipment that are specifically designed to disseminate radioactive material to cause destruction, fear, or injury by means of the radiation produced by the decay of such material.

Radiation Machine

Any device capable of producing radiation except those that produce radiation only from radioactive material.

Radiation Shielding

Reduction of radiation by interposing a shield of absorbing material between any radioactive source and a person, work area, or radiation-sensitive device.

Radiation Sickness

The complex of symptoms characterizing the disease known as radiation injury, resulting from excessive exposure to the whole body (or large part) to ionizing radiation. The earliest of these symptoms are nausea, fatigue, vomiting, and diarrhea, which may be followed by loss of hair (epilation), hemorrhage, inflammation of the mouth and throat, and general loss of energy. In severe cases, where the radiation exposure has been relatively large, death may occur within 2 to 4 weeks. Those who survive 6 weeks after the receipt of a single large dose of radiation may generally be expected to recover. (See Syndrome.)

Radiation Source

Usually a manmade-sealed source of radiation used in teletherapy, radiography, as a power source for batteries, or in various types of industrial gauges. Machines such as accelerators and radioisotope generators and natural radio nuclides may be considered sources.

Radiation Standards

Exposure standards, permissible concentrations, rules for safe handling, regulations for transportation, regulations for industrial control of radiation and control of radioactive material by legislative means.

Radiation Syndrome

See Radiation Sickness.

Radiation Warning Symbol

An officially prescribed symbol (a magenta, purple, or black trefoil) on a yellow background that must be displayed where certain quantities of radioactive materials are present or where certain doses of radiation could be received.

Radioactive Cloud

An all-inclusive term for the cloud of hot gases, smoke, dust, dirt, and debris from a weapon and the environment. The cloud is carried aloft in conjunction with the rising fireball produced by the detonation of a nuclear weapon.

Radioactive Contamination

Deposition of radioactive material in any place where it may harm persons or equipment.

Radioactive Decay

The process in which a radioactive nucleus emits radiation and changes to a different isotope or element.

Radioactive Isotope

A radioisotope. (See Radioisotope.)

Radioactive Series

A succession of nuclides, each of which transforms by radioactive disintegration into the next until a stable nuclide results. The first member is called the parent, the intermediate members are called daughters, and the final stable member is called the end product.

Radioactive Waste

See Waste, Radioactive.

Radioactivity

The spontaneous emission of radiation, generally alpha or beta particles, often accompanied by gamma rays, from the nucleus of an unstable isotope.

Radioassay

The process of identifying the radioactive elements and their amounts in a sample of material such as low-level waste.

Radiographer

Any individual who performs or personally supervises industrial radiographic operations and who is responsible to the licensee or registrant for assuring compliance with the requirements of these regulations and all license and / or certificate of registration conditions.

Radiological Accident

A loss of control over radiation or radioactive material which presents a potential hazard to personnel, public health, property, or the environment.

Radioisotope

An unstable isotope of an element that decays or disintegrates spontaneously, emitting radiation. Approximately 5000 natural and artificial radioisotopes have been identified.

Radiological Assistance Program Team

A part of the Nuclear Incident Response, it is a team of expert personnel who assist state and local authorities in dealing with accidents or incidents involving radiation.

<http://www.llnl.gov/nai/rdiv/nucinc.html>

Radiological Control Team

A special radiological team of the U.S. Army and U.S. Navy organized to provide technical assistance and advice in radiological emergencies.

Radiological Release

An unplanned incident in which radiological material is discharged into the biosphere.

Radiological Survey

The evaluation of the radiation hazards accompanying the production, use, or existence of radioactive materials under a specific set of conditions. Such evaluation customarily includes a physical survey of the disposition of materials and equipment, measurements or estimates of the levels of radiation that may be involved, and a sufficient knowledge of processes affecting these materials to predict hazards resulting from unexpected or possible changes in materials or equipment.

Radiology

That branch of medicine dealing with the diagnostic and therapeutic applications of radiant energy, including x-rays and radioisotopes.

Radionuclide

A radioisotope.

Radiosensitivity

The relative susceptibility of cells, tissues, organs, organisms, or other substances to the injurious action of radiation.

Radium (Ra)

A radioactive metallic element with atomic number 88. As found in nature, the most common isotope has a mass number of 226. It occurs in minute quantities associated with uranium in pitchblende, carnotite and other minerals.

Radon (Rn)

A radioactive element that is one of the heaviest gases known. Its atomic number is 86, and its mass number is 222. It is a decay product or progeny of radium.

Rainout

The removal of radioactive particles from a nuclear cloud by precipitation when the cloud is within a rain cloud.

Reactivity

A term expressing the departure of a reactor system from criticality. A positive reactivity addition indicates a move toward supercriticality (power increase). A negative reactivity addition indicates a move toward subcriticality (power decrease).

Reactor

A facility that contains a controlled nuclear fission chain reaction. It can be used to generate electricity, conduct research, and produce isotopes and manmade elements such as plutonium.

Recording Level (RL) (for intake of radionuclides)

Level of committed dose equivalent or intake, above which the result is of sufficient interest to be worth keeping and interpreting. Recording levels are defined for routine monitoring, RLR, and for special or operational monitoring, RLS. Derived recording levels, DRLR and DRLS, are values of body or organ content or elimination rate that correspond to recording levels, RLR and RLS. The values are calculated by means of defined models of intake, deposition, uptake, retention, and elimination.

Recovery

The process of reducing radiation exposure rates and concentrations of radioactive material in the environment to levels acceptable for unconditional occupancy or use.

Recycling

The reuse of fissionable material after it has been recovered by chemical processing from spent or depleted reactor fuel, re-enriched and then re-fabricated into new fuel elements.

Reentry

Temporary entry into a restricted zone under controlled conditions.

Rem (Roentgen Equivalent Man)

The special unit of any of the quantities expressed as dose equivalent. The dose equivalent in rem is equal to the absorbed dose in rad multiplied by the quality factor (1 rem = 0.01 Sv).

Respiratory Protective Device

An apparatus, such as a respirator, used to reduce the individual's intake of airborne radioactive materials.

Roentgen (R)

A unit of exposure to ionizing radiation. It is that amount of gamma or x-rays required to produce ions carrying 1 electrostatic unit of electrical charge in 1 cm³ of dry air under standard conditions.

Safing

As applied to weapons and ammunition, the changing from a state of readiness to initiation to a safe condition that prevents an unauthorized firing.

Scattered Radiation

Radiation that, during passage through matter, has been deviated in direction.

Scavenging

The selective removal of material from the radioactive cloud by inert substances, such as precipitation, introduced into the fireball.

Scintillation Detector or Counter

The combination of phosphor, photo-multiplier tube, and associated electronic circuits for counting light emissions produced in the phosphor by ionizing radiation.

Secondary Radiation

Radiation originating as the result of absorption of other radiation in matter. It may be either electromagnetic or particulate in nature.

Seismic Category I

A term used to define structures, systems and components that are designed and built to withstand the maximum potential (earthquake) stresses for the particular region that a nuclear plant is sited.

Seivert (Sv)

The SI unit of any of the quantities expressed as dose equivalent. The dose equivalent in Sv is equal to the absorbed dose in gray multiplied by the quality factor (1 Sv - 100 rem).

Shallow-Dose Equivalent (Hs)

Applying to the external exposure of the skin or an extremity is taken as the dose equivalent at a tissue depth of 0.007 cm (7 milligram per square meter (mg/m²)) averaged over an area of 1 square centimeter (cm²).

Sheltering

The use of a structure for radiation protection from an airborne plume and / or deposited radioactive materials.

Shielded Room Radiography

Industrial radiography conducted in a room shielded so that radiation levels at every location on the exterior meet the limitations specified in the regulations.

Shielding

Any material or obstruction that absorbs radiation and thus tends to protect personnel or materials from the effects of ionizing radiation.

Shock Wave

A pressure pulse that is initiated by the expansion of hot gases produced in an explosion and that is continuously propagated in the medium surrounding the explosion.

Short-Lived Daughters

Radioactive progeny of radioactive isotopes that have half-lives on the order of a few hours or less.

Site Boundary

That line beyond which the land or property is not owned, leased, or otherwise controlled by the licensee.

Skin Decontamination

Removal of radioactive material from the skin.

Somatic Cell

Body cell other than a germ cell.

Somatic Effects of Radiation

Effects of radiation limited to the exposed individual, as distinguished from genetic effects, which may also affect subsequent unexposed generations.

Source Image Receptor Distance

The distance from the source to the center of the input surface of the image receptor.

Source Material

- a. Uranium or thorium or any combination of uranium and thorium in any physical or chemical form.
- b. Ores that contain, by weight, one-twentieth of 1 percent (0.05 percent), or more, of uranium, thorium, or any combination of uranium and thorium.

Special Form Radioactive Material

Radioactive material that satisfies the following conditions:

- a. It is either a single solid piece or is contained in a sealed capsule that can be opened only by destroying the capsule.
- b. The piece or capsule has at least one dimension not less than 5 mm (0.197 inch).
- c. It satisfies the test requirements specified by the NRC.

Special Nuclear Material

- a. Plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235, and any other material that the NRC determines to be special nuclear material but does not include source material.
- b. Any material artificially enriched by any of the foregoing but does not include source material.

Spent Fuel

Fuel elements that have been removed from the reactor because they contain too little fissile material and too high a concentration of radioactive fission products. They are highly radioactive.

Stable Isotope

An isotope that does not undergo radioactive decay.

Stay Time

The period during which personnel may remain in a restricted area before accumulating some permissible dose.

Stochastic Effects

Health effects that occur randomly and for which the probability of the effect occurring, rather than its severity, is assumed to be a linear function of dose without threshold. Hereditary effects and cancer incidence are examples of stochastic effects.

Stratosphere

A relatively stable layer of the atmosphere extending from the tropopause to an altitude of about 30 miles.

Subcriticality

The condition of a nuclear reactor system when the rate of production of fission neutrons is lower than the rate of production in the previous generation due to increased neutron leakage and poisons.

Subsurface Burst

The explosion of a nuclear weapon beneath the surface of the Earth.

Supercriticality

The condition for increasing the level of operation of a reactor. The rate of fission neutron production exceeds all neutron losses, and the overall neutron population increases.

Surety

Umbrella term for safety, security, and use control of nuclear weapons.

Survey, Radiological

An evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation. When appropriate, such an evaluation includes a physical survey of the location of radioactive material and measurements or calculations of levels of radiation, or concentrations or quantities of radioactive material present.

Survey Meter

Any portable radiation detection instrument especially adapted for inspecting an area to establish the existence and amount of radioactive material present.

Tail, Tailings

The depleted stream of an enrichment plant or stage after the enriched product is removed, expressed as percent of uranium-235 content.

Technologically Enhanced

Substance that because of processing contains more naturally occurring radioactive material than originally.

Teletherapy

Therapeutic irradiation in which the source of radiation is at a distance from the body.

Tenth Thickness

The thickness of a given material that will decrease the amount (or dose) of radiation to one-tenth of the amount incident upon it. Two-tenth thickness will reduce the dose received by a factor of 10 x 10 (i.e., 100, and so on). (See Shielding.)

Terrestrial Radiation

The portion of natural radiation (background) that is emitted by naturally occurring radioactive materials in the earth.

Thermal Radiation

Electromagnetic radiation (infrared, visible, and ultraviolet) emitted from the fireball of a nuclear explosion as a consequence of high temperatures.

Thermal Reactor

A reactor in which the fission chain reaction is sustained by low-energy neutrons that have been moderated to thermal energy in order to produce a chain reaction.

Thermonuclear

An adjective referring to the process in which very high temperatures are used to bring about the fusion of light nuclei, such as those of the hydrogen isotopes, deuterium and tritium, with the accompanying liberation of energy. (See Fusion.)

Tomogram

The depiction of the x-ray attenuation properties of a section through the body.

Total Effective Dose Equivalent (TEDE)

The sum of the deep-dose equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures).

Transport Index

The dimensionless number, rounded up to the first decimal place, placed on the label of a package to designate the degree of control to be exercised by the carrier during transportation. The transport index is the number expressing the maximum radiation level in millirem per hour at 1 meter from the external surface of the package.

Transition

A nuclear change from one energy state to another, generally accompanied by the emission of particles. Often called decay or disintegration.

Tritium

A radioactive isotope of hydrogen (one proton, two neutrons). Because it is chemically identical to natural hydrogen, tritium can easily be taken into the body by any ingestion path. Its radioactive half-life is about 12 1/2 years.

Tube

An x-ray tube, unless otherwise specified.

Type A Quantity

A quantity of radioactive material, the aggregate radioactivity of which does not exceed A1 for special form radioactive material or A2 for normal form radioactive material.

Type B Quantity

A quantity of radioactive material greater than a Type A quantity.

Ultraviolet

Electromagnetic radiation of a wavelength between the shortest visible violet and low-energy x-rays.

Uranium (U)

A radioactive element with the atomic number 92, and as found in natural ores, an atomic weight of approximately 238. The two principal natural isotopes are uranium-235 (0.7 percent of natural uranium), which is fissile, and uranium-238 (99.3 percent of natural uranium), which is fissionable by fast neutrons and is fertile. Natural uranium also includes a minute amount of uranium-234.

U.S. Munitions List

The following is a list of items designated by the President to require export licenses to all nuclear countries: firearms; artillery projectors; ammunition; launch vehicles, etc.; explosives, propellants, incendiary agents and their constituents; vessels of war and special naval equipment; tanks and military vehicles; aircraft and associated equipment; military training equipment; protective personnel equipment; military electronics; fire control, range finder, optical and guidance and control equipment; auxiliary military equipment; toxicological agents and equipment and radiological equipment; spacecraft systems and associated equipment; nuclear weapons design and related equipment; classified articles, technical data, and defense services

not otherwise enumerated; submersible vessels, oceanographic and associated equipment; and miscellaneous articles. <http://www.ciponline.org/facts/munilist.htm>

Very High Radiation Area

An area, accessible to individuals, in which radiation levels could result in an individual receiving an absorbed dose in excess of 500 rad (5 Gys) in 1 hour at 1 m from a radiation source or from any surface that the radiation penetrates. [Note: At very high doses received at high dose rates, units of absorbed dose (e.g., rad and Gy) are appropriate, rather than units of dose equivalent (e.g., rem and Svs).]

Venting

The escape through the surface to the atmosphere of gases or radioactive products from a subsurface high explosive or nuclear detonation.

Vessel

The part of the nuclear reactor that contains the nuclear fuel.

Warhead

That part of a missile, projectile, torpedo, rocket, or other munition that contains either the nuclear or thermonuclear system, high explosive system, chemical or biological agents, or inert materials intended to inflict damage.

Washout

The removal of radioactive particles from a nuclear cloud by precipitation when the cloud is below a rain or snow cloud.

Weapon Debris

The highly radioactive material consisting of fission products, various products of neutron capture, unspent fuel, and shards of bomb casing that remain after a nuclear explosion.

Weapon System

Collective term for the nuclear and nonnuclear components, systems, and subsystems that compose a nuclear weapon.

Weathering Factor

The fraction of radioactivity remaining after being affected by average weather conditions for a specified period of time.

Weighting Factor WT

For an organ of tissue (T) is the proportion of the risk of stochastic effects resulting from irradiation of that organ or tissue to the total risk of stochastic effects when the whole body is irradiated uniformly. Presently, the organ dose weighting defined by the NRC and ICRP differ.

Well Logging

All operations involving the lowering and raising of measuring devices or tools which may contain sources of radiation into well bores or cavities for the purpose of obtaining information about the well or adjacent formations.

Whole Body

For purposes of external exposure, head, trunk, arms above the elbow, or legs above the knee.

Whole-Body Counter

A device used to identify and measure the radiation in the body (body burden) of human beings and animals; it uses heavy shielding to keep out background radiation and ultra-sensitive radiation detectors and electronic counting equipment.

Whole-Body Exposure

An exposure of the body to radiation, in which the entire body rather than an isolated part, is irradiated. Where a radioisotope is uniformly distributed throughout the body tissues, rather than being concentrated in certain parts the irradiation can be considered as a whole-body exposure.

Wipe Sample (Swipe Sample)

A sample made for the purpose of determining the presence of removable radioactive contamination on a surface. It is done by wiping, with slight pressure, a piece of soft filter paper over a representative type of surface area.

Working Level (WL)

Any combination of short-lived radon daughters (for radon-222, polonium-218, lead-214, bismuth-214, and polonium-214; and for radon -220: polonium-216, lead-212, bismuth-212, and polonium-212) in 1 liter of air that will result in the ultimate emission of 1.3×10^5 million electron volts of potential alpha particle energy.

Working Level Month (WLM)

An exposure to 1 working level for 170 hours (2,000 working hours per year/12 months per year = approximately 170 hours per month).

Wound Contamination

The presence of a radioactive substance in a wound, whether an abrasion, puncture, or laceration; condition in which the loss of intact skin increases the risk that the contaminant will be absorbed.

X-ray Control

A device that controls input power to the x-ray high voltage generator and / or the x-ray tube. It includes equipment such as timers, photo-timers, automatic brightness stabilizers, and similar devices, which control the technique factors of an x-ray exposure.

X-ray Equipment

An x-ray system, subsystem, or component thereof. Types of x-ray equipment are as follows:

- a. Mobile x-ray equipment means x-ray equipment mounted on a permanent base with wheels and / or casters for moving while completely assembled.
- b. Portable x-ray equipment means x-ray equipment designed to be hand carried.
- c. Stationary x-ray equipment means x-ray equipment that is installed in a fixed location.

X-ray High Voltage Generator

A device that transforms electrical energy from the potential supplied by the x-ray control to the tube operating potential. The device may also include means for transforming alternative current to direct current, filament transformers for the x-ray tube(s), high voltage switches, electrical protective devices, and other appropriate elements.

X-ray System

An assemblage of components for the controlled production of x-rays. It includes minimally an x-ray high voltage generator, an x-ray control, a tube housing assembly, a beam limiting device, and the necessary supporting structures. Additional components that function with the system are considered integral parts of the system. X-ray subsystem means any combination of two or more components of an x-ray system.

X-rays

Penetrating electromagnetic radiation (photon) having a wavelength that is much shorter than that of visible light. Rays produced by excitation of the electron field around certain nuclei are called characteristic x-rays. In nuclear reactions, it is customary to refer to photon originating in the nucleus as gamma rays, and to those originating in the electron field of the atom as X-rays.

Yellowcake

A concentrated form of uranium ore known as UO.

Yield

The energy released in a nuclear explosion, expressed usually as the number of tons of TNT that would release the same amount of energy.

Section 4 – Biological Terms**Acetylcholine (ACH, ACh)**

The neurotransmitter substance at cholinergic synapses that causes cardiac inhibition, vasodilation, gastrointestinal peristalsis, and other parasympathetic effects. It is liberated from preganglionic and post-ganglionic endings of parasympathetic fibers and from pre-ganglionic fibers of the sympathetic nervous system as a result of nerve injuries, whereupon it acts as a transmitter on the effector organ; it is hydrolyzed into choline and acetic acid by acetylcholinesterase before a second impulse may be transmitted.

Acetylcholinesterase (AChE)

True cholinesterase. Acetylcholinesterase hydrolyzes acetylcholine within the Central Nervous System and peripheral neuroeffector functions.

Active Immunization

The act of artificially stimulating the body to develop antibodies against infectious disease by the administration of vaccines or toxoids.

Acute Samples

Samples (e.g., blood, sputum, urine, etc.) taken from a patient who is experiencing the full symptoms of a disease.

Adenopathy

Swelling or morbid enlargement of the lymph nodes.

Aedes Aegypti

Asian tiger mosquito; an alien mosquito established in the southeast U.S. and from which Eastern Equine Encephalitis has been isolated.

Aerosol

A suspension of very small solid liquid particles in gas (such as air).

Alpha Interferon

One of a group of heat-stable and soluble basic antiviral glycoproteins produced by cells exposed to the action of a virus, bacterium, or toxin; used medically as an antiviral compound.

Amikacin

An antibiotic drug effective against Gram-negative bacteria (particularly gentamicin- and tobramycin-resistant strains) or staphylococci.

Amino Acid

An organic compound having both an amino group (NH₂) and a carboxylic acid (COOH) group.

Analgesic

- a. A compound capable of producing analgesia (i.e., one that relieves pain without producing anesthesia or loss of consciousness).
- b. Characterized by reduced response to painful stimuli.

Anaphylaxis

Hypersensitivity or abnormal reaction to a foreign substance (e.g., penicillin) induced by a small preliminary or sensitizing injection of the substance; it is an extreme form of allergy that often has serious consequences (i.e., swelling of tissues) and has been known to be fatal.

Anemia

A condition in which the blood is deficient in red blood cells, in hemoglobin, or in total volume.

Anthrax

A highly lethal infection caused by the bacterium *Bacillus anthracis*; normally, a disease of livestock that can be transmitted to man by direct contact with or ingestion of contaminated meat, hide, wool, hair, blood, or excreta. In most cases involving humans, the bacteria enters the body through skin wounds and infects the skin. In other cases, the bacteria may be ingested (eaten) or inhaled. Spore inhalation results in the inhalation form of anthrax that is characterized by a human fatality rate of nearly 90 percent. A short period of flu-like symptoms that is followed by respiratory distress; shock and death usually follows within 24 - 36 hours after onset of respiratory distress. Anthrax can be treated with antibiotics, but treatment must be started early to be effective.

Anthrax Vaccine

Inactivated vaccine made from protective antigen of organisms. Protects against dermal exposure in occupational setting. Vaccine may be less effective with overwhelming challenge of inhaled spores.

Antibody

A protein substance produced in the blood or tissues in response to a specific antigen, such as bacterium or a toxin. Antibodies destroy or weaken bacteria and neutralize organic poisons, thus forming the basis of immunity.

Antibiotic

A substance produced by or derived from a microorganism that inhibits or kills another microorganism (such as bacteria).

Anticonvulsant

An agent that prevents or arrests seizures.

Antigen

A molecule capable of eliciting a specific antibody or T-cell response.

Antiserum

The blood fluid remaining after blood cells, fibrinogen, and fibrin are removed, and which also contains antibodies; immune serum.

Antitoxin

An antibody formed in response to and capable of neutralizing a biological poison; an animal serum containing antitoxins.

Arbovirus

A group of viruses transmitted to humans and animals from ticks and insects such as mosquitoes and sand flies; shortened form of arthropod-borne virus.

Arenavirus

A family of viruses that includes the viral Hemorrhagic Fevers, Lassa Fever, Argentine Hemorrhagic Fever, Venezuelan Hemorrhagic Fever, Brazilian Hemorrhagic Fever, and Bolivian Hemorrhagic Fever.

Arthralgia

Severe pain in a joint, especially one not inflammatory in character.

Aseptic

Preventing infection; free or freed of pathogens by use of disinfectants, filtration, etc.

AST

Aspartate aminotransferase, a liver enzyme.

Asthenia

Weakness or debility.

Ataxia

An inability to coordinate muscle activity during voluntary movement so that smooth movements occur. Most often due to disorders of the cerebellum or the posterior columns of the spinal cord; may involve the limbs, head, or trunk.

Atelectasis

The absence of gas from a part or the whole of the lungs, due to failure of expansion or resorption of gas from the alveoli.

Bacillus

A rod-shaped bacteria.

Bacteria

Small, free-living microscopic organisms that reproduce by simple division; the diseases they produce often respond to treatment with antibiotics. Bacteria are single-celled, can exist independently, and vary in size from about 0.3 μm to 10 μm . Bacteria can cause disease either by directly invading body tissue or by producing toxins once inside the body.

Bilirubin

A red bile pigment formed from hemoglobin during normal and abnormal destruction of erythrocytes. Excess bilirubin is associated with jaundice.

Biodegradation

The breakdown of substances of environmental concern by living cells.

Biohazard

A biological agent or condition (e.g., an infectious organism or insecure laboratory procedures) that constitutes a hazard to humans or the environment.

Biological Agent

A microorganism that causes disease in man, plants, or animals or causes the deterioration of material.

Biological Integrated Detection System (BIDS)

This system provides commanders with an effective system to detect and presumptively identify biological warfare agents. Its primary purpose is to provide information to limit the impact of large-area-coverage biological agent attacks that have the potential for catastrophic effects to U.S. forces at the operational levels of war. It consists of wheeled vehicles and specially trained operators.

Biological Operation

Employment of biological agents to produce casualties in man or animal and damage to plants or materiel, or defense against such employment.

Biological Warfare

The use, for military or terrorist purposes, of living organisms or material derived from them, which are intended to cause death or incapacitation in man, animals, or plants.

Biological Warfare Agent

Living organisms or their derivatives that can be used in weapons to cause incapacitation or death. Biological agents have the ability to reproduce themselves, thus they are less predictable than chemical agents.

Bioregulators / Modulators

Biological agents that are biochemical compounds, such as peptides that occur naturally in organisms.

Biosafety Level (BSL)

A designation that indicates specific precautions that must be taken when culturing or working with infectious organisms or toxins. Each biosafety level describes appropriate laboratory practices and techniques as well as required safety equipment. Biosafety levels range from BL-1, for organisms that can cause minor infections, to BL-4 for those that can cause fatal diseases for which there is no known cure.

Blood Agar

A mixture of blood and nutrient agar, used for the cultivation of many medically important microorganisms.

Bomblet

A small munition capable of containing a biological warfare agent; a submunition. Numerous bomblets could be packed inside a larger munition (e.g., a bomb or warhead) that would explode in the air scattering the bomblets over a relatively wide area.

Botulism

Poisoning by toxic derived from the microorganism *Clostridium botulinum*.

Bronchiolitis

The inflammation of the bronchioles often associated with bronchopneumonia.

Bronchitis

Inflammation of the mucous membrane of the bronchial tubes.

Brucella

A genus of encapsulated, non-motile bacteria (family *Brucellaceae*) containing short, rod-shaped to coccoid, Gram-negative cells. These organisms are parasitic, invading all animal tissues and causing infection of the genital organs, the mammary gland, and the respiratory and intestinal tracts, and are pathogenic for man and various species of domestic animals. They do not produce gas from carbohydrates. If used as a biological warfare agent, it would move likely be delivered by the aerosol route; the resulting infection would be expected to mimic natural disease.

Bubo

Inflammatory swelling of one or more lymph nodes, usually in the groin; the confluent mass of nodes usually suppurates and drains pus.

Bubonic Plague

A form of plague characterized by the presence of inflammatory swellings of lymph nodes that first occur at the regional node site closest to the bite of an infected flea. (See Plague.)

Bulla (Pl. Bullae)

A large blister appearing as a circumscribed area of separation of the epidermis from the subepidermal structure (subepidermal *bulla*) or as a circumscribed area of separation of epidermal cells (intraepidermal *bulla*) caused by the presence of serum, or occasionally by an injected substance.

Carbuncle

Deep-seated pyogenic infection of the skin and subcutaneous tissues, usually arising in several contiguous hair follicles, with formation of connecting sinuses; often preceded or accompanied by fever, malaise, and prostration.

Casual Contact

A person who has been in the proximity to an infected person or animal (e.g., sharing an airplane, bus, taxi, etc.) but has not been associated with body fluids or excretions.

Cerebrospinal

Relating to the brain and the spinal cord.

Chemoprophylaxis

Prevention of disease by the use of chemicals or drugs.

Cholera

A diarrheal disease caused by *Vibrio cholera*, a short, curved, gram-negative bacillus. Humans acquire the disease by consuming water or food contaminated with the organism. The organism multiplies in the small intestine and secretes an enterotoxin that causes a secretory diarrhea. If used as a biological warfare agent, it would most likely be used to contaminate water supplies.

Cholinergic

Relating to nerve cells or fibers that employ acetylcholine as their neurotransmitter.

Ciprofloxacin

An antibiotic drug useful in treating bacterial infections; the recommended antibiotic for treating anthrax infections as well as prophylaxis in a biological warfare setting.

Clostridium Perfringens Toxins

A common anaerobic bacterium associated with three distinct disease syndromes: gas gangrene or clostridial myonecrosis, enteritis necroticans, and clostridium food poisoning.

Coagulopathy

A disease affecting the coagulability of the blood.

Coccobacillus

A short, thick bacterial rod of the shape of an oval or slightly elongated coccus.

Communicable

Capable of being transmitted from human to human, animal to animal, animal to human, or human to animal.

Conjunctiva (Pl. Conjunctivae)

The mucous membrane investing the anterior surface of the eyeball and the posterior surface of the lids.

Contagion

The spread of disease from one person to another.

Crimean-Congo Hemorrhagic Fever

A viral disease caused by Crimean-Congo Hemorrhagic Fever virus. The virus is transmitted by ticks, principally of the genus *Hyalomma*. Humans become infected through tick bites, crushing an infected tick, or at the slaughter or viremic livestock. If used as a biological warfare agent, it would most likely be delivered by aerosol.

Cutaneous

Relating to the skin.

Cyanosis

A dark bluish or purplish coloration of the skin and mucous membrane due to deficient oxygenation of the blood, evident when reduced hemoglobin in the blood exceeds 5 g/100 mL.

Cytotoxin

Toxin that directly damages and kills the cell with which it makes contact.

Decay Rate

The predictable rate at which microorganisms die/or which biological agents lost viability.

Dengue

An acute infectious disease caused by an arbovirus transmitted by *Aedes aegypti* mosquitoes characterized by fever, chills, headache, nausea, vomiting, rash, and severe muscle and joint pains.

Diathesis

The constitutional or inborn state disposing to a disease, group of diseases, or metabolic or structural anomaly.

Diplopia

The condition in which a single object is perceived as two objects.

Distal

Situated away from the center of the body, or from the point of origin; specifically applied to the extremity or distant part of a limb or organ.

Dysarthria

A disturbance of speech and language due to emotional stress, to brain injury, or to paralysis, incoordination, or spasticity of the muscles used for speaking.

Dysentery

An often infectious disease characterized by severe diarrhea with passage of mucus and blood.

Dysphagia, dysphagy

Difficulty in swallowing.

Dysphonia

Altered voice production.

Dyspnea

Shortness of breath, a subjective difficulty or distress in breathing, usually associated with disease of the heart or lungs; occurs normally during intense physical exertion or at high altitude.

Eastern Equine Encephalitis

A member of the Alphavirus family transmitted by mosquitoes that generally infect horses but can cause epidemics in humans. Those infected present symptoms of malaise, headache, nausea, and vomiting.

Ebola

An RNA virus of the Filovirus family that causes one of the viral hemorrhagic fevers. Contact with infected body fluids rather than aerosols may be the principal mode of transmission. The incubation period is 20 to 21 days. The initial symptoms are fever, headache, sore throat, abdominal pain, vomiting and diarrhea. Those patients who exhibit hemorrhage usually follow a downhill course to shock and death.

Ecchymosis

A purplish patch caused by extravasation of blood into the skin, differing from petechiae only in size (larger than 3 mm diameter).

Eczema

Generic term for inflammatory conditions of the skin, particularly with vesiculation in the acute stage, typically erythematous, edematous, papular, and crusting; followed often by lichenification and scaling and occasionally by duskiness of the erythema and, infrequently, hyperpigmentation; often accompanied by sensations of itching and burning.

Edema

An accumulation of an excessive amount of watery fluid in cells, tissues, or serous cavities.

Enanthem, Enanthema

A mucous membrane eruption, especially one occurring in connection with one of the exantheas.

Encephalitis (Pl. Encephalitides)

Inflammation of the brain.

Endemic

A disease process that is continuously present in a given community, population, or geographic location.

Endotoxemia

Presence in the blood of endotoxins.

Endotoxin

A toxin produced in an organisms and liberated only when the organism disintegrates.

Endotracheal Intubation

Passage of a tube through the nose or mouth into the trachea for maintenance of the airway during anesthesia or for maintenance of an imperiled airway.

Enterotoxin

Toxins of bacterial origin that affect the intestines, causing diarrhea (e.g., toxins from *Vibrio cholera*, *Staphylococcus*, *Shigella*, *E. coli*, *Clostridium perfringens*, *Pseudomonas*).

Enzyme

A protein formed by living cells which acts as a catalyst on physiological chemical processes.

Enzyme-Linked Immunosorbent Assay (ELISA)

An immunological technique used to quantify the amount of antigen or antibody in a sample such as blood plasma or serum.

Epidemic

The condition in which a disease spreads rapidly through a community in which that disease is not normally present.

Epistaxis

Profuse bleeding from the nose.

Epizootic

a. Denoting a temporal pattern of disease occurrence in an animal population in which the disease occurs with a frequency clearly in excess of the expected frequency in that population during a given time interval.

b. An outbreak (epidemic) of disease in an animal population; often with the implication that it may also affect human populations.

Erythema

Redness of the skin due to capillary dilatation.

Erythema Multiforme

An acute eruption of macules, papules, or subdermal vesicles presenting a multiform appearance, the characteristic lesion being the target or iris lesion over the dorsal aspect of the hands and forearms; its origin may be allergic, seasonal, or from drug sensitivity, and the eruption, although usually self-limited (e.g., multiforme minor), may be recurrent or may run a severe course, sometimes with fatal termination (e.g., multiforme major).

Erythrocyte

A mature red blood cell.

Erythropoiesis

The formation of red blood cells.

Etiologic Agent

A viable microorganism or its toxin that causes, or may cause, human disease.

Exanthema

A skin eruption occurring as a symptom of an acute viral or coccal disease, as in scarlet fever or measles.

Exotoxin

A toxin secreted by a microorganism into the surrounding medicine.

Extracellular

Outside the cells.

Extraocular

Adjacent to but outside the eyeball.

Fasciculation

Involuntary contractions, or twitchings, of groups (fasciculi) of muscle fibers, a coarser form of muscular contraction than fibrillation.

Febrile

Denoting or relating to fever.

Filovirus

A member of the Filoviridae viral family. Filoviruses are highly pathogenic and capable of epidemic transmission. The family includes the Ebola and Marburg viruses. Filoviruses are stringshaped, often with a little hook or loop at one end.

Flash Message

A communication message with top priority to warn units of an actual or predicted chemical or biological agent hazard; a category of the NBC Warning and Reporting System.

Fomite

Objects, such as clothing, towels, and utensils that possibly harbor a disease agent and are capable of transmitting it.

Formalin

A 37 percent aqueous solution of formaldehyde.

Fulminant Hepatitis

Severe, rapidly progressive loss of hepatic function due to viral infection or other cause of inflammatory destruction of liver tissue.

Fungus

A general term used to denote a group of eukaryotic protist, including mushrooms, yeasts, rusts, molds, smuts, etc., which are characterized by the absence of a rigid cell wall composed of chitin, mannans, and sometimes cellulose.

Gene

A sequence of nucleic acids in the DNA molecules representing the genetic code for the production of one or more proteins in a living cell.

Generalized Vaccinia

Secondary lesions of the skin following vaccination that may occur in subjects with previously healthy skin but are more common in the case of traumatized skin, especially in the case of eczema (eczema vaccinatum). In the latter instance, generalized vaccinia may result from mere contact with a vaccinated person. Secondary vaccinia lesions may also occur following transfer of virus from the vaccination to another site by means of the fingers (autoinnoculation).

Germicide

An agent that destroys disease-causing microorganisms.

Gram Stain

A staining procedure used in classifying bacteria. A bacterial smear on a slide is stained with a purple basic triphenyl methane dye, usually crystal violet, in the presence of iodine/potassium iodide. The cells are then rinsed with alcohol or other solvent, and then counterstained, usually with safranin. The bacteria then appear purple or red according to their ability to keep the purple stain when rinsed with alcohol. This property is related to the composition of the bacterial cell wall.

Gram-Negative

Refers to the inability of many bacteria to retain crystal violet or similar stain through the standard Gram stain procedure. They show only the red counterstain.

Gram-Positive

Refers to the ability of many bacteria to retain crystal violet or similar stain through the standard Gram stain procedure. They retain a purple color.

Granulocytopenia

Less than the normal number of granular leukocytes in the blood.

Guarnieri Bodies

Intracytoplasmic acidophilic inclusion bodies observed in epithelial cells in variola (smallpox) and vaccinia infections, and which include aggregations of Paschen body's or virus particles.

Half-Life, Biological

The time required for the body to eliminate half of the material taken in by natural biological means.

Hemagglutination

The agglutination of red blood cells; may be immune as a result of specific antibody either for red blood cell antigens per se or other antigens which coat the red blood cells, or may be non-immune as in hemagglutination caused by viruses or other microbes.

Hemagglutinin

A substance, antibody or other, that causes hemagglutination.

Hematemesis

Vomiting of blood.

Hematuria

Any condition in which the urine contains blood or red blood cells.

Hemoglobin

The constituent of red blood cells that carried oxygen and gives them their color.

Hemopoietic

Pertaining to or related to the formation of blood cells.

Hemorrhage

The discharge of blood, as from a ruptured blood vessel.

Hemorrhagic Fever

Any of a diverse group of diseases characterized by a sudden onset, fever, muscle aches, petechiae, bleeding in the internal organs, and shock.

Hematuria

Any condition in which the urine contains blood or red blood cells.

Hemodynamic

Relating to the physical aspects of the blood circulation.

Hemolysis

Alteration, dissolution, or destruction of red blood cells in such a manner that hemoglobin is liberated into the medium in which the cells are suspended (e.g., by specific complement-fixing antibodies, toxins, various chemical agents, tonicity, alteration of temperature).

Hemolytic Uremic Syndrome

Hemolytic anemia and thrombocytopenia occurring with acute renal failure.

Hemoptysis

The spitting of blood derived from the lungs or bronchial tubes as a result of pulmonary or bronchial hemorrhage.

Hepatic

Relating to the liver.

Heterologous

- a. Pertaining to cytologic or histologic elements occurring where they are not normally found.
- b. Derived from an animal of a different species, as the serum of a horse is heterologous for a rabbit.

Host

Organism that serves as a home to, and often as a food supply for, a parasite, such as a virus.

Hot Agent

An extremely lethal infectious microorganism that is potentially airborne.

Hot Zone

An area that contains lethal, infectious organisms.

Human Immunodeficiency Virus (HIV)

The condition of having antibodies indicating the presence of HIV; the pathogen that causes Acquired Immune Deficiency Syndrome (AIDS).

Hyperemia

The presence of an increased amount of blood in a part or organ.

Hyperesthesia

Abnormal acuteness of sensitivity to touch, pain, or other sensory stimuli.

Hypotension

Subnormal arterial blood pressure.

Hypovolemia

A decreased amount of blood in the body.

Hypoxemia

Subnormal oxygenation of arterial blood, short of anoxia.

Idiopathic

Denoting a disease of unknown cause.

Immunity

- a. Resistance usually associated with the presence of antibodies or cells in a body that effectively resist the effects of an infectious disease organism or toxin.
- b. A condition of being able to resist a particular disease especially through preventing growth and development of a pathogenic microorganism or by counteracting the effects of its products.

Immunization

Administration either of a non-toxic antigen to confer active immunity or antibody to confer passive immunity to a person or animal in order to render them insusceptible to the toxic effects of a pathogen or toxin.

Immunoassay

Detection and assay of substances by serological (immunological) methods; in most applications the substance in question serves as antigen, both in antibody production and in measurement of antibody by the test substance.

Immunogen

An antigen that provokes an immune response.

Induration

- a. The process of becoming extremely firm or hard, or having such physical features.
- b. A focus or region of indurated tissue.

Infectious

Capable of producing disease in a susceptible host.

Inguinal

Relating to the groin.

Inoculation

Introduction into the body of the causative organism of a disease.

Interim Biological Agent Detector (IBAD) – Rapid Prototype

Detector that provides a near-term solution to a deficiency in shipboard detection of biological warfare agents. This equipment is capable of detecting an increase in the particulate background, which may indicate a man-made biological attack is underway, and sampling the air for identification analysis. It can also detect a change in background within 15 minutes and can identify biological agents within an additional 30 minutes.

Ion-Channel-Binding Toxins

These toxins interfere with the movement of ions such as sodium or potassium, through membranes.

Isolation

Separation of infected persons or animals from others to prevent or limit direct or indirect transmissions of the infectious agent.

Joint Biological Point Detection System (JBPDS)

The Army, Navy, Air Force, and Marine Corps use this detection system. The developmental system will replace all existing biological detection systems (Biological Integrated Detection System, Interim Biological Agent Detector, and Air Base/Port Advanced Concept Technology Demonstration), and provide biological detection capabilities throughout the services and throughout the battlespace. The common biological detection suite will consist of four functionalities—

- a. Trigger (detects a significant change in the ambient aerosol in real time).
- b. Collector (collects samples of the suspect aerosol for analysis by the JBPDS, and for confirmatory analysis by supporting laboratories in the Communications Zone and the continental U.S.
- c. Detector (able to broadly categorize the contents of the aerosol and lend confidence to the detection process; e.g., biological material in the aerosol or not, bacteriological, spore, protein, etc.).
- d. Identification (provides presumptive identification of the suspect biological warfare agent and increases confidence in the detection process). The JBPDS program consists of two phases (Block I and Block II) to allow the fastest possible fielding of a joint biological detection system, while at the same time preparing to take advantage of the rapid advances taking place in the biological detection/identification, information processing and engineering services.

Lassa Fever

An acute illness caused by the RNA containing Arenavirus. This is also classified as one of the viral hemorrhagic fevers. Transmission may be from infected rodents, contact with infected body fluids, or person-to-person contact. The incubation period is 6 to 21 days. Headache, sore throat, cough, chest pain, abdominal pain, vomiting, diarrhea and fever are frequent symptoms.

Lethal Toxin

One of the proteins comprising the anthrax toxin; a zinc metalloprotease with a molecular weight of 90,000.

Leukopenia

The opposite of leukocytosis; any situation in which the total number of leukocytes in the circulating blood is less than normal, the lower limit of which is generally regarded as 4000-5000/mm³.

Long Range Biological Standoff Detection System (LR-BSDS) P31

This detection system uses infrared light detection and ranging (Infrared Light-Detection and Ranging) technology to detect, range, and track aerosol clouds that are indicative of a biological warfare attack; the LR-BSDS cannot discriminate biological from non-biological clouds. The system has three major components—

- a. A diode pulsed ionizing radiation laser transmitter operating at infrared wavelength.
- b. A receiver and telescope.
- c. An information processor and display.

This system has been designed in two phases: a non-developmental item phase designed to rapidly field an interim capability, and a pre-planned product improvement (P31) phase. The nondevelopmental item system is able to detect and track man-made aerosols out to 30 km, but

noneyesafe out to about 2.5 km. The P31 LR-BSDS will be eye safe, have a longer operating range (50 km), and be easier to operate.

Lumbosacral

Relating to the lumbar vertebrae and the sacrum.

Lumen (Pl. Lumina)

The space in the interior of a tubular structure, such as an artery or the intestine.

Lymphadenopathy

Any disease process affecting a lymph node or lymph nodes.

Lymphopenia

A reduction, relative or absolute, in the number of lymphocytes in the circulating blood.

M31 Biological Integrated Detection System (BIDS)

This detection system uses a multiple technology approach, both developmental and off-the-shelf material, to detect biological agents with maximum accuracy. The BIDS is a vehicle-mounted, fully integrated biological detection system. The system is capable of detecting and presumptively identifying four biological warfare agents simultaneously in less than 45 minutes.

Macula, (Pl. Maculae)

- a. A small spot, perceptibly different in color from the surrounding tissue.
- b. A small, discolored patch or spot on the skin, neither elevated above nor depressed below the skin's surface.

Malaria

A chronic parasitic disease caused by Plasmodia and transmitted by the bites of infected mosquitoes. It is accompanied by severe chills and fever at regular intervals.

Marburg Virus

One of the RNA containing Filovirus family also classified in the viral hemorrhagic fever group. The incubation period is 3 to 9 days. The disease is contracted by skin or mucous membrane contact with blood or other tissues of infected monkeys or humans. The disease is manifested by headache, sore throat, muscle aches, chest pain, vomiting, diarrhea, skin rash, jaundice, easy bruising and bleeding.

Mediastinitis

Inflammation of the cellular tissue of the mediastinum.

Mediastinum

The median partition of the thoracic cavity, covered by the mediastinal pleura and containing all the thoracic viscera and structures except the lungs.

Megakaryocyte

A large cell with a polyploid nucleus that is usually multilobed; megakaryocytes are normally present in bone marrow, not in the circulating blood, and give rise to blood platelets.

Melena

Passage of dark-colored, tarry stools, due to the presence of blood altered by the intestinal juices.

Melioidosis

An infectious disease of humans and animals caused by *Pseudomonas pseudomallei*, a gram-negative bacillus. A biological warfare attack with this organism would most likely be by the aerosol route.

Meningism

A condition in which the symptoms simulate a meningitis, but in which no actual inflammation of these membranes is present.

Meningitis

Inflammation of the membranes covering the brain and spinal cord.

Meningococemia

Presence of meningococci (*N. meningitidis*) in the circulating blood.

Meninges

Any membrane; specifically, the membranous coverings of the brain and spinal cord.

Microcyst

A tiny cyst, frequently of such dimensions that a magnifying lens or microscope is required for observation.

Microscopy

Investigation of minute objects by means of a microscope.

Microorganism

Any organism of microscopic dimensions. Once they enter the body, microorganisms multiply, overcoming the body's natural defenses, and produce disease.

Monkey Pox Virus

A virus that causes a blister type rash in monkeys similar to small pox in man. The disease is endemic in Western and Central Africa and has infected humans in this geographic area. It may have the ability for person-to-person transmission. It causes swollen lymph nodes in the neck and groin areas.

Moribund

Dying; at the point of death.

Mucocutaneous

Relating to mucous membrane and skin; denoting the line of junction of the two at the nasal, oral, vaginal, and anal orifices.

Myalgia

Muscular pain.

Mycotoxin

A fungal toxin. They can cause illness or death upon ingestion, skin contact or inhalation. They exhibit great stability and heat resistance. Mycotoxins are difficult to detect, to identify, and to decontaminate.

Mydriasis

Dilation of the pupil.

Narcosis

General and nonspecific reversible depression of neuronal excitability, produced by a number of physical and chemical agents, usually resulting in stupor rather than in anesthesia.

Necrosis

Pathologic death of one or more cells, or of a portion of tissue or organ, resulting from irreversible damage.

Nephropathia Epidemica

A generally benign form of epidemic hemorrhagic fever reported in Scandinavia.

Neurotoxic

Poisonous to nerve tissue.

Neutrophilia

An increase of neutrophilic leukocytes in blood or tissues; also frequently used synonymously with leukocytosis, inasmuch as the latter is generally the result of an increased number of neutrophilic granulocytes in the circulating blood (or in the tissues, or both).

Node

Swelling

Nodule

A small mass of rounded or irregular shape.

Nosocomial

Denoting a new disorder (not the patient's original condition) associated with being treated in a hospital, such as a hospital-acquired infection.

Oliguria

Scanty urine production.

Organism

A complex structure of interdependent and subordinate elements whose relations and properties are largely determined by their function in the whole.

Oropharynx

The portion of the pharynx that lies posterior to the mouth; it is continuous above with the nasopharynx via the pharyngeal isthmus and below with the laryngopharynx.

Osteomyelitis

Inflammation of the bone marrow and adjacent bone.

Pancytopenia

Pronounced reduction in the number of erythrocytes, all types of white blood cells, and the blood platelets in the circulating blood.

Pandemic

Denoting a disease affecting or attacking the population of an extensive region, country, continent; extensively epidemic.

Papule

A small, circumscribed, solid elevation on the skin.

Parasitemia

The presence of parasites in the circulating blood; used especially with reference to malarial and other protozoan forms, and microfilariae.

Passive Immunity

Providing temporary protection from disease through the administration of exogenously produced antibody (i.e., transplacental transmission of antibodies to the fetus or the injection of immune globulin for specific preventive purposes).

Pathogen

Biological agents that are disease-producing microorganisms, such as bacteria, mycoplasma rickettsia, fungi, or viruses.

Penicillin

A drug of choice for therapy of anthrax. (See antibiotics.)

Peptide

Any of various amides that are derived from two or more amino acids by combination of the amino group of one acid with the carboxyl group of another and are usually obtained by partial hydrolysis of proteins.

Percutaneous

Denoting the passage of substances through unbroken skin, for example, by needle puncture, including introduction of wires and catheters.

Perivascular

Surrounding a blood or lymph vessel.

Petechia (Pl. Petechiae)

Minute hemorrhagic spots, of pinpoint to pinhead size, in the skin, that are not blanched by pressure.

Pharyngeal

Relating to the pharynx.

Pharyngitis

Inflammation of the mucous membrane and underlying parts of the pharynx.

Photophobia

Morbid dread and avoidance of light. Photosensitivity, or pain in the eyes with exposure to light, can be a cause.

Plague

An acute infectious disease caused by *Yersinia pestis*. Under normal conditions, humans become infected as a result of contact with rodents and their fleas. In a biological warfare scenario, the plague bacillus could be delivered by means of contaminated vectors (fleas) causing the bubonic type or, more likely, by means of aerosol causing the pneumonic type. The incubation period is 2 to 8 days following the bite of an infected flea and is characterized by high fever; chills; prostration; enlarged, painful lymph nodes known as buboes, located particularly in the groin or under the arms. The bacteria can invade the blood stream leading to the septicemic form of the disease. Subsequent invasion of the lungs causes a rapidly fatal form known as pneumonic plague that can be transmitted from person-to-person via airborne respiratory droplets. The agent is highly infectious by the aerosol route and most populations are completely susceptible.

Plasma

The fluid portion of the blood, as opposed to the particulate bodies suspended in the blood.

Pleurisy

Inflammation of the two membranous sacs (pleura), each of which lines one side of the thoracic cavity and envelops the adjacent lung, reducing the friction of respiratory movements to a minimum.

Pneumonia

Inflammation of the lungs caused by viral or bacterial infections or by irritants.

Polymerase Chain Reaction (PCR)

An in-vitro method for enzymatically synthesizing and amplifying defined sequences of DNA in molecular biology. It can be used for improving DNA-based diagnostic procedures for identifying unknown biological warfare agents.

Polymorphonuclear

Having nuclei of varied forms; denoting a variety of leukocyte.

Polyuria

Excessive excretion of urine.

Potency

The quality or state of having force or power to cause an effect, as—

- a. Chemical or medicinal strength (e.g., a vaccine or drug).
- b. The ability of a pathogen or toxin to cause infection or intoxication. (When two pathogens or toxins are being compared, the one with the smallest effective dose is the most potent.)

Presynaptic Neurotoxins

Microbial paralytic toxins, such as botulinum and tetanus toxins and snake phospholipases. They block release of acetylcholine from nerve terminals.

Prophylaxis (Pl. Prophylaxes)

The prevention of disease or of a process that can lead to disease.

Prostration

A marked loss of strength, as in exhaustion.

Protein

Any of numerous naturally occurring extremely complex substances that consist of amino-acid residues joint by peptide bonds, contain the elements carbon, hydrogen, nitrogen, oxygen, usually sulfur, and occasionally other elements and include many essential biological compounds or immunoglobulins.

Proteinuria

The presence of urinary protein in concentrations greater than 0.3 g in a 24-hour urine collection or in concentrations greater than 1 g/L in a random urine collection on two or more occasions at least 6 hours apart; specimens must be clean, voided midstream, or obtained by catheterization.

Pruritus

Itching.

Ptosis (Pl. Ptoses)

Drooping of the eyelids.

Pulmonary Edema

Swelling or excessive accumulation of serous fluid in the lungs.

Pyrogenic

Causing fever.

Q Fever

An acute, febrile, incapacitating disease caused by the rickettsial bacterium *Coxiella burnetti* and transmitted via inhalation of contaminated aerosols, the bites of infected ticks or ingestion of milk from infected dairy animals. A biological warfare attack would cause disease similar to that occurring naturally.

Quarantine

Detaining, isolating, or restricting the activities of people or animals exposed to a communicable disease during the period in which the disease can be transmitted to prevent others from contracting disease.

Reservoir

Any person, animal, anthropod, plant, soil, or substance (or combination of these) in which an infectious agent normally lives and multiplies, on which it depends for survival, and in which it reproduces itself in such a manner that it can be transmitted to a susceptible vector.

Retinitis

Inflammation of the retina (a delicate multilayer light-sensitive membrane lining the inner eyeball and connected by the optic nerve to the brain).

Retrosternal

Posterior to the sternum.

Rhinorrhea

A discharge from the nasal mucous membrane.

Ribavirin

An antiviral drug used in the treatment of viral hemorrhagic fevers.

Ricin

A glycoprotein toxic from the seed of the castor plant. It blocks protein synthesis by altering the RNA, thus killing the cell. Ricin's significance as a potential biological warfare agent relates to its availability worldwide, ease of production, and extreme pulmonary toxicity when inhaled.

Rickettsia

A microorganism of the genus *Rickettsia*, made up of small rod-shaped coccoids occurring intracytoplasmically or free in the lumen of the gut of lice, fleas, ticks, and mites, by which they are transmitted to man and other animals. They cause diseases such as typhus, scrub typhus, and Rocky Mountain Spotted Fever in humans.

Rift Valley Fever

One of the viral hemorrhagic fevers caused by the Bunyaviridae viral group. It is transmitted to humans by *Aedes Aegypti* mosquitoes. It may affect the retina of the eye, leading to permanent blindness.

Salmonella

A group of nonspore forming bacteria capable of causing gastroenteritis, enteric fever, bacteremia, and localized infections. After ingestion of contaminated food or water, nausea, vomiting, diarrhea, fever, headache, and muscle aches will occur lasting between 2 to 7 days.

Saxitoxin

The parent compound of a family of chemically related neurotoxins. In nature they are predominantly produced by marine dinoflagellates, although they have also been identified in association with such diverse organisms as blue-green algae, crabs, and the blue-ringed octopus. The natural route of exposure to these toxins is oral. In a biological warfare scenario, the most likely route of delivery would be by inhalation or toxic projectile. It could also be used in a confined area to contaminate water supplies.

Scarification

The making of a number of superficial incisions in the skin. It is the technique used to administer tularemia and smallpox vaccines.

Secondary Contamination

Contamination that occurs due to contact with a contaminated person or object rather than to direct contact with agent aerosols; cross contamination.

Septic Shock

- a. Shock associated with sepsis, usually associated with abdominal and pelvic infection complicating trauma or operations.
- b. Shock associated with septicemia caused by Gram-negative bacteria.

Sequellae

A condition following as a consequence of a disease.

Serum

That part of the whole blood that remains after the blood has clotted; generally yellowish in color.

Shigellosis

Bacillary dysentery caused by bacteria of the genus *Shigella*, often occurring in epidemic patterns.

Shock

An upset in the body caused by inadequate amounts of blood circulating in the bloodstream. It can be caused by marked blood loss, overwhelming infection, severe injury to tissues, emotional factors, etc.

Smallpox

An acute, systemic, potentially fatal and highly contagious viral disease caused by the variola Orthopoxvirus; characterized by the appearance of skin lesions and pustules on the face and body, with chills and fever. Under natural conditions, the virus is transmitted by direct (face-to-face) contact with an infected case, by fomites, and occasionally by aerosols.

Spores

Resistant, dormant cells of some bacteria; primitive reproductive bodies of fungi.

Staphylococcal Enterotoxin

An incapacitating toxin produced by the bacterium *Staphylococcus aureus*; responsible for the fever, chills, and gastrointestinal upsets of "food poisoning" from ingestion of improperly prepared food items. The weaponized form is an aerosol; potent incapacitator in small doses; could render up to 80 percent of exposed personnel clinically ill for approximately two weeks.

Sterile Abscess

An abscess whose contents are not caused by pyogenic bacteria.

Sterilization

The complete killing of all organisms, usually by the use of physical or chemical means such as autoclaving or exposure to high concentrations of formaldehyde.

Stridor

A high-pitched, noisy respiration, like the blowing of the wind; a sign of respiratory obstruction, especially in the trachea or larynx.

Submunition

Individual bomblets that can be filled with biological or chemical agent and packed into the aeroshell of a missile; follow independent flight patterns after air burst release from the "parent" missile.

Superantigen

An antigen that interacts with the T-cell receptor in a domain outside of the antigen recognition site. This type of interaction induces the activation of larger numbers of T cells compared to antigens that are presented in the antigen recognition site.

Superinfection

A new infection in addition to one already present.

T-Cell

Any of several types of lymphocytes that control cell-mediated and humoral immunity, or that lyse antigen-bearing cells.

T-2 Mycotoxin

A trichothecene mycotoxin produced by filamentous fungi growing on moldy cereal grains.

Tachycardia

Rapid beating of the heart, conventionally applied to rates over 100 per minute.

Teratogenicity

The property or capability of producing fetal malformation.

Tetracycline

A drug that can be used in combination with streptomycin in the therapy of brucellosis. It is also a drug of choice for Q Fever and may be used as alternative therapy for plague and tularemia. (See antibiotic.)

Thrombocytopenia

A condition in which there is an abnormally small number of platelets in the circulating blood.

Toxemia

A condition caused by the circulation of toxins in the blood.

Toxic

Poisonous.

Toxin

Any poisonous substance of microorganism, plant, or animal origin.

Toxoid

A modified bacterial toxin that has been rendered nontoxic (commonly with formaldehyde) but retains the ability to stimulate the formation of antitoxins (antibodies) and, thus, producing an active immunity. Examples include Botulinum, Tetanus, and Diphtheria Toxoids.

Tracheitis

Inflammation of the lining membrane of the trachea (a thin-walled cartilaginous and membranous tube carrying air to the lungs).

Trichothecene Mycotoxins

A diverse group of more than 40 compounds produced by fungi. They are potent inhibitors of protein synthesis, impair DNA synthesis, alter cell membrane structure and function, and inhibit mitochondrial respiration. Secondary metabolites of fungi, such as T-2 toxin and others, produce toxic reactions called mycotoxicoses upon inhalation or consumption of contaminated food products by humans or animals.

Tularemia

A zoonotic disease caused by *Francisella tularensis*, a gram-negative bacillus. Humans acquire the disease under natural conditions through inoculation of skin or mucous membranes with blood or tissue fluids of infected animals, or bites of infected deerflies, mosquitoes, or ticks.

Undulating

Rising and falling; fluctuating.

Urticaria

An eruption of itching wheals, usually of systemic origin; it may be due to a state of hypersensitivity to foods or drugs, foci of infection, physical agents (heat, cold, light, friction), or psychic stimuli.

Vaccine

A suspension of attenuated live or killed microorganisms (bacteria, viruses, or rickettsiae), or fractions thereof, administered to induce immunity and thereby prevent infectious disease.

Vaccinia

An infection, primarily local and limited to the site of inoculation, induced in man by inoculation with the vaccinia (cowpox) virus in order to confer resistance to smallpox (variola). On about the third day after vaccination, papules form at the site of inoculation which become transformed into umbilicated vesicles and later pustules; they then dry up, and the scab falls off on about the 21st day, leaving a pitted scar; in some cases there are more or less marked constitutional disturbances.

Varicella

An acute contagious disease, usually occurring in children, caused by the varicella-zoster virus, a member of the family Herpesviridae. It is marked by a sparse eruption of papules, which become vesicles and then pustules, like those of smallpox although less severe and varying in stages, usually with mild constitutional symptoms. The incubation period is about 14 to 17 days (synonym: chickenpox).

Variola

Smallpox.

Variolation

The historical practice of inducing immunity against smallpox by “scratching” the skin with the purulency from smallpox skin pustules.

Vectors

An animal, insect, or other organism that carries and transmits a virus or other microorganism.

Venezuelan Equine Encephalitis

A member of the Alphavirus family transmitted by mosquitoes that generally infects horses but can cause epidemics in humans. It can also cause infections if aerosols containing the virus are inhaled. Infection is manifested by fever, headache, sore throat, vomiting, and muscle aches.

Viral Hemorrhagic Fevers

A diverse group of human viral illnesses characterized by acute febrile onset accompanied by headache and complicated by increased vascular permeability, damage, and bleeding; mortality is high. Examples include Rift Valley Fever, Ebola Hemorrhagic Fever, and Yellow Fever.

Viremia

The presence of virus in the bloodstream.

Virion

The complete virus particle that is structurally intact and infectious.

Virus

Any of a large group of submicroscopic agents infecting plants, animals, and bacteria and unable to reproduce outside the tissues of the host.

Western Equine Encephalitis Virus

A member of the Alphavirus family transmitted to mosquitoes that generally affects horses but can cause epidemics in humans.

Yellow Fever Virus

A member of the Flavivirus group endemic to South America and Africa transmitted to humans by the *Aedes Aegypti* mosquito. It is also a viral hemorrhagic fever virus. After a 3 to 6 day incubation period, there is abrupt onset of headache, nausea, vomiting, muscle aches, chills, and fever.

Yellow Rain

A lethal yellow substance thought to have been dispersed aurally as a warfare agent in Southeast Asia and Afghanistan; the lethal component is thought to have been a trichothecene mycotoxin. Reported to produce severe nausea and vomiting, disturbances in the central nervous system, fever, chills, and abnormally low blood pressure. Case mortality approximately 50 percent.

Zoonosis

An infection or infestation shared in nature by humans and other animals that are the normal or usual host; a disease of humans acquired from an animal source.

Zootoxin

A toxin or poison of animal, such as the venom of snakes, spiders, and scorpions.

Section 5 – Chemical Terms**Accessible Form**

Undiluted agent that has not been decontaminated or neutralized, but that could possibly be removed for unauthorized purposes. Includes agents in munitions, bulk, and in laboratory containers.

Action Level

A concentration designated in Code of Federal Regulations, Part 1910, Title 29 for a specific substance, calculated as an 8-hour time-weighted average (TWA) which initiates certain required activities such as exposure monitoring and medical surveillance. (Note: For many substances the action level is one-half the permissible exposure limit.)

Agent

A force or substance that causes a change.

Agent Activity / Operation

Any operation which involved chemical agents, including storage, shipping, handling, manufacturing, maintenance, test chamber activities, laboratory activities, surveillance, demilitarization, decontamination, disposal, and training.

Agent Area

A physical location where entry and exit are restricted and controlled; where agents are manufactured, processed, packaged, repackaged, demilitarized, released, handled, stored, used, or disposed of.

Agent Facility

Any location at which chemical agent operations are carried out including storage facilities, renovation, maintenance, and demilitarization facilities, manufacturing plants, disposal sites, and laboratories. Depending on the activity, the facility may be a building, enclosure, or possibly an open area.

Agent BZ

The chemical 3-quinuclidinyl ester, CAS Registry No. 6581-06-2. BZ is a code designation for a potent psychoactive compound that has a pharmacological action similar to that of other anticholinergic drugs (e.g., atropine, scopolamine) except that the effects are more severe and longer lasting. It has an incapacitating agent classified as a Class B poison for transportation purposes. It is an odorless, white crystalline solid that in granular form may be compounded with a fuel-oxidizer mix for thermal dissemination.

Agent GA

The chemical Ethyl N,N-dimethylphosphoramidocyanidate, CAS Registry No. 77-81-6, in pure form and in the various impure forms found in storage as well as in industrial, depot, or laboratory operations (synonym - Tabun). Agent GA is a nerve agent.

Agent GB

The chemical ISOGroupyl methylphosphonofluoridate, CAS Registry No. 107-44-8, in pure form and in the various impure forms found in storage as well as in industrial, depot, or laboratory operations (synonym - Sarin). Agent GB is a nerve agent.

Agent GD

The chemical Pinacolyl methyl phosphonofluoridate, methyl-1, 2, 2-trimethylpropyl ester, CAS Registry No. 96-64-0, in pure form and in the various impure forms found in storage as well as in industrial, depot, or laboratory operations (synonym - Soman). Agent GD is a nerve agent.

Agent H

Levinstein mustard, CAS Registry No. 471-03-4. A mixture of 70 percent bis(2-chloroethyl) sulfide and 30 percent sulfur impurities produced by the Levinstein process. Agent H is a blister.

Agent HD Distilled mustard or bis(2-chloroethyl) sulfide, CAS Registry No. 505-60-2. Distilled mustard (HD) is mustard (H) that has been purified by washing and vacuum distillation to reduce sulfur impurities. Agent HD is a blister agent.

Agent HT

A plant-run mixture of 60 percent HD and 40 percent T plus a variety of sulfur contaminants and impurities. T is bis[2-(2-chloroethylthio)ethyl]ether, CAS Registry No. 63918-89-8. T is sulfur, oxygen and chlorine compound similar in structure to HD. Agent HT is a blister agent.

Agent L, or Lewisite

Dichloro 2-chlorovinylchloroarsine, CAS Registry No. 541-25-3; its chemical formula is C₂H₂AsCl₃. Agent L is a blister agent.

Agent Operating Area

That portion of an agent area where workers are actively conducting agent operations.

Agent VX

The chemical Phosphonothioic acid, methyl-S-[2-(bis(1-methylethyl)amino)ethyl] 0-ethyl ester, CAS Registry No. 50782-69-9, in pure form and in the various impure forms that may be found in storage as well as in industrial, depot, or laboratory operations. Agent VX is a nerve agent.

AIC

Acceptable Intake for Chronic Exposure.

Aldehydes

Any of various highly reactive compounds typified by acetaldehyde and characterized by the group CHO.

Alkali

A class of bases that neutralize acids and forms salts.

Amine

Any of a class of organic compounds derived from ammonia by replacement of hydrogen with one or more alkyl groups.

Analgesic

A substance used in medicine to relieve pain.

Anthropometric

Relates to the study of human body measurements, especially on a comparative basis.

Aqueous Media

Environmental media that contain a large proportion of water, such as storm water runoff from agricultural fields, animal and plant fluids, etc.

Arsenicals

A category of blister agents in which arsenic is the central atom. Although more volatile than mustard agents, they are much more dangerous as liquids than as vapors.

Atropine

An alkaloid obtained from the plant *Atropa belladonna*. It is used as an antidote for nerve agent poisoning. It inhibits the actions of acetylcholine at the nerve/muscle junction.

Automatic Chemical Agent Alarm (ACAA)

See M8A1, M-21, M-22, and M-90 descriptions.

Automatic Continuous Air Monitoring System (ACAMS)

This system can detect G agents, VX, or mustard at very low levels. It is an automated gas chromatograph that first collects agent on a solid sorbent and then thermally desorbs the agent into a separation column for analysis.

Automatic Liquid Agent Detector (ALAD)

A liquid agent device that can detect droplets of GD, VX, HD, and Lewisite as well as thickened agents. It transmits its alarm by field wire to a central alarm unit.

Binary Chemical Munitions

Munitions designed to use two non-lethal chemicals that combine only during weapon functions to produce a chemical agent.

Binary Precursors

The component chemicals that combine to produce chemical agents. Examples of two common chemical agent ingredients are as follows:

- a. The precursors for binary GB (GB2) are methylphosphonic difluoride (DF) and iSOGropyl alcohol with an amine added (OPA).
- b. The precursors for binary VX (VX2) are O,O-ethyl (2-iSOGropyl aminoethyl) methylphosphinite (QL) and dimethylpolysulfide (NM).

Blast

The brief and rapid movement of air vapor away from a center of outward pressure, as in an explosion. This term is commonly used to mean explosion, but the two terms should be distinguished.

Bliss Slope

The slope of the dose-response curve when the x-axis is expressed as the log of the administered dose and the y-axis is expressed as probits (probability units) of response. It is also called a Probit Slope.

Blister Agent

A chemical (e.g., sulfur mustard) that produces local irritation and damage to the skin and mucous membranes that progresses in severity to fluid-filled blisters on skin. This chemical can cause damage by exposure to liquid or vapor inhalation. It can also produce damage to the respiratory tract.

Blood Agent

A chemical (e.g., hydrogen cyanide, allyl chloride) that is absorbed into the general circulation system and carried to all body tissues. These agents deprive tissue cells of oxygen, even though the blood is capable of carrying oxygen. The brain, being highly dependent upon a continual source of oxygenation, is especially susceptible. Clinical signs include hyperventilation, which further enhances the dose received, resulting in abrupt cardiovascular collapse.

Breathing Zone

That zone of the surrounding environment in which a person performs the normal respiratory function.

Breathing Zone Sample

An air sample collected in the breathing area (around the nose) of an individual to assess his / her exposure to airborne contaminants.

Buddy-Aid

The administration of a chemical agent antidote to a soldier exhibiting symptoms of severe chemical agent poisoning when unable to administer self-aid.

Buffer Zone

As used by the FEMA and the USEPA, an area adjacent to a restricted zone which residents may return to, but where protective measures are recommended to reduce dose or exposure.

CAIRA

Chemical Accident or Incident Response and Assistance.

Chemical Accident/Incident (CAI)

Chemical events involving chemical agent material—

- a. Chemical Accident: a chemical event resulting from non-deliberate acts where safety is of primary concern.
- b. Chemical Incident: a chemical event resulting from deliberate acts (e.g., terrorism or criminal acts) where security is of concern.

Chemical Agent

A chemical substance that is intended for use in military operations to kill, seriously injure, or incapacitate people through its physiological properties. For consideration are blood, nerve, choking, blister, and incapacitating agents. Excluded are industrial chemicals, riot control agents, chemical herbicides, and smoke and flame materials.

Chemical Agent Casualty

An individual who has been affected sufficiently by a chemical agent to prevent or seriously degrade his or her ability to carry out the mission.

Chemical Agent Monitor (CAM)/Improved Chemical Agent Monitor (ICAM)

This item is used to detect chemical agent vapors and provide a readout of the relative concentration of the vapor present. It is a hand-held, battery-operated device for the monitoring of decontamination procedures and effectiveness on personnel and equipment. It can detect, identify and provide relative

vapor concentration readouts for G and V-type nerve agents and H-type blister agents. The ICAM is a hand-held, soldier-operated, post-attack device for monitoring chemical agent decontamination on people and equipment. It detects vapors of chemical agents by sensing molecular ions of specific mobilities (time of flight) and uses timing and microprocessor techniques to reject interference.

Chemical Bombs

Devices in which a chemical reaction takes place within a confined space. The following are the most common types:

- a. Acid Bomb. Common ingredients are hydrochloric acid and aluminum foil that chemically reacts to give off heat, ultimately producing hydrogen gas and sufficient pressure to burst the container.
- b. Caustic Bomb. Alkali based devices mixed with water and aluminum foil. The most common ingredient is sodium hydroxide, a corrosive in both liquid and solid forms that can immediately cause serious burns to skin on contact.
- c. Dry Ice Bomb. When dry ice evaporates, carbon dioxide gas is released. It usually takes 30 to 45 minutes for enough pressure to build to rupture the contained. When detonation occurs before all the dry ice has evaporated, the remaining dry ice becomes fragments that can cause frostbite when contacting skin tissues.

Chemical Cartridge

A type of absorption unit used with a respirator for removal of solvent vapors and certain gases.

Chemical Contamination

The deposition of chemical agents on personnel, clothing, equipment, structures, or areas. Chemical contamination mainly consists of liquid, solid particles, and vapor hazards. Vapor hazards are probably the most prevalent means of contaminating the environment, although they are not necessarily a contact hazard.

Chemical Demilitarization

The mutilation, destruction, or neutralization of chemical agent materials, rendering it harmless and ineffectual for military purposes.

Chemical Demilitarization Program

The Department of Defense was directed by Congress through Public Law 99-145 as the government agency responsible for the destruction of the chemical weapons stockpile. This program is also responsible ensuring maximum protection to the environment, general public, and personnel involved in the destruction effort. To comply with treaty agreements and Congressional mandate, destruction of these weapons must be complete by 2007. The Program Manager for Chemical Demilitarization is responsible for the Chemical Stockpile Disposal Program that consists of four separate programs—

- a. The Chemical Stockpile Disposal Program (CDSP): responsible for the destruction of the U.S. stockpile of unitary chemical weapons. The current technology uses manual unpacking, automated disassembly, and incineration of agent, explosives, metal, and dunnage in four separate incinerators, followed by exhaust gas processing through separate pollution abatement systems.
- b. The Alternative Technologies and Approaches (ATA): responsible for conducting pilot testing of alternative destruction technologies that may be implemented in future chemical weapon destruction facilities.
- c. The Non-Stockpile Chemical Materiel Program (NSCMP): responsible for the destruction of non-stockpile chemical warfare material, including binary chemical weapons, miscellaneous chemical warfare materiel, recovered chemical weapons, former production facilities, and buried chemical warfare materiel.
- d. The Chemical Stockpile Emergency Preparedness Program (CSEPP): responsible for providing maximum protection of the civilian population during storage, handling, and destruction of the U.S. chemical weapons stockpile by improving state and local governments preparedness for an accidental release of agent.

<http://www.hnd.usace.army.mil/chemde/index.asp>

Chemical Event

Applies to the following:

- a. Chemical agent leaks of munitions in the chemical agent stockpile.
- b. Requirements for emergency transportation and / or disposal of known or suspected chemical agents.
- c. Any release of chemical agent to the environment outside of closed systems, facilities, or devices (for example, lab hood, glove box, munitions, bulk container which are specifically designed to contain chemical agents) greater than established The Surgeon General airborne exposure standards (as per Department of Defense Directive 6055.9 standards promulgated in Army Regulation 385-64), or release resulting in personnel exhibiting clinical signs or symptoms of chemical agent exposure.
- d. Any exposure or release of agent that does not exceed airborne exposure standards established by The Surgeon General but, nonetheless, is receiving media attention.
- e. Any deliberate release of chemical agent resulting from a terrorist or criminal act (including employment of an improvised chemical device intended to disperse chemical agent regardless of whether device has functioned or not).
- f. Loss of chemical surety material (other than deliberate destruction by approved, authorized laboratory, and demilitarization process, including training expenditures).
- g. Release of or exposure to chemical agents, whether classified as chemical agent or experiments.

Chemical Event Emergency Notification System

A joint system of emergency notification of chemical events for off-post response. If a release of chemical agents happens, immediate action must be taken to notify and protect personnel in the predicted hazard area. The criteria to make this notification will be based on predicted dosage and distances.

Chemical Management Evaluation

An evaluation conducted by The Inspector General or the Major Army Command Inspector General of chemical operations with inquiry into the chemical functions and responsibilities of staff agencies, inspection teams, major and intermediate command levels, and assistance teams to determine management, systemic, or functional problem areas in the chemical program attributable to any echelon.

Chemical Overgarment-84 (OG-84)

This garment is a camouflage colored (woodland or desert), expendable, two-piece over garment consisting of one coat and one pair of trousers. It provides protection against chemical agent vapors, liquid droplets, biological agents, toxins, and radioactive alpha contamination. Its protective qualities last for a minimum of 30 days. This over garment provides a minimum of 24 hours of protection against exposure to liquid or vapor chemical agent.

Chemical Substance

A substance usually associated with some description of its toxicity or exposure hazard, including solids, liquids, mists, vapors, fumes, gases, and particulate aerosols. Exposure, via inhalation, ingestion, or contact with skin or eyes, may cause toxic effects, usually in a dose-dependent manner.

Chemical Surety

Those controls, procedures, and actions that contribute to the safety, security, and reliability of chemical agents and their associated weapon systems throughout their life cycle without degrading operational performance.

Chemical Surety Material

All lethal and incapacitating chemical agents and their related weapon systems, including binary munitions and their critical components that are either adopted or considered for military use. Excluded are riot control agents, defoliants, incendiaries, smoke, and flame.

Chemical Warfare

All aspects of military operations involving the use of lethal munitions/agents and the warning and protective measures associated with such offensive operations.

Chemical Weapons

- a. Toxic chemicals and their precursors, except where intended for purposes not prohibited under the Chemical Weapons Convention.
- b. Munitions and devices, specifically designed to cause death or other harm through the toxic properties of toxic chemicals which would be released as a result of the employment of such munitions and devices.
- c. Any equipment specifically designed for use directly in connection with the employment of munitions.

Chemical Weapons Convention

This Convention prohibits the development, production, stockpiling, and use of chemical weapons. It was opened for signature in 1993, and entered into force in 1997. The Organization for the Prohibition of Chemical Weapons (OPCW) in the Hague is responsible for implementation. The State Parties to this Convention work towards achieving effective progress towards general and complete disarmament under strict and effective international control, including the prohibition and elimination of all types of weapons of mass destruction. This Convention reaffirms the principles and objectives of and obligations assumed under the Geneva Protocol of 1925, and the Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction signed on in April 1972. [http://www.opcw.nl/
http://projects.sipri-se/cbw/docs/cw-cwc-mainpage.html](http://www.opcw.nl/http://projects.sipri-se/cbw/docs/cw-cwc-mainpage.html)

Chemical Weapons System

An integrated relationship of chemical agents, munitions or spraying devices and their mode of delivery to the target.

Choking Agent

Compounds that injure an unprotected individual chiefly in the respiratory tract (the nose, throat, and lungs). In extreme cases membranes swell, lungs become filled with liquid, and death results from lack of oxygen.

Chlorine (Cl)

A choking agent. A chemical agent that is typically a non-persistent, heavy greenish-yellow gas. It irritates the eyes and throat and can lead to pulmonary edema resulting in death.

Cholinesterase (ChE)

An enzyme that catalyzes the hydrolysis of acetylcholine to choline (a vitamin) and acetic acid.

Clean Areas

Those areas where environments are free of liquid agent contamination and have been monitored to verify that air concentrations are below the adverse effect levels.

Complementary Binary Precursors

Both the critical and non-critical precursors of a binary chemical agent (e.g., DF and OPA, or QL and NM).

Confounder

A condition or variable that may be a factor in producing the same response as the substance under study. The effects of such factors may be discerned through careful design and analysis.

Controlled Release

A release of a chemical agent that may not be intended but is anticipated. It is followed by immediate action that will suppress the vapor or liquid release by approved decontamination procedures and / or use of other suppression techniques that have also been approved beforehand.

Cyanide

A compound that contains nitrogen and a carbon atom bound in a special way. It is very poisonous and affects the ability of our tissues to use oxygen. Health effects are similar whether it is breathed, ingested, or come in contact with skin. Symptoms include difficulty breathing, irregular heartbeat, uncontrolled movement, convulsions, coma, and possibly death.

Decomposition

The breaking down of a substance of compound through a chemical reaction into its similar components.

Demilitarization

The mutilation, destruction, or neutralization of chemical agent material, thereby, rendering it harmless and ineffectual for military purposes.

Desiccant

A substance that has an affinity for water.

Detection Limit

Analytical capability based on the amount of the sample and the sensitivity of the analytical method.

Diesel Fuel Smoke

A visual obscurant used to conceal personnel and equipment. It is formed by injecting diesel fuel into the exhaust manifold of a tactical vehicle where the fuel is vaporized and expelled with the vehicle's exhaust. Upon dilution and cooling to the ambient temperature, the fuel condenses into a dense white smoke.

Dilute Solutions

Those mixtures presenting significantly reduced hazards. A solution of H, HD, L, or HT is considered dilute if its concentration is not greater than 10 milligrams per milliliter (neat agent/solvent) and it contains no more than 100 mg of neat agent. For agent GB, a maximum concentration of 2 mg/mL of agent in a solution containing a maximum quantity of 20 mg of neat agent is considered dilute. For agent VX, a maximum concentration of 1 mg/mL of agent in a solution containing a maximum quantity of 10 mg of neat agent is considered dilute.

DS-2

A decontaminating agent against biological and chemical contamination, an agetropic mixture combining diethylenetriamine (70 percent), ethylene glycol monomethyl ether (28 percent), and sodium hydroxide (2 percent).

Enzyme

Organic substance capable of causing chemical changes to take place quickly at body temperature by catabolic action as in digestion.

Erythema

A severe redness of the skin, as caused by chemical poisoning or sunburn.

Exclusion Area

The area immediately surrounding one or more receptacles in which chemical agents are contained. In the absence of positive preventive measures, access into area constitutes access to the chemical agent.

Experimental Chemical Agent

Chemical substances being tested, developed, or altered for chemical defense purposes that will be used solely by the military. These substances will have toxicities equal to or greater than current nerve or mustard agents.

Explosive Ordnance Disposal (EOD)

The detection, identification, field evaluations, rendering safe, recovery, and final disposal of unexploded explosive ordnance or munitions chemical agents.

Explosive Ordnance Disposal Procedures

Those particular courses or modes of action for access to, recovery, render safe, and final disposal of explosive ordnance or any hazardous material associated with an explosive ordnance disposal incident.

Exposed Worker, Chemical Agent

a. An exposed worker—

- (1) Exhibits clinical signs or symptoms or nerve agent intoxication.
- (2) Has cholinesterase depression, consistent with nerve agent effect.

b. A potentially exposed worker—

- (1) Works in an agent operating area where levels of nerve agent or mustard exceed the protective capability of the personal protective equipment.
- (2) Works in an agent operating area where levels of nerve agent or mustard are detectable and there is a breach in personal protective equipment or engineering controls.

c. An exposed worker is an individual who exhibits clinical signs or symptoms of mustard effect.

Feasibility Study

A study undertaken by the lead agency to develop and evaluate options for remedial action.

Flash Point

The lowest temperature at which a substance gives off enough combustible vapors to produce momentary ignition when a flame is applied under controlled conditions.

Fog Oil Smoke

Smoke generated by injecting mineral oil into a heated manifold. The oil vaporizes upon heating and condenses when exposed to the atmosphere, producing respirable particles. Graphite can be added to fog oil to provide screening in the infrared range of the electromagnetic spectrum. The chemical and physical properties of fog oil are similar to those of petroleum-based lubricating and cutting oils.

G-Series Nerve Agents

Include tabun (GA), sarin (GB), soman (GD), and GF that are members of a class of compounds that are more lethal and quicker acting than mustard. They act rapidly and may be absorbed through the skin or the respiratory tract. Exposure to a lethal dose may cause death in as little as several minutes. These less persistent agents are used to cause immediate casualties and to create a short-term respiratory hazard on the battlefield.

Gas

A fluid that has neither independent shape nor volume but tends to expand indefinitely.

Hexachloroethane Smoke

The toxicity of hexachloroethane (HCE) (referred to as HC smoke) is attributed to the production of zinc chloride. HC smoke is produced by burning a mixture containing roughly equal parts of hexachloroethane and zinc oxide. The U.S. military uses HC smoke in a wide variety of munitions. It is used in smoke pots and smoke grenades to generate a screening effect.

Hg

Mercury.

High-Efficiency Particulate Air (HEPA) Filter

A filter that is at least 99.97 percent efficient in removing particles with a diameter of 0.3 μ ; used to treat exhaust air from equipment that may generate aerosols.

Hydrocarbons

An organic compound containing only carbon hydrogen and often occurring in petroleum, natural gas, coal, and bitumens.

Hydrolyzed

Refers to a compound which has undergone chemical reaction with water; hydrolysis is the reaction of a particular compound (e.g., a chemical warfare agent) with water to form new chemical compounds ("reaction products").

ICt50

Inhalation dose of a chemical agent (vapor or aerosol) that produces a given, defined level of "incapacitation" in 50 percent of the exposed subjects (see ED50, and consider "incapacitation" as the effect). (NOTE: There is no general consensus on a military definition of incapacitation. It can refer to behavioral manifestations, physiologic endpoints, or individual combat effectiveness, all of which may vary depending upon the task the individual soldier is expected to accomplish.)

ID50

Dose of a liquid chemical agent needed to produce "incapacitation" in 50 percent of the exposed subjects (see note under ICt50).

Idiosyncratic Reaction

A genetically determined abnormal reactivity to a chemical.

Igloo

A reinforced concrete, earth-covered shelter used for storing explosives and munitions.

Impervious

Providing protection by precluding penetration of a substance (as demonstrated by methods in Military Standard 282) for the useful life of the item concerned.

Improved (Chemical Agent) Point Detection System (IPDS)

This detection system is a new shipboard point detector and alarm that replaces the Chemical Agent Point Detection System. This system can detect nerve and blister agent vapors at low levels and automatically provides an alarm to the ship.

Incendiary

Primarily an antimaterial compound that generates sufficient heat to cause destructive thermal degradation or destructive combustion of material.

Individual Chemical Agent Detector (ICAD)

A miniature lightweight chemical warfare agent detector that can be worn by the individual. It detects and alarms to nerve, blood, choking, and blister agents and is intended for a variety of applications. It may be used as a point detector.

Industrial Chemical

Chemicals developed or manufactured for use in industrial operations or research, by industry, Government, or the academia. These chemicals are not primarily manufactured for the specific purpose of producing human casualties or rendering equipment, facilities, or areas dangerous for use by man. Hydrogen cyanide (AC), cyanogen chloride (CK), and phosgene (CG) and methylphosphonicdifluoride (DF) are considered industrial chemicals.

Interspecies Dose Conversion

The process of estimating equivalent doses between species (e.g., frequently a known animal dose is converted to estimate an equivalent human dose). The USEPA's cancer risk assessment guidelines generally recommend using the surface area approach unless there is evidence to the contrary. The dose as mg/kg of body weight/day divided by a 10-fold UF is generally used to convert between species for non-cancer effects of chemicals.

Joint Chemical Agent Detector (JCAD)

This detector will employ surface acoustic wave technology to detect nerve and blister agents. It will also allow detection of new forms of nerve agents.

Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD)

This detector is a fully coordinated joint service Research, Development, Test, and Evaluation program, chartered to develop a lightweight standoff chemical detector for the quad-services. It will be capable of scanning 360 degrees x 60 degrees, and automatically detecting nerve or blister agents at a distance up to 5 km. The system will be light, compact, and operate from a stationary position or on the move. The JSLSCAD Michelson interferometer employs a passive infrared system that will detect presence of chemical agents by completing a spectral analysis of target vapor agent chemical clouds. This detector is envisioned for employment on various platforms and in various roles, including fixed site defense, unmanned aerial vehicles, tank and other vehicles, and on board ships.

Joint Service Warning and Identification LIDAR Detector (JSWILD)

This detector is a joint effort chartered to develop a chemical warning and identification system for the quad-services. The JSWILD will be a lightweight, vehicle-mountable, contamination monitoring system, which detects and quantifies all types of chemical agent contamination (including agent rain, vapors, and aerosols) in a standoff mode from a distance of 20 km. In addition, it will provide similar but short-range (1-5 km) capabilities in biological standoff detection as the LR-BSDS. It will operate from fixed sites and ground vehicles. The system has distance-ranging and contamination-mapping capabilities and transmits this information to a battlefield information network.

K Agents

Incapacitating agents.

Levinstein Mustard (H)

A blister agent. It contains about 30 percent sulfur impurities. The properties of H are essentially the same as HD except that sulfur impurities lessen its effectiveness and depress the freezing point by 2 to 5 degrees.

M8 Chemical Agent Detection Paper

A chemically treated, dye-impregnated paper, issued in a book of 25 sheets. It is designed to detect liquid V, G, and H agents. M8 paper will change colors to identify non-persistent G-type nerve (yellow), V-type nerve (black or dark green), or blister (red) agents. It is included in the M256A I Kit and in the M18A2 Chemical Agent Detection Kit.

M8A1 Automatic Chemical Agent Alarm (ACAA) System

The only remote continuous air-sampling alarm in the U.S. Army. This alarm will sample the air for the presence of nerve agent vapors (GA, GB, GD, or VX) only. It is capable of detecting nerve agent levels in 2 minutes or less. The system is an electrochemical, point sampling, chemical agent alarm that can be hand-carried, backpacked, or mounted on a tactical vehicle. It consists of the M43A1 detector, as many as 5 M42 alarm units, and various power supplies. The M8A1 will automatically signal the presence of the nerve agent in the air by providing troops with both an audible and visible warning. It requires an NRC license.

M9 Chemical Agent Detection Paper

A self-adhesive paper that can be readily attached to the body or to vehicles, shelters, and other equipment. It cannot distinguish the identity of agents. The agent sensitive dye will turn red upon

contact with liquid nerve agents (G and V) and blister agents (H and L). The paper produced colored spots when in contact with nerve and blister agents.

M11 Portable Decontaminating Apparatus

A device containing DS-2 used to decontaminate small areas, such as the steering wheel or other equipment that soldiers must touch. It is filled with 1 1/3 quarts of DS-2.

M13 Portable Decontaminating Apparatus

The M13 is about the size of a 5-gallon gasoline can and is used to decontaminate vehicles and crew-served weapons larger than a .50-caliber piece.

M17 Lightweight Decontamination System (LDS)

The M17 is a portable pump and water-heating unit for producing hot water and steam. The system incorporates a 1,580-gallon collapsible water tank, two wand assemblies, connecting hoses, and a shower rail. It is issued to Army battalion-size units and to chemical decontamination companies and battalions.

M17 Protective Mask

This chemical and biological mask assembly includes the mask, the M15A1 carrier, two lens outserts, and the M1 waterproofing bag. It is made of molded rubber with filter elements in each cheek, plastic eye lenses, and a voice emitter outlet valve in the front. The A1 and A2 models include the capability to drink water while masked. The mask protects the wearer's face, eyes, and respiratory tract against field concentrations of chemical and biological agents.

M18A2 Chemical Agent Detector Kit

A kit used by technical escort teams and used in depots. It consists of portable tests capable of detecting selected choking and blood agents as well as nerve agents and blister (e.g., mustards, arsenicals, urticants) agents. It is used to detect and classify dangerous concentrations of toxic chemical agents in the air and liquid chemical agent contamination on exposed surfaces.

M-21 Remote Sensing Chemical Agent Automatic Alarm (RSCAAL)

A two-man portable tripod-mounted, automatic scanning, passive, infrared sensor which detects nerve and blister agent vapor clouds based on changes in the infrared energy emitted from remote objects, or from a cloud formed by the agent. The M-21 is line-of-sight dependent with a detection range up to 3 miles and a field of view of 1.5 degrees vertical and 60 degrees horizontal. It will be used for surveillance and reconnaissance missions and will search areas between enemy and friendly forces.

M22 Automatic Chemical Agent Alarm (ACADA)

An advanced, point-sampling, chemical agent alarm system employing ion-mobility spectrometry. It is man-portable, operates independently after system start-up, and provides an audible and visual alarm. The system detects and identifies nerve and blister agents. It also provides communications interface for automatic battlefield warning and reporting. The M22 system replaces the M8A1 Alarm as an automatic point detector and augments the CAM as a survey instrument.

M34 Soil Sampling Kit

Materials used to sample soil, surface matter, and water.

M40 / M42 Chemical / Biological Protective Mask

This is the standard protective mask. The mask consists of a silicone face piece with in-turned periphery, binocular eye lens system, and elastic head harness. Other features include front and side voice emitters, allowing for better communications, drink tube, clear, and tinted inserts and filter canister with NATO standard threads. The mask protects against chemical and biological agents, toxins, radioactive fallout particles, and battlefield contaminants. The M40/42 Series field protective masks will replace the M17 (general purpose), M25 (vehicle crewman), and M9 (heavy-duty) masks.

M-90 Automatic Agent Detector (AMAD)

An automatic nerve and mustard agent detector that detects agents in vapor form. It transmits an alarm by radio to a central alarm unit. It is currently used by the Air Force.

M90 DIA Chemical Agent Detector (CAD)

A man-portable instrument designed to determine and indicate the hazard from nerve or blister (mustard) agent vapors present in the air. Hazard levels are indicated in high, medium, and low concentrations. This detector is programmable, with the capability to add new agents as they are developed. It is operable over a multitude of operational platforms including day or night conditions. It can be used to verify clean areas, perform area surveys, identify contamination, and verify the effectiveness of decontamination operations. The M90 is currently fielded within the Air Force.

M-93 and M-93A1 FOX

This reconnaissance system provides NBC protection, warning, and sampling equipment integrated into a high speed, high mobility armored carrier with collection protection for its crew. The system contains a CAM, a chemical agent detector alarm, a radiation detection device, a navigation system, secure communications, and an area marking system. The system provides combat information on the presence of NBC hazards and can operate in all areas, in adverse weather and under all types of battlefield conditions.

M256A1 Chemical Agent Detector Kit

A portable and disposable chemical agent detector kit consisting of 12 individually packaged samplers/detectors and a packet of M8 detector paper. It is used at squad, crew or section level to detect and identify field concentrations of nerve, blister or blood agent vapors. It is usually used to determine when it is safe to unmask in about 15 to 20 minutes, to locate and identify chemical hazards, and to monitor decontamination effectiveness.

M258A1 Skin Decontamination Kit

A kit issued to each soldier containing wipes with solutions that will neutralize most nerve and blister agents.

M272 Water Testing Kit

A lightweight portable kit used to detect and identify dangerous levels of common chemical warfare agents in raw and treated water in about seven minutes. It is a test water sampler and is not a continuous monitor. Each kit conducts 25 tests for each agent.

M291 Skin Decontamination Kit

This kit is used to decontaminate the soldier's hands, face, ears, and neck. Packets in the kit consist of a foil-laminated fiber material containing a reactive resin. It replaces the M258A1 Skin Decontamination Kit.

Maximum Credible Event

The worst single event that could occur at any time with maximal release of chemical agent from a munition, bulk container, or process as a result of an unintended, unplanned, or accidental occurrence. The event must be realistic with reasonable probability of occurrence.

Merck Index

Includes basic information on several thousand compounds that are important in general chemical and biochemical practice.

Metabolic Products

The breakdown products of the chemical processes in living organisms that convert food into new tissues and energy; they are also products or reactions which tend to detoxify nonfood chemicals.

Mini-Cam

Miniature chemical agent monitor.

Miosis

The excessive smallness or contraction of the pupil of the eye. The pupil is unable to dilate and remains contracted; thus, performance of tasks, navigating on foot, identifying or engaging targets, or driving vehicles is practically impossible. Miosis is often accompanied by pain, headaches, and pinpointing of the pupils.

Monitoring

The continued or periodic act of seeking to determine whether a chemical agent is present.

Most Probable Event

The worst potential mishap most likely to occur during routine handling, storage, maintenance, or surveillance operations, which results in the release of agent and exposure to personnel.

Mustard Agents

A category of blister agents including the sulfur mustards (H, HD) that are chlorinated thioethers, and the nitrogen mustards (HN-1, HN-2, HN-3) that are derivatives of ammonia.

Napalm

An incendiary mixture typically made of polystyrene, benzene, and gasoline and used in flame weapons.

Neat Agent Equivalent

The actual volume of chemical agents that will be formed when two separate volumes of an agent's precursors are mixed. The resulting chemical agent is deemed to be pure for purposes of accountability and for determining storage limits.

Neat Chemical Agent

A non-diluted, full-strength (as manufactured) chemical agent in any concentration in excess of those designated exempt. A chemical agent manufactured by the binary synthesis route will also be considered a neat agent regardless of purity.

Nerve Agent

Organic esters of phosphoric acid used as a chemical warfare agent because of their extreme toxicity (tabun (GA), sarin (GB), soman (GD), GF, and VX). All are potent inhibitors of the enzyme, acetylcholinesterase, which is responsible for the degradation of the neurotransmitter, acetylcholine. Symptoms result from excess accumulation of acetylcholine in neuronal synapses or myoneural junctions. Nerve agents are readily absorbed by inhalation and / or through intact skin.

Neutralent

Those materials remaining from the chemical neutralization of agents.

Neutralization

Altering the chemical, physical, and toxicological properties to render the chemical agent ineffective for use as intended.

Nitrogen Mustard

A form of blister agent that includes HN-1, HN-2, and HN-3.

Nonlethal Agents

Chemical agents that can incapacitate but which, by themselves, are not intended to cause death.

Nonpersistent Agent

Chemical agent that when released dissipates and / or loses its capability to cause casualties after 10 to 15 minutes.

Nonstockpile Chemical Materiel

The Army has five categories of non-stockpile chemical warfare materiel—

- a. *Binary chemical weapons* form lethal chemical agents by mixing two less toxic chemicals. Army policy requires that the components of binary weapons only be loaded together into a munition immediately prior to use on the battlefield, thus forming the lethal chemical agent during flight to the target.
- b. *Buried chemical warfare materiel* includes any buried materiel. Land burial was a principal means of disposing of hazardous materials for many years. In most cases, the materiel was burned or chemically neutralized prior to burial.
- c. *Recovered chemical weapons* include items recovered during range-clearing operations from chemical burial sites, and from research and development testing. Recovered chemical warfare materiel is over packed and either stored on site or transported and stored at a permitted Department of Defense site following recovery from range-clearing operations and burial.
- d. *Former production facilities* include government facilities that produced chemical weapons and agents prior to the signing of the Chemical Weapons Convention. These facilities produced chemical agent, precursors, and components for chemical weapons or were used for loading and filling munitions.
- e. *Miscellaneous chemical warfare materiel* includes unfilled munitions, support equipment, and devices designed to be used with chemical weapons. These include complete assembled rounds without chemical fill, with or without bursters and fuzes; simulant-filled munitions; inert munitions; dummy munitions; bursters and fuzes; empty rock warheads and motors; projectile cases; and other components of metal and plastic parts. <http://www-pmcd.apgea.armymil/text/NSCMP/index.html>

Occupational Environment Controls

The basic principles for controlling the workplace environment are substitution, isolation, and ventilation.

On-Scene Commander

A general officer that has operational control of emergency response forces and supervises all on-site operations at the scene of a chemical accident. Also referred to as Service Response Force Commander.

On-Scene Coordinator

The person designated to direct cleanup efforts under the NCP.

Organic Solvent

An organic chemical compound that dissolves another to form a solution. Examples include alcohols, turpentine, kerosene, benzene, chloroform, acetone, carbon tetrachloride, and toluene.

Persistent Agent

Chemical agents that do not hydrolyze or volatilize readily (e.g., VX and HD.)

Phosgene

Carbonyl chloride; a colorless liquid below 8.2 degrees Celsius, but an extremely poisonous gas at ordinary temperatures; it is an insidious gas, since it is not immediately irritating, even when fatal concentrations are inhaled.

Phytotoxin

A toxin derived from a plant. An example is ricin from the castor bean.

Potentially Exposed Worker

An individual who works in an agent-operating area where agent levels—

- a. Exceed the protective capability of the personal protective equipment.
- b. Are detectable and there is a breach of personal protective equipment or engineering controls.

Precursor

Any chemical reactant that takes part at any stage in the production by whatever method of a toxic chemical. This includes any key component of a binary or multicomponent chemical system.

Probit Analysis

Application of the methods of Bliss to determine the slope and various effective dosage levels (e.g., LCt50, LD50, LCt16, LD16, LCt84, LD84, LCt05, LD05, etc.) for quantal dose-response data.

Prostration

A complete physical or mental exhaustion; extreme exhaustion or powerlessness.

Protection Factor

The ratio of the concentration outside the personal protective equipment to the concentration inside the personal protective equipment. Measurement sites are critical for proper determination (e.g., for a protective mask, the measurements inside the mask would be made at a subject's breathing zone, and the measurements outside the mask would be made in a corresponding zone).

Reagent

A chemical substance used to produce a chemical reaction.

Red Phosphorus/Butyl Rubber Smoke

The military application of phosphorus smokes for environmental screening can contain either white phosphorus or red phosphorus in various matrices (e.g., felt, butyl rubber, or polymer epoxy binders). The compositions of the various phosphorus smokes are similar, being composed primarily of polyphosphoric acid with less than 1 percent trace levels of organic compounds. The purpose of the butyl rubber is to reduce the cloud-pillar effect found with pure red phosphorus. In Army field use, red phosphorus smoke is deployed explosively from grenades and mortar shells. It is used in grenades to provide a partial self-protection system for armored vehicles. It is also the major ingredient in mortar rounds used to generate smoke.

Relative Risk (sometimes referred to as Risk Ratio)

The ratio of incidence or risk among exposed individuals to incidence or risk among nonexposed individuals.

Release

Controlled or uncontrolled escape of chemical agent(s) into the environment. Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant).

Remedial Actions

Activities taken to restore a contaminated site to its pre-contaminated condition. In contrast to removal actions, these are longer-term actions, including cleanup, treatment, and neutralization of contamination and access control or permanent relocation of residents, if necessary. Remedial actions are coordinated by the remedial project manager. U.S. Department of the Army Pamphlet 50-6, *Chemical Accident or Incident Response and Assistance (CAIRA) Operations*, treats remedial actions as taking place in a "non-emergency atmosphere," and describes the goal as returning the chemical accident or incident site to "technically achievable and acceptable conditions."

Removal Actions

Immediate, short-term response activities for cleanup and removal of hazardous materials, assessment of the release, and actions to protect the public such as temporary relocation (CERCLA,

and NCP; Code of Federal Regulations, Part 300, et seq., Title 40). Removal operations are coordinated by the on-scene coordinator.

Reproductive Effect

A toxic effect of a substance that is evident in the second or third generation of exposed grandparents.

Respond

Removal, remedy, or remedial actions.

Reversible versus Irreversible Toxicity

Reversible toxic effects are those that can be repaired, usually by a specific tissue's ability to regenerate or mend itself after chemical exposure, while irreversible toxic effects are those that cannot be repaired.

Rhinitis

The inflammation of the mucous membrane of the nose.

Riot Control Agents

Compounds widely used by governments for domestic law enforcement purposes and which produce transient effects on man that disappear within minutes after removal from exposure.

Safety Assessment Report (SAR)

A formal summary of the safety data collected during the design and development of the system. In this summary, the material developer summarizes the hazard potential of the item, provides a risk assessment, and recommends procedures or other corrective actions to reduce these hazards to an acceptable level.

Safety Controls

Mandatory, procedural safeguards approved by the Secretary of the Army and determined to be necessary per safety studies and reviews. Safety controls ensure maximum safety of chemical agents throughout the life of the chemical weapon. Controls will be consistent with operational requirements.

Safety Objectives

Criteria for comparing and judging measures for adequacy. Safety objectives incorporate the safest measures consistent with operational requirements.

Sample Data Collection (SDC)

A method for obtaining information on the performance and maintainability of an item of equipment. Data are obtained directly from observations made in the field. An effort is made to see that the sample from which feedback is obtained represents the total population.

Sarin

ISOGropyl methylphosphonofluoridate; it is a non-persistent organophosphate nerve agent also known as GB. Its chemical formula is C₄H₁₀FO₂P. It is a colorless liquid or vapor with almost no odor in its pure state. Symptoms include pupil constriction, blurred or dimmed vision, pain in eyeballs; chest tightness, difficulty in breathing; sweating, salivation, increased bronchial secretions, bradycardia, hypotension, vomiting and diarrhea, bronchoconstriction, and urinary and fecal incontinence.

Screening and Signaling Smokes

Compounds that produce an obscuring smoke when burned, hydrolyzed, or atomized; they are used to limit observation and to reduce the effectiveness of aimed fire. Signaling smokes are similar to screening smokes, except that signaling smokes generally are colored and are used for visual communication. The standard colors are green, red, violet, and yellow.

Self-Aid

Administration of a chemical agent antidote to one-self upon experiencing early symptoms of chemical agent poisoning.

Service Response Force (SRF)

A Department of the Army-level emergency response organization, commanded by a general officer, capable of performing and sustaining the CAIRA mission. This force consists of a staff and specialized teams from various agencies and organizations involved in the response to and recovery from a chemical accident/incident.

Service Response Force Commander (SRFC)

A general officer of the Army with chemical background who has been dispatched by Headquarters, Army Materiel Command, to the scene of a chemical accident or incident. Upon arrival, the SRFC assumes responsibility for all operations at the accident scene and commands all emergency forces.

Severe Effects

Effects for the nerve agents that include systemic effects such as vomiting, involuntary urination and / or defecation, tremors, collapse, or convulsions. Note that dosages producing these effects may not be significantly different from dosages producing lethality.

Shipboard Chemical Agent Point Detection System (CAPDS)

A fixed system capable of detecting nerve agents in vapor form using a baffle tube ionization spectrometer. This CAPDS obtains a sample of external air, ionizes airborne vapor molecules, and collects them on a charged plate after eliminating lighter molecules via the baffle structure. The system is installed in an upper superstructure level and provides ships with the capability to detect nerve agents. It will be activated when ships enter high threat areas and during operation in littoral waterways. The system is installed on most surface combatant's ships.

Simulant

A chemical that appears and acts like an agent.

Slope

The probit or Bliss Slope of the graph of the probit of the response vs. the log of the dose.

Slope Factor

A plausible, upper bound estimate of the probability of a response-per-unit intake of a chemical over a lifetime. The slope factor is used to estimate an upper bound probability of an individual developing cancer as a result of a lifetime of exposure to a particular level of a potential carcinogen.

Smoke

Solid or liquid particles 0.3 to 0.5 μ m in diameter. A suspension of particles in a gaseous medium. A substance used in warfare for screening purposes.

Soman

The chemical Pinacolyl methyl phosphonofluoridate, methyl-1, 2, 2-trimethylpropyl ester. It is a nerve agent known as GD; its chemical formula is $(CH_3)_3CCH(CH_3)OPF(O)CH_3$. It is a colorless liquid with a fruity or camphor odor. It undergoes "aging" very quickly, rendering oxime therapy useless and making poisoning with this agent more difficult to treat. Symptoms include pupil constriction, blurred and dimmed vision, pain in eyeballs; chest tightness, difficulty in breathing; sweating, salivation, increased bronchial secretions, bradycardia, hypotension, vomiting and diarrhea, bronchoconstriction, and urinary and fecal incontinence.

Source Emissions

All intentional, uncontrolled releases of nerve agents GA, GB, GD, and VX to include stack emissions.

Standard Glove

All gloves covered by a military specification for example, toxicological agent protective and gloveset glove.

Stockpile

Bulk chemicals and chemical munitions.

Sulfur Mustard

A blister agent also known as H (or HD) for distilled mustard. Bis(2-chloroethyl) sulfide. The chemical formula is C₄H₈Cl₂S. It presents both a respiratory and percutaneous hazard, forcing military personnel to don not only gas masks but also protective overgarments. They are persistent and present long-term hazards, further hindering victims by forcing them to decontaminate.

Super Tropical Bleach (STB)

A mixture of calcium oxide and bleaching powder used as a decontaminating agent.

TBis[2-(2-chloroethylthio)ethyl] ether.

The chemical formula is C₈H₁₆Cl₂O₂S₂. T is a sulfur, oxygen and chlorine compound similar in structure to HD. When T is added to HD, the resulting mixture has enhanced physiological and physical effects, making it a more effective chemical warfare agent.

Tabun

Ethyl N,N-dimethylphosphoramidocyanidate. This is a non-persistent organophosphate nerve agent also known as GA. Its chemical formula is C₅H₁₁N₂O₂P.

Tear Gas

Chemical compound that causes a flow of tears and irritation of the skin. It is widely used for training, riot control, and situations where long-term incapacitation is unacceptable.

Technical Escort

Individuals technically qualified and properly equipped to accompany designated materiel that requires a high degree to safety and security during shipment.

Temporary Exclusion Area

The area immediately surrounding chemical agent material that has been removed from its secure container, storage structure, storage area, or other authorized storage configuration.

Toxic Chemical

Any chemical that through its chemical action on life processes can cause death, temporary incapacitation or permanent harm to humans or animals. This includes all such chemicals, regardless of their origin or of their method of production, and regardless of whether they are produced in facilities, in munitions, or elsewhere.

Toxicity Data

- a. Quantal Data: Specifies the number of animals affected as a function of dose rate (e.g., mg/kg/day) for a single type of effect. The number of animals with tumors or that die from a chemical exposure is an example. Quantal data are often reported as an incidence (percent response) and, thus, can be used to construct a dose-response curve.
- b. Continuous Data: Represents the change in some measured value of a biological indicator (e.g., organ weights, triglyceride levels in the liver, and serum enzyme measurements) as a function of dose rate. Continuous data can be used to construct a dose-effect curve.
- c. Graded Data: Specifies the form of severity of adverse effects as a function of dose rate without reference to the number of animals affected or to a continuous measure of one parameter. Graded data often are presented as categories (liver necrosis, lung lesions) or as judgments of severity. Fatty infiltration of the liver, single-cell liver necrosis, and liver necrosis are examples of sequence of severity judgments. Graded data can be used to construct a dose severity curve.

Toxicity Value

A numerical expression of a substance's dose-response relationship that is used in risk assessments. The most common toxicity values used in Superfund program risk assessments are reference doses (for non-carcinogenic effects) and slope factors (for carcinogenic effects).

Toxicological Effects

- a. Additive: Situation in which the combined effect of two chemicals is equal to the sum of the effect of each agent given alone (e.g., 2+3=5).
- b. Synergistic: Situation in which the combined effect of two chemicals is much greater than the sum of the effect of each agent given alone (e.g., 2+3=20).
- c. Potentiation: Situation in which one substance does not have a toxic effect, but when it is added to another chemical, it makes the latter much more toxic (e.g., 0+3=10).
- d. Antagonism: Situation in which two chemicals given together interfere with each other's actions or one interferes with the action of the other chemical (e.g., 4+6=8, 4+0=1, 4+4=0).

Training Agent and Compounds

An agent authorized for use in training to enhance proficiency for operating in a chemical environment.

Unitary Chemical Munitions

Munitions designed to contain a single-component chemical agent for release on a target.

Urticant

Category of blister agents with a disagreeable, penetrating odor, causing an immediate severe burning sensation, intense pain and a feeling of numbness.

U.S. Army Nuclear and Chemical Agency (USANCA)

The mission of USANCA is to provide expert technical support and assistance to all Army elements worldwide and to other U.S. Government and NATO agencies engaged in NBC programs.

Vesicant

Causing blisters or vesicles.

Vesicating Agent

Agent that acts on the eyes and lungs and blisters the skin.

Vesication

The process of blistering.

Vomiting Agent

Compound that produces a strong pepperlike irritation in the upper respiratory tract, with irritation of the eyes and tearing; causes violent, uncontrollable sneezing, cough, nausea, vomiting, and general discomfort. Effects last from 30 minutes to several hours.

XM21 Remote Sensing Chemical Agent Alarm (RSCAAL)

A passive infrared device used to detect and identify chemical agent clouds. It can perform reconnaissance and point or area surveillance missions.

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CUMBERLAND COUNTY EMERGENCY OPERATIONS PLAN

GLOSSARY - BIOTERRORISM

Biological Threat - the intentional use of Biological Threat Agents as weapons designed to kill or injure humans, animals, plants, or to damage equipment.

Biological Threat Agents - Living organisms or the materials derived from them that cause deterioration of material. Biological Threat Agents may be used as liquids, droplets, slurry, aerosols, or dry powders.

Bacteria - Single cell organisms that multiply by cell division and that can cause disease in humans, plants, and animals.

Etiological Agents - Living microorganisms, or toxins, which organisms may cause human disease.

Anthrax - An infectious, usually fatal disease of warm blooded animals, especially cattle and sheep, caused by the bacillus anthracis bacteria. The spores are very resistant in the environment and may survive decades in certain soil conditions. Spores are dormant forms of a bacterium that produces the toxin.

Toxins - Toxin substance of natural origin produced by an animal, plant, or microbe. They differ from chemical substances in that they are not man made. Toxins may include Botulism, Ricin and Mycotoxins.

Cumberland County Emergency Services will function as the **coordinating agency** for the following agencies involved in a potential Bio-Terrorism Incident:

- Law Enforcement - Cumberland County Sheriffs Office, Local Municipal Police Departments, State/Federal Law Enforcement Agencies.
- Health Agencies - Cumberland County Health Dept., Blue Ridge Health Care, NC Dept. of Health & Human Services, Cumberland County Emergency Medical Services.
- Please refer to the Cumberland County Health Department Bio-Terrorism Appendix to reference Cumberland County Emergency Services responsibilities as addressed in the plan.

Biological Threat Agent Incidents

Objectives

- Remove people from harms way
- Assess situation
- Be cognizant of secondary devices
- Secure the perimeter, set up operations areas, and establish hazard control zones (i.e. hot, warm, cold)
- Control and identify agents involved
- Rescue, consider decontamination, triage, treat, and transport victims
- Stabilize incident

- Avoid additional contamination
- Secure evidence and treat as a crime scene

On-Scene General Assessment

In assessing the situation, you should consider:

- Evacuating persons from the potential at-risk areas to minimize potential exposure
- Number of apparent victims
- Weather conditions, wind direction, atmospheric conditions, and time of day
- Plume direction (vapor / cloud movement)
- Types of injuries and symptoms presented (potentially none if recent biological incident)
- Information from witnesses (what they saw and heard)
- Exact location of the incident
- Nature of agent and type of exposure
- A safe access route and staging area
- Isolating area and deny entry

Additionally Ensure First Responders (AWARE)

- Approach scene from upwind/upgrade
- Wear at least respiratory protection immediately
- Alert other First Responders of potentially dangerous conditions
- Restrict entry to the area
- Evaluate victims signs and symptoms and alert others
- Observe Possible Indicators of a Biological Threat Agent:
- Unusual dead and / or dying animals (note this will not occur in the early stages of an incident)
- Unusual casualties
- Unusual liquid, spray, powder or vapor

Hazard Assessment

Types

- Bacteria (e.g. anthrax, plague)
- Virus (e.g. smallpox, viral hemorrhagic fevers)
- Toxins (e.g. ricin, botulism)
- *Bacteria and Virus types are living organisms. They:*
 - Enter the body via inhalation, ingestion, or breaks in the skin
 - Grow and reproduce
 - Can be contagious and cause an epidemic
- *Toxins are not living organisms. They:*
 - Enter the body the same as pathogens

- Are not contagious
- *Characteristics:*
 - Requires a dispersing device typically for aerosol generation
 - Non-volatile
 - Is not absorbed through intact skin
 - More toxic by weight than chemical agents and industrial chemicals
 - Poses a possible inhalation hazard
 - Have a delayed effect ranging from several hours, to days, or weeks
 - Are invisible to our senses

Response Strategy

Personal Protective equipment, decontamination, and/or prophylaxis treatment should not be required unless hazards or risk are indicated. Routine Law Enforcement investigation (similar to a bomb threat):

- Persons in the at-risk areas should be evacuated immediately and evaluated by medical/public health professionals as appropriate.
- Treat as a crime scene.
- Information gathering at the scene (threat assessment to determine credibility).
- Screen package / envelope by Bomb Squad to ensure no dispersal mechanism / device inside.
- Double bag the envelope and place in a suitable container like an evidence paint can.
- Control the material as evidence with documentation of chain of custody and follow the FBI plan for laboratory analysis through the local FBI office.
- Search to confirm no substance or additional package/envelope is present.
- Assess the building ventilation system to rule out forced entry and tampering.
- An inspection of the buildings ventilation system may be warranted based on the assessment.
- Attention should be focused on appliances or devices foreign to the surroundings.

Chemical Threat Agent Incidents

Objectives

- Remove people from harms way
- Assess situation
- Be cognizant of secondary devices
- Secure the perimeter, set up operations areas, and establish hazard control zones (i.e. hot, warm, cold)
- Control and identify agents involved
- Rescue, consider decontamination, triage, treat, and transport victims
- Stabilize incident
- Avoid additional contamination
- Secure evidence and treat as a crime scene

On-Scene General Assessment

In assessing the situation, you should consider:

- Evacuating persons from the potential at-risk areas to minimize potential exposure
- Number of apparent victims
- Weather conditions, wind direction, atmospheric conditions, and time of day
- Plume direction (vapor / cloud movement)
- Types of injuries and symptoms presented (potentially none if recent biological incident)
- Information from witnesses (what they saw and heard)
- Exact location of the incident
- Nature of agent and type of exposure
- A safe access route and staging area
- Isolating area and deny entry

Additionally Ensure First Responders (AWARE)

- **A**pproach scene from upwind/upgrade
- **W**ear at least respiratory protection immediately
- **A**lert other First Responders of potentially dangerous conditions
- **R**estrict entry to the area
- **E**valuate victims signs and symptoms and alert others

Observe possible indicators of a Chemical Threat Agent:

- Unusual dead and / or dying animals (note this will not occur in the early stages of an incident)
- Unusual casualties
- Unusual liquid, spray, powder, or vapor
- Unusual devices/packages

Hazard Assessment

Characteristics

- Requires a dispersion device typically aerosol generation
- Requires making a weapon
- Can be found as a solid, liquid, or gas
- The less volatile the agent, the more persistent
- Clinical effects vary from immediate to hours
- *Effects of chemical agents are affected by:*
 - temperature
 - humidity
 - precipitation
 - wind speed
 - nature of terrain and buildings

- *Types*

- Nerve Agents
- Blister Agents
- Blood Agents
- Choking Agents

Protective equipment or decontamination and prophylaxis treatment should not be required unless hazards or risks are indicated.

- Law Enforcement response including local police and FBI
- Consider whether full Fire Department response is needed unless suspicious material or device is present or individuals are symptomatic
- Consider whether full HazMat response is needed unless suspicious material or device is present or individuals are symptomatic
- Treat as a crime scene

Response Strategy

Personal Protective equipment, decontamination, and / or prophylaxis treatment should not be required unless hazards or risks are indicated. Routine Law Enforcement investigation (similar to a bomb threat).

- Persons in the at-risk areas should be evacuated immediately and evaluated by medical/public health professionals as appropriate.
- Treat as a crime scene.
- Information gathering at the scene (threat assessment to determine credibility).
- Screen package / envelope by Bomb Squad to ensure no dispersal mechanism / device inside.
- Double bag the envelope and place in a suitable container like an evidence paint can.
- Control the material as evidence with documentation of chain of custody and follow the FBI plan for laboratory analysis through the local FBI office.
- Search to confirm no substance or additional package / envelope is present.
- Assess the building ventilation system to rule out forced entry and tampering.
- An inspection of the building's ventilation system may be warranted based on the assessment.
- Attention should be focused on appliances or devices foreign to the surroundings.

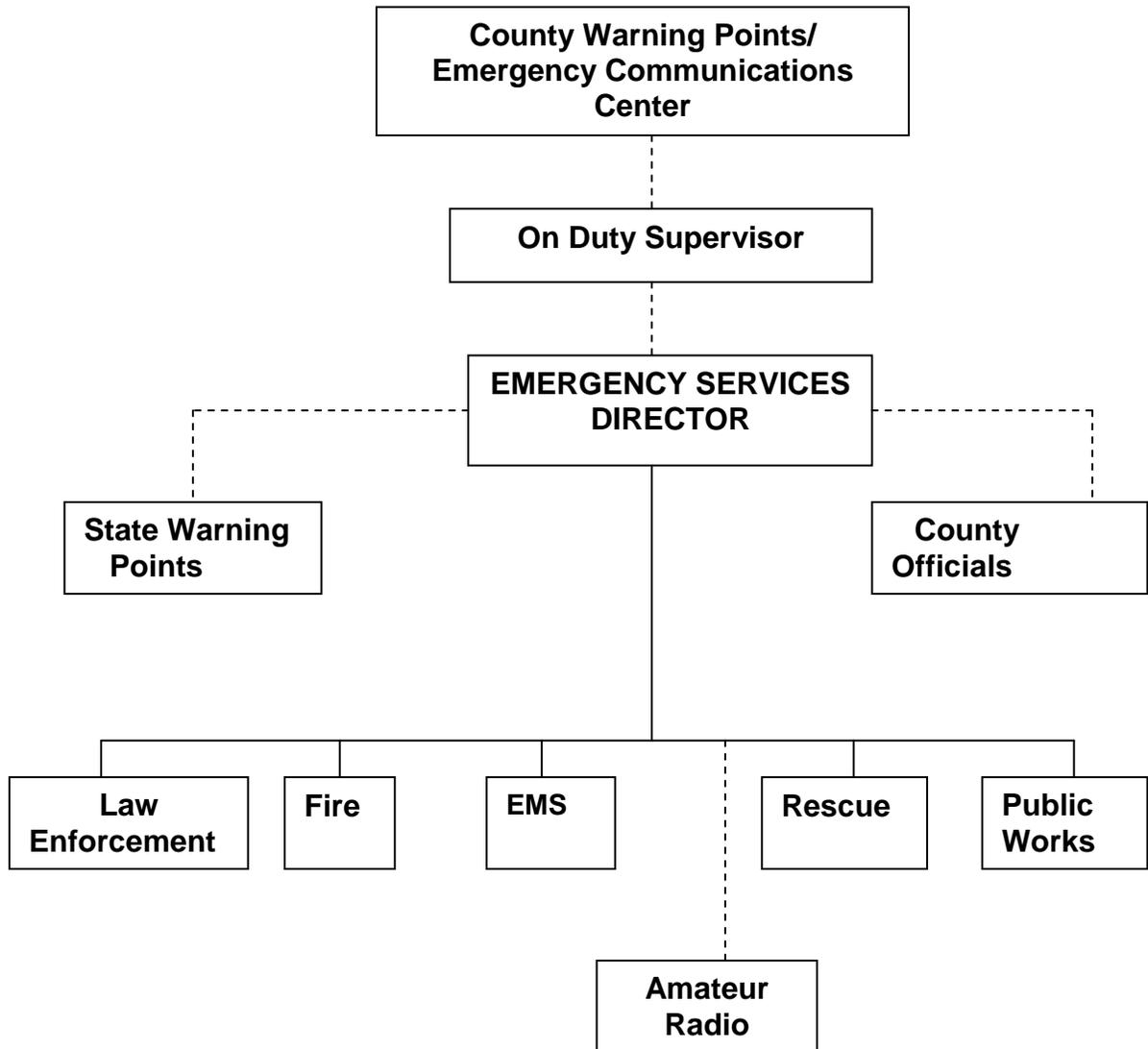
Please refer to On-Scene Commanders Field Guide for Responding to Biological / Chemical Threats.

Reference: Hazardous Materials annex.

APPENDIX 1-1

(COMMUNICATIONS, NOTIFICATION, AND WARNING)

COMMUNICATIONS ORGANIZATIONAL STRUCTURE



_____ COMMAND

- - - - - COORDINATOR

APPENDIX 1-3

(COMMUNICATIONS, NOTIFICATION, AND WARNING)

PRIORITY FOR RESTORATION OF TELEPHONE SERVICE

1. Emergency Services {Communications}	911
2. Sheriff's Office	323-1500
3. Emergency Service (Phone Loops)	484-X422, 483-X749, 483-X299, 323-X105
4. Fayetteville Fire / Police (Phone Loops)	483-X429, 483-X524, 323-X047, 323-X079, 323-X155, 323-X168, 483-X576, 483-X880
5. Public Works Commission	483-1382
6. Cape Fear Valley Medical Center	609-4000
7. Highsmith-Rainey Hospital	609-1000
8. Emergency Services Department	321-6736
9. Hope Mills Police Department	425-4103
10. Spring Lake Police Department	436-0350
11. Department of Social Services	323-1540
12. American Red Cross	867-8151
13. Salvation Army	483-8119
14. N.C. National Guard	484-5133
15. Carolina Power & Light	826-2687

APPENDIX 1-4

(COMMUNICATIONS, NOTIFICATION, AND WARNING)

EMERGENCY NOTIFICATION LIST

<u>ORGANIZATION</u>	<u>PRIMARY TELEPHONE</u>	<u>SECONDARY RADIO</u>
County Warning Point / Emergency Communications Center	483-5467 483-2204	KIV 436 154.250 KTI 567 155.280
Emergency Services Director	321-6736	KAX 295 47.540
After Hours	483-5467	KAX 295 47.580
EM 1		155.250
EM 1		155.280
Area "4" Emergency Management Director	(252) 520-4923	
WPFZ		272 47.540
WPFZ		272 47.580
State Warning Point	1-800-662-7956 (919) 733-3861	
Chairman, County Board of Commissioners	678-7771	
County Manager	678-7723	
American Red Cross Liaison	867-8151	
Pager Service	823-4298	
Mayor, City of Fayetteville	433-1992	
After Hours	433-1914	
Mayor, Town of Hope Mills	424-4555	
After Hours	425-4103	
Mayor, Town of Spring Lake	436-0241	
After Hours	436-0350	
Mayor, Town of Stedman	323-1892	
Mayor, Town of Wade	485-3502	
<u>ORGANIZATION</u>	<u>PRIMARY TELEPHONE</u>	<u>SECONDARY RADIO</u>
Mayor, Town of Linden	980-0119	
Mayor, Town of Falcon	980-1355	
Mayor, Town of Godwin	980-1674	
After Hours	980-1674	

APPENDIX 2-1
(PUBLIC INFORMATION)
SAMPLE NEWS RELEASES

1. Sample News Release - Shelters opened for Natural or Technological Hazard
2. Sample Initial News Release Format
3. Sample News Release - Information for Stay Puts
4. Sample News Release - Disabled and Elderly
5. Sample News Release - Rumor Control
6. Sample News Release - Evacuation Plan
7. Sample News Release - Severe International Crisis

ATTACHMENT 2-A-1
SAMPLE NEWS RELEASE
CUMBERLAND COUNTY

SHELTERS OPENED FOR NATURAL OR TECHNOLOGICAL HAZARD

Contact: _____

Phone: _____

Date: _____

_____, Chairman of the County Commissioners, announced today that due to _____ the Cumberland County Plan for Emergency Shelters will be implemented. Emergency Shelters are being established at _____, and _____. The shelters are being set up in coordination with the American Red Cross and the County Department of Social Services and will provide shelter and food for citizens.

Chairman _____ pointed out that although the shelters are being opened, space is limited and a visit to friends or relatives who have electrical power and heat would be a good idea. Also he / she said that pets are not allowed in the shelters and should be left at the animal shelter, animal hospital, kennel or other safe places.

_____, Emergency Services Director for Cumberland County, said all persons coming to the shelter should bring bedding, special medicines and foods, (including foods for babies) and flashlights. If transportation is needed, call the Emergency Services Office at (910) 321-6736 and we will try to assist you in finding transportation.

NOTE: Radio and Television, please repeat release at 15 minute intervals.

ATTACHMENT 2-A-2
SAMPLE NEWS RELEASE
CUMBERLAND COUNTY
EMERGENCY PUBLIC INFORMATION

Contact: _____

Phone: _____

Date: _____

Governor _____ today directed evacuation to be implemented following the announcement of a national emergency by President _____.

Residents of _____ County will begin arriving in _____ County according to a spokesman for the _____ Office of Emergency Services.

The Governor said the evacuation plan will afford the maximum safety possible for those citizens asked to leave their homes and he assured them their property would be protected by law enforcement authorities.

County Officials asked that all residents of _____ County assist those coming into the communities in any way possible. He said they would be traveling via car and bus and would be registered and assigned to emergency shelters at the reception centers located in _____ County. He also noted that volunteers to serve as host families are needed. Anyone interested in serving in that role should contact the Office of Emergency Services located in the Law Enforcement Center, 131 Dick Street, Room 114, Fayetteville.

Governor _____ also urged all residents to conserve resources, particularly fuel. He said he could not predict the duration of the evacuation, but he assured everyone it would end as soon as possible.

All residents of _____ County should remain tuned to _____ for the duration of the crisis for current information.

ATTACHMENT 2-A-3
SAMPLE NEWS RELEASE
CUMBERLAND COUNTY
INFORMATION FOR "STAY PUTS"
Shelter in Place

Contact: _____

Phone: _____

Date: _____

Note: This should not be broadcast until after the evacuation phase is complete.

Those persons who have not relocated from the _____ hazard area are strongly urged to do so immediately. Preparations have been made to provide housing, food and other necessities in the reception areas.

Keep in mind that normal services in the hazard area will be severely curtailed. Essential supplies and services will be redirected to the host areas in

If you decide not to relocate to the host areas, there is certain important information that you will need to know. Life-sustaining services will be maintained at only a few locations within the hazard area. Their primary purpose is to allow key personnel that are operating within the area to maintain essentials. If you need assistance, go to one of these areas _____.

ATTACHMENT 2-A-4
SAMPLE NEWS RELEASE
CUMBERLAND COUNTY
DISABLED AND ELDERLY

Contact: _____

Phone: _____

Date: _____

Many disabled and elderly persons who live at home may require assistance in order to relocate to the reception area. If neighbors or nearby relatives are unable to assist, please contact Cumberland County Department of Social Services, phone 323-1540.

ATTACHMENT 2-A-5
SAMPLE NEWS RELEASE
CUMBERLAND COUNTY

WHY ARE RELOCATEES COMING FROM _____ ?

Contact: _____

Phone: _____

Date: _____

The County will be hosting approximately _____ hazard area relocatees from the _____ area of _____ if crisis evacuation is ordered.

The lower risk or host areas near _____ hazard areas will be hosting the key workers and their families. These "key workers" remain near the hazard area - but out of the "direct effects" of nuclear weapons - to continue essential services - e.g. police, fire, rescue, phone service, utilities and certain key industries. Key workers and their families and other hazard area residents have utilize all available spaces in the host area near the _____ area of _____. The remaining individuals and families, known as the general public, need protection from fallout that might occur.

This County and other North Carolina Counties were selected after extensive survey by federal engineers determined that a sufficient number of spaces exist in public buildings to accommodate the hazard area relocatees. Their accommodations will be very basic with the most attention given to a place for sleeping and eating - not comfort.

Expected stay time for the relocatees will be from one to two weeks. No persons will be assigned, unless requested by residents, to any private residence in the County for housing or meals.

ATTACHMENT 2-A-6
SAMPLE NEWS RELEASE
CUMBERLAND COUNTY
EVACUATION PLAN

Contact: _____

Phone: _____

Date: _____

The Governor has directed State and Local Emergency Services Personnel, County and City Officials and allied support services to begin preparation for possible implementation of the State and County Evacuation Plans.

The Governor's action was taken due to current tensions and advice by Federal Officials of the distinct possibility of an enemy attack on this nation.

Parts of _____, _____ Counties, have been designated as host areas for approximately _____ relocatees from the Cumberland County hazard area. Host areas are considered to be safe from the direct effects of a nuclear weapon - heat and blast waves.

The Cumberland County Evacuation Plan spells out the details for moving all residents out of their hazard area into the various host areas for a period of seven to fourteen days. This plan also provides for a phased and orderly movement of people to be completed within three days. Movement of the hazard area residents would be initiated only by the Governor of North Carolina and only at the request of the President. Extensive planning has been completed by County Officials to prepare for this possibility.

ATTACHMENT 2-A-7
SAMPLE NEWS RELEASE
CUMBERLAND COUNTY
SEVERE INTERNATIONAL CRISIS

Contact:_____

Phone:_____

Date:_____

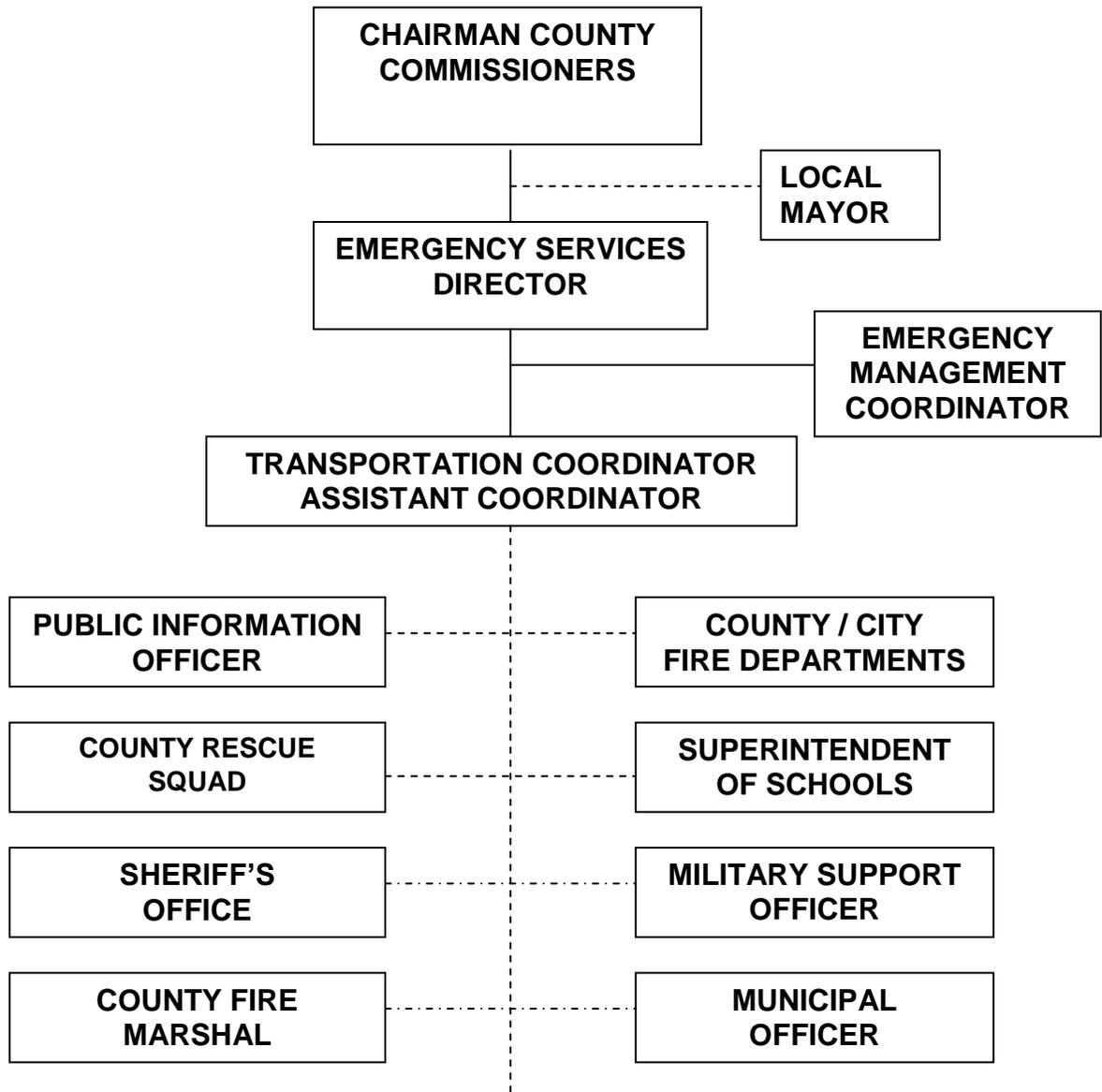
Because of the severe international crisis that now exists between the United States and our adversaries, a nuclear attack upon our country is a very real possibility. Should a nuclear attack occur, our country might experience extensive radioactive fallout-even though the nearest nuclear explosion may be several hundred miles away.

It is emphasized that should this occur, you will need to take calm, orderly, but immediate protective action. You should receive a newspaper copy of the In-Place Shelter Plan for your County. This publication lists the Shelter Cluster Headquarters available and advises you where to go and what to do. Determine now what protective measures you will take.

Remember, home basements usually can provide adequate fallout shelter if certain actions are taken to improve the protection your basement affords. How to improve your basement protection is also explained in the In-Place Shelter Plan for those that might prefer a home basement to a public shelter. As a safety measure, do as much as you can now.

If you do not have a home basement, determine now to what Shelter Cluster Headquarters you are assigned, and what route you will take to reach the Shelter Cluster Headquarters.

APPENDIX 3-1
(EVACUATION AND REENTRY)
ORGANIZATIONAL STRUCTURE

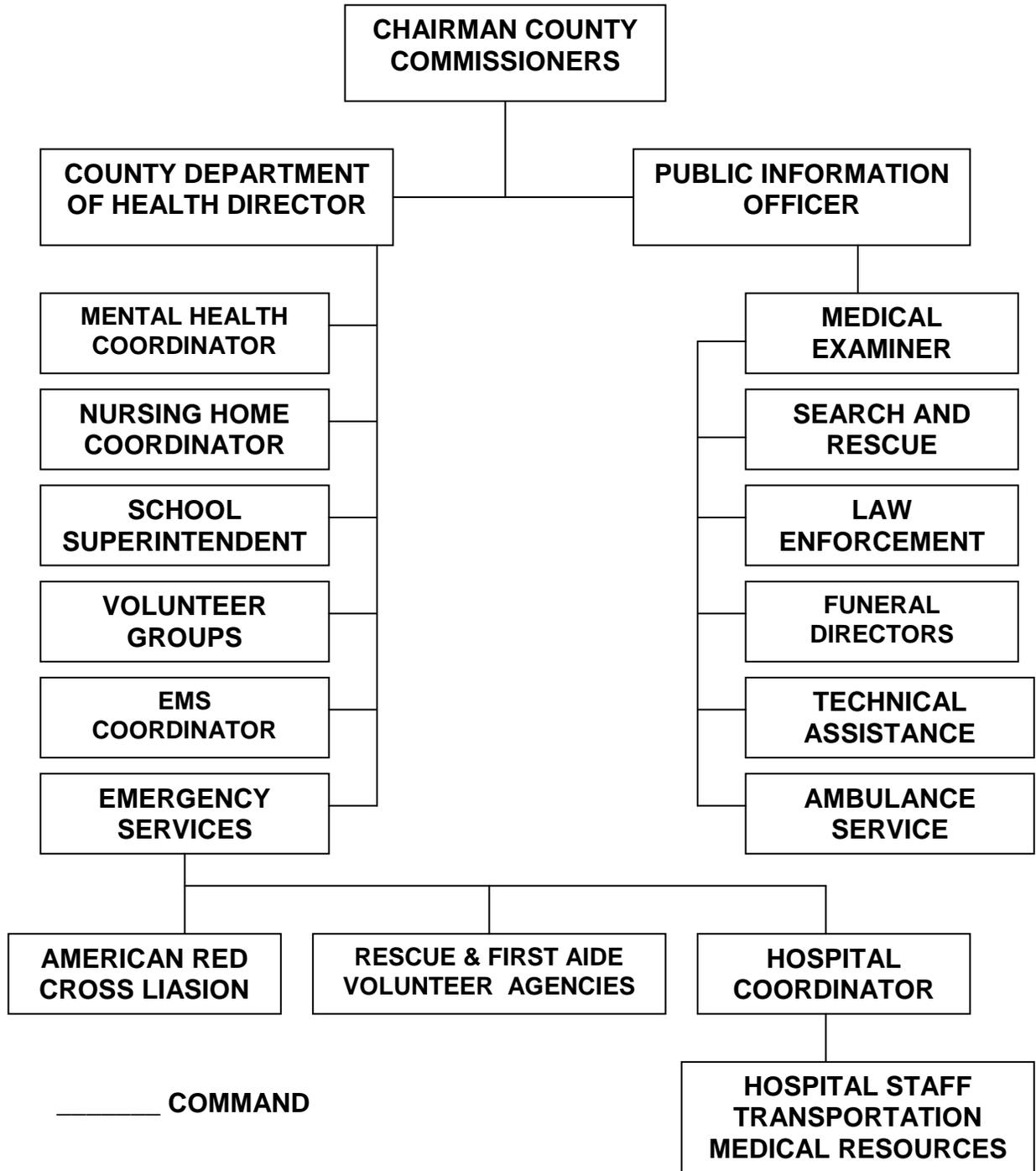


————— **Command**
 - - - - - **Coordinator**

APPENDIX 4-1

(EMERGENCY AND PUBLIC HEALTH SERVICES)

ORGANIZATIONAL STRUCTURE

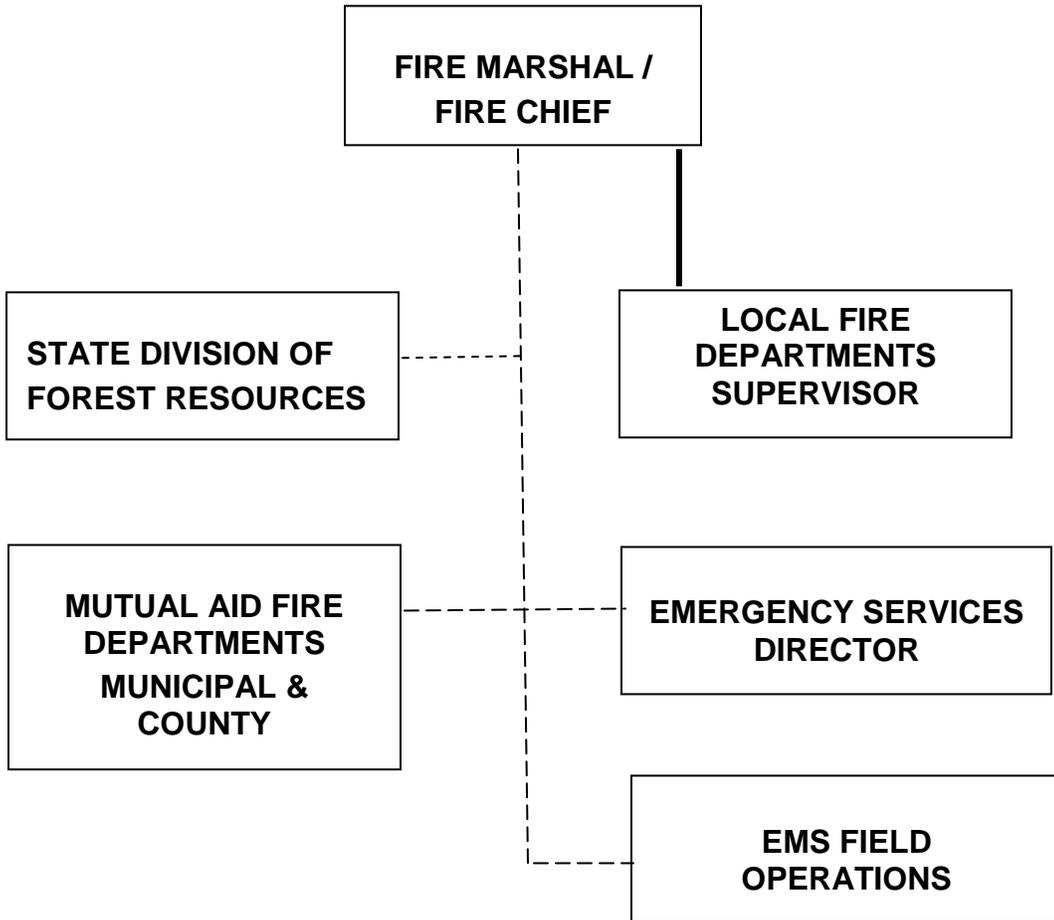


_____ COMMAND

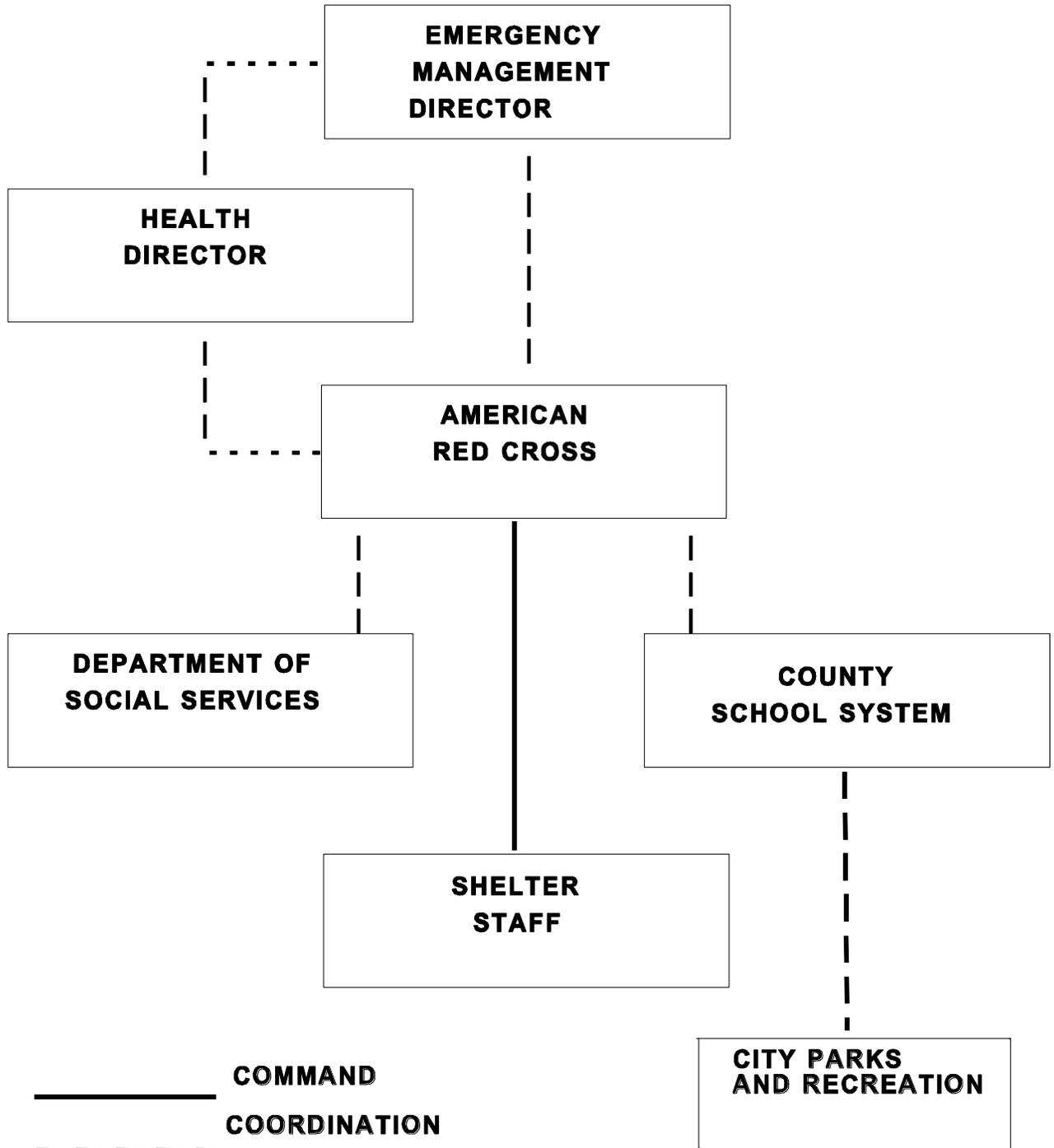
APPENDIX 5-1

(FIRE AND RESCUE)

ORGANIZATIONAL STRUCTURE



APPENDIX 6-1
(SHELTER AND MASS CARE)
ORGANIZATIONAL STRUCTURE



APPENDIX 7-1

(HAZARDOUS MATERIALS)

**CITY OF FAYETTEVILLE FIRE DEPARTMENT
STANDARD OPERATING PROCEDURE
HAZARDOUS MATERIALS, NUMBER 402
EFFECTIVE DATE: 8/1/91
APPROVED BY JOHN P. SMITH, CITY MANAGER**

1.0 PURPOSE

This plan provides a basic philosophy and strategic plan for Hazardous Materials situations. All Fayetteville Fire Department Standard Operating Procedures, unless superseded by a specific part of this plan, remain in effect for Hazardous Materials incidents.

Hazardous Materials incidents encompass a wide variety of potential situations including fires, spills, transportation accidents, chemical reactions, explosions and similar events. Hazards involved may include toxicity, flammability, radiological hazards, corrosives, explosives, health hazards, chemical reactions and combinations of factors. This plan provides a general framework for handling a Hazardous Materials incident, but does not address the specific tactics or control measures for particular incidents.

Every field incident presents the potential for exposure to Hazardous Materials and the products of combustion of an ordinary fire may present severe hazards to personnel safety.

This procedure is specifically applicable to known Hazardous Materials incidents, but it does not reduce the need for appropriate safety precautions at every incident. The use of proper turnouts and SCBA whenever appropriate and the utilization of all Standard Operating Procedures on a continuing basis is the starting point for this plan.

2.0 SCOPE

This policy shall apply to all Fayetteville Fire Department personnel who respond to any hazardous materials incident.

3.0 PROCEDURE

3.1 Alarm

Dispatchers shall attempt to obtain any and all information from the person reporting a Hazardous Materials incident. The information shall, if possible, include material name and / or type, amount and size of container(s), problem (leak, spill, fire, etc.) and dangerous property of the materials. The dispatcher shall stay on the telephone with the caller to gain additional information after giving the call to the dispatcher.

3.1.2 Any additional information shall be relayed to responding units after dispatch.

3.1.3 If the call comes from a person with particular knowledge of the hazardous situation, have that person meet and direct the arriving units.

3.1.4 Dispatcher shall obtain the wind speed and direction from the Airport Tower and announce them to responding units.

3.1.5 The Dispatcher should attempt to anticipate the needs of any particular situation and be prepared for them.

3.2 First Arriving Unit

3.2.1 The first arriving officer shall establish Command and begin a size-up. The first unit must consciously avoid committing itself to a dangerous situation. When approaching, slow down or stop to assess any visible activity taking place. Evaluate effects of wind, topography, and location of the situation.

3.2.2 The Incident Commander shall advise ALL OTHER UNITS to stage until instructed to take specific action. Units must stage in a safe location, taking into account wind, spill flow, explosion potential and similar factors in any situation.

3.3 Size-up

3.3.1 The Incident Commander shall make a careful size-up before deciding on a commitment. It may be necessary to take immediate action to make a rescue or evacuate an area, but this shall be done with an awareness of the risk to Fire Department personnel, and taking advantage of available protective equipment.

3.3.2 The objective of the size-up is to identify the nature and severity of the immediate problem and gather sufficient information to formulate a valid action plan. A Hazardous Materials incident requires a more cautious and deliberate size-up than most fire situations.

3.3.3 Avoid premature commitment of companies and personnel to potentially hazardous locations. Proceed with caution in evaluating risks before formulating a plan and keep uncommitted companies at a safe distance.

3.3.4 Identify a hazardous area based on potential danger, taking into account materials involved, time of day, wind and weather conditions, location of the incident and degree of risk to unprotected personnel. Take immediate action to evacuate and / or rescue persons in critical danger if possible, providing for safety of rescuers. (See Evacuation).

3.3.5 The major problem in most cases is to identify the type of materials involved in a situation, and the hazards presented, before formulating a plan of action. Look for labels, markers, and shipping papers, refer to pre-fire plans, and ask personnel at the scene (plant management, responsible party, truck drivers, fire department specialist). Utilize reference materials carried on apparatus and Hazmat units.

3.4 Action Plan

3.4.1 Based on the initial size-up and any information available, Command shall formulate an action plan to deal with the situation.

3.4.1.1 Most Hazardous Materials are intended to be maintained in a safe condition for handling and use through confinement in a container or protective system. The emergency is usually related to the material escaping from the protective container or system and creating a hazard on the exterior. The strategic plan must include a method to get the hazardous material back into

a safe container, neutralize it, or allow it to dissipate safely. Any offensive action shall be accomplished by the Hazardous Materials Team only.

- 3.4.1.2 The specific action plan must identify the method of hazard control and identify the resources available and / or required to accomplish this goal. It may be necessary to select one resource or to adopt a "holding action" to wait for needed equipment or supplies provided by the Hazardous Materials Team.

The Hazardous Materials Response Team shall be assigned to any situation involving direct contact with Hazardous Materials or any offensive actions involving hazardous materials.

3.5 The Action Plan Must Provide For:

- 3.5.1 Safety of citizens
- 3.5.2 Safety of Firefighters
- 3.5.3 Evacuation of endangered area, if necessary
- 3.5.4 Control of situation
- 3.5.5 Stabilization of Hazardous Materials

- 3.6 Avoid committing personnel and equipment prematurely or "experimenting" with techniques and tactics. Many times it is necessary to evacuate and wait for special equipment or expert help.

3.7 Control of Hazardous Area

- 3.7.1 A hazardous material incident has two zones associated with the scene, similar to a fire. There are the HAZARD ZONE (warm and hot zones) and the EVACUATION ZONE (cold zone).

- 3.7.2 Hazard Zone

- 3.7.2.1 The Hazard Zone is the area in which personnel are potentially in immediate danger from the hazardous condition. This is established by Command and controlled by the Fire Department. Access to this area shall be rigidly controlled and only personnel with proper protective equipment and an assigned activity will enter. All companies shall remain intact in designated staging areas until assigned. Haz-Mat personnel shall be assigned to monitor entry and exit of all personnel from the Hazard Zone. The Hazard Zone shall be geographically described to all responding units, if possible. (A Safety Officer shall be established to control access to the Hazard Zone and maintain an awareness of which personnel are working in the area.)

- 3.7.2.2 Responsibility for control of personnel in this zone includes not only Fire Department personnel, but any others who may wish to enter the Hazard Zone (Police, Press, Employees, Tow Truck Drivers, Ambulance Personnel, etc.). Command is responsible for everyone's safety.

- 3.7.3 Evacuation Zone

- 3.7.3.1 The Evacuation Zone is the larger area surrounding the Hazard Zone in which a lesser degree of risk to personnel exists. All civilians shall be removed from this area. The limits of this zone will be enforced by the Police Department based on distances and directions established in consultation with Command and the Haz Mat Team. The area to be evacuated depends

on the nature and amount of the material and type of risk it presents to unprotected personnel (toxic, explosive, etc.).

3.7.3.2 In all cases, the responsibility for safety of all potentially endangered citizens rests with Command.

3.8 Use of Non-Fire Department Personnel

3.8.1 In some cases, it may be advantageous to use non-Fire Department personnel to evaluate hazards and perform certain functions for which they would have particular experience or ability. When such personnel are outfitted with breathing apparatus, chemical suits, etc., they must be made aware of the functions, limitations and safety precautions necessary in their use. Fire Department Haz Mat personnel with the necessary protective equipment must closely monitor and accompany such personnel for safety.



Cumberland
County *North
Carolina*

Annex A Strategic
National Stockpile
Plan to Emergency
Operations Plan

28 April 2008

Cumberland County Change to Publication

Change Applies to: New Manual Revision Change

REQUESTER INFORMATION:

NAME: _____ PHONE# _____

DEPARTMENT: _____ TITLE: _____

Title: _____

CHANGES AND REVISIONS:

Purpose: _____

Reason: _____

(Include as much information as possible, including the reason for proposed revision. Indicate page, and paragraph number. Forward a redlined paper copy if necessary).

Continue on reverse side or add pages as needed

Authority	Name	Signature	Position	Date

Glossary of Acronyms

CCDPH- Cumberland County Department of Public Health

CDC- Center for Disease Control and Prevention

DEA- Drug Enforcement Administration

EMA- Emergency Management Agency

EMS- Emergency Medical Services

ECC – Emergency Command Center

EOC- Emergency Operations Center

ICS- Incident Command System

JIC- Joint Information Center

JOC- Joint Operations Center

NIMS- National Incident Management System

PIO- Public Information Officer

POC- Point of Contact

POD- Point of Dispensing

PPE- Personal Protective Equipment

RSS- Receipt, Stage, and Storage Site

SNS- Strategic National Stockpile

TARU- Technical Assistance Response Unit

VMI- Vender Managed Inventories

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I. DEVELOPING A SNS PLAN

A. Overview

Cumberland County Department of Public Health (CCDPH) coordinates County public health and medical assistance in State declared emergencies and disasters through Public Health Preparedness and Response (PHP&R) and the Public Health Coordinating Center (PHCC) as described in the North Carolina Public Health (NCPH) Strategic National Stockpile (SNS) Plan. Existing departmental command system structures should be applied to receipt, distribution, and dispensing of Cumberland County SNS assets. These include:

1. The Cumberland County Emergency Operations Plan (EOP) for Public Health Emergencies, and;
2. The Public Health Regional Surveillance Team (PHRST) System.

B. Planning

1. The CCDPH Preparedness Coordinator (PC) oversees all planning activities and will annually review and update the Cumberland County SNS Plan. Annual Review form can be found in *Attachment #17*.
2. The CCDPH negotiates Mutual-Aid Agreements (MAA) and Memoranda of Agreement (MOA) with other agencies, governments, jurisdictions, and nongovernmental organizations that support the Plan and would respond during public health and medical emergencies.
3. The CCDPH defines and quantifies personnel essential to an SNS response and provides protection and a method for early prophylaxis for these responders. Definition and quantification of personnel essential to an SNS response is reviewed annually.
4. The Cumberland County PC and the Cumberland County Public Information Officer (PIO) review public information templates annually, and as deemed appropriate, to ensure inclusion of most recent information and recommendations.
5. The CCDPH establishes methods of communications and ensures redundancy. Use of Pack Radios and other communications methods will be coordinated with the Communications Officer of PHP&R.
6. The Cumberland County Attorney appraises legal issues that can affect planning, operations, healthcare staffing, and patient care. This will be coordinated with NCPH legal team.

7. The plan will be exercised as prescribed in PHP&R Agreement Addenda. Design of public health preparedness and response exercises will:
 - a) Be constructed so that skills utilized and tested in all exercises will further preparedness efforts in the receipt, distribution, and dispensing of SNS assets;
 - b) Assist healthcare facilities test healthcare response issues at the local level;
 - c) Build partnerships among healthcare and public health officials, community leaders, and emergency response workers.

C. Implementation

1. Through internal or external sources, the CCDPH is notified of a credible threat, a potential emerging emergency, or actual event of significance.
2. The PC will consult with the CCDPH, and other local response partners for a recommendation for possible transition from normal operations to a coordinated agency emergency response operation by Cumberland County Emergency Management (CCEM) and community, regional, and/or state response partners.
3. CCDPH will name an Incident Commander as well as a liaison and serve as the focal point for coordinating CCDPH response activities with CCEM, the Cumberland County Manager, and elected officials.
4. The Incident Commander shall provide status updates of activities to the EOC, utilizing the Cumberland County ICS structure.
5. As deemed appropriate, the CCDPH Incident Commander may expand the PH ICS structure for the purpose of coordinating activities.
6. The SNS Coordinator, within the Operations Section of the Public Health Incident Command System will convene with the Planning/Intelligence Section Chief and the Safety Officer and meet with partners and stakeholders to review the
 - a) CCDPH SNS Plan;
 - b) Policy for First Responder Prophylaxis; and,
 - c) Appropriate clinical preparedness and response plans for the suspected agent precipitating the public health and medical emergency.
7. The Field Response Branch Director will call for inventory of supplies and essential medications throughout the County.

8. An alert will be issued to public health and medical entities using the North Carolina Health Alert Network (HAN). This is after consultation with NCPH.
9. The Cumberland County Communications chief will assess status of tactical communications.
10. The CCDPH PC will notify PHRST 3 and NCPH departments and ask them to increase local surveillance and increase case detection.
11. The CCDPH will implement its risk communications plan and link public information functions with federal and state counterparts in preparedness mode.

D. Deployment

1. The CCDPH will upgrade activities to emergency response.
2. The Incident Commander will convene with the CCDPH and County Manager, or his designee, to recommend request for deployment of SNS assets; key County contacts will be notified that request for SNS assets has been made.
3. As deemed appropriate, the PHCC Incident Commander may expand the ICS structure for the purpose of coordinating activities assigned by the Incident Commander.
4. The SNS Coordinator will convene with the Planning/Intelligence Section Chief and the Safety Officer and meet with partners and stakeholders to review and fully implement:
 - a) CCDPH SNS Plan;
 - b) Policy for First Responder Prophylaxis; and,
 - c) Appropriate clinical preparedness and response plans for the suspected agent precipitating the public health and medical emergency.
5. When Division of Strategic National Stockpile (DSNS) assistance is requested and approved, the Incident Commander and the SNS Coordinator will communicate with the NCPH SNS Coordinator and/or SNS Coordination Center to exchange information concerning place and time of arrival of the SNS assets.
6. The Incident Commander and the SNS Coordinator will answer inquiries from the TARU concerning the situation and the county's anticipated response.
7. CCDPH Logistics Section will make arrangements to provide transportation vehicles and security escorts for the TARU from the state RSS to the county LRS and transportation of Federal liaison officers (LNOs) to their work location(s).

8. TARU Liaison support will be co-located with state assets at the Receiving, Staging, and Storage Site.
9. CCDPH Logistics Section will request NCEM, through Cumberland County Unified Command, to activate law enforcement and security agencies to establish operations to secure all aspects of receiving, distribution, and dispensing SNS assets.
10. The CCDPH Operations Section Chief will request the LRS Coordinator to arrange for operations of the LRS site.
 - a) The LRS Coordinator will activate and initiate call-down of LRS staff;
 - b) The LRS Coordinator will contact the designated LRS facility and request preparation for receipt of SNS assets;
 - c) The LRS Coordinator will report operational information routinely to the SNS Coordinator of the CCDPH Operations section.
11. The Operations Section Chief will request assistance if required through the PHP&R's and POD Operations Managers to arrange for operations of Points of Distribution (PODs).
 - a) POD Managers will activate and initiate call-down of POD staff;
 - b) POD Managers will coordinate activities with neighboring jurisdictions, PHRST 3, and with the SNS Coordinator.
 - c) POD Managers will report POD operational information routinely to the SNS Coordinator of the CCDPH.
12. The CCDPH and the Cumberland County EOC will coordinate response with neighboring counties utilizing PHRST 3 and NCPH.
13. The PHCC Public Information Officer (PIO) in conjunction with the County PIO will initiate communication with local, regional, and state partners as directed by the County Incident Commander.
14. The Cumberland County EOC will notify key county government officials and legislators of the need for additional monetary resources (if not already available).
15. The Logistics Section Chief will notify key officials and NCEM of need for additional resources, if necessary.
16. The Finance/Administration Section will document expenses of a SNS response.

E. Recovery

1. The Incident Commander will convene with appropriate stakeholders to assess criteria for potential cessation of enhanced public health support and generate a demobilization plan to describe staged withdrawal of enhanced public health support
2. The Operations Section Chief will arrange for provision of mental health counseling to all necessary staff members.
3. The Planning/Intelligence Section will submit an After Action Report (AAR) and revise the plan as appropriate.

II. MANAGEMENT OF SNS & COMMAND AND CONTROL

A. Management

1. Environmental

SNS materiel must remain at appropriate temperatures during staging, storage, and transportation to ensure its potency. It is essential to keep most SNS materiel at controlled room temperatures, between 58°F and 86°F. This means storage sites, dispensing sites, treatment centers, and distribution vehicles must all be able to maintain this temperature range during very hot or very cold periods. Materiel should not be left outside during these periods. Currently, no items in the 12-hour Push Packages require refrigeration.

2. Controlled Substances

- a) A 12-hour Push Package currently includes three different controlled substances: morphine, diazepam, and midazolam. The Drug Enforcement Administration (DEA) classifies substances by their potential for abuse. Accordingly, morphine is classified as Schedule C-II, while diazepam and midazolam are classified as Schedule C-IV.
- b) The DEA regulates the storage and transfer in accordance with Title 21 of the U.S. Code of Federal Regulations. The DEA subsequently authorizes individuals (registrants) to handle specific classes of controlled substances. The registrants must ensure that they maintain a detailed chain-of-custody record of all transfers. For C-II substances, that record must include a DEA Form 22 that the person who receives the materiel initiates to request the transfer.
- c) Controlled substances provided by the SNS Program in North Carolina will be sent to hospitals. Hospitals must have registrants identified that will be able to receive and sign for any controlled substance that they request and subsequently receive. The DEA recognizes that during an emergency, availability of the identified DEA registrant may be limited. Also, extreme circumstances may dictate that controlled substances be delivered to the local health department. If the identified DEA registrant is unavailable to accept receipt at the time of delivery, the DEA will still allow delivery of the controlled substance to the organization, but the registrant must eventually provide signed paperwork for each transfer.

B. Responsibilities

1. The local SNS Coordinator will coordinate SNS materiel management. The SNS Coordinator for Cumberland County is the Nursing Supervisor I. If the Nursing Supervisor I is unable to function as the SNS Coordinator, the Nursing Supervisor II will

take their place as back-up. Point-of-contact information for the Local SNS Coordinator is found in *Attachment #2*.

2. SNS assets will be received for Cumberland County by the Pharmacist. If the Pharmacist cannot receive the SNS materiel, the Immunizations PHN II will function as the back-up for receipt. Point-of-contact information for the LRS Manager is found in *Attachment #2*.
3. SNS materiel will be stored at Crown Complex this facility meets all CDC/NCDPH requirements for storage of SNS materiel. These requirements are provided in *Attachment #5*. Map and directions to the SNS storage site are located in *Attachment #5*. Medications requiring environmental controls will be stored in accordance with manufacturer's specifications. All medications will be stored in a secure container. Any transportation of SNS materiel, once it is received by Cumberland County, will be conducted by Transportation Coordinator. 24 Hour Contact Information is found in *Attachment #2*.
4. For the LRS and Site Safety Officer for Cumberland County 24 Hour Contact information can be found in *Attachment #2*. The Site Safety Officer will be responsible for coordination of security at the storage site, PODs and subsequent transport of SNS materiel throughout Cumberland County. The job action sheet for the LRS and Site Safety Officer are in *Attachment #10*.

C. Command and Control:

1. Cumberland County uses the Incident Command System (ICS) in accordance with National Incident Management System (NIMS) requirements. A copy of the incident command system for SNS management is found in *Attachment #3*. The emergency call-down roster for Cumberland County is located in *Attachment #4*.
2. SNS organizational positions and their back-up 24 hour contact information can be found in *Attachment #2*. Job action sheets for the command staff are found in *Attachment #10*.

III. REQUESTING SNS

A. Overview

This section describes

1. The process for requesting the Strategic National Stockpile to be deployed from the Centers for Disease Control and Prevention.
2. The processes for requesting re-supply of SNS materials from the CDC.

B. Responsibilities

1. The NCEMA Director is responsible for the overall coordination of response and recovery programs through implementation of the NCEOP as directed by the Governor. The NCEMA Director, or designee(s), also maintains a constant liaison between the Federal government, state agencies, disaster relief organizations, and other states' disaster agencies.
 - a) The Governor, or his designee, has the authority to request the SNS.
 - b) The State Health Officer, or his designee, is responsible for advising NCEMA on SNS request.
 - c) The State Health Officer, or his designee, State Epidemiologist, State Pharmacist, or Medical Director for the Office of Health Protection is responsible for acceptance of the SNS from the CDC.
 - d) The North Carolina Department of Health is designated by the Governor as the lead agency for coordination of the SNS for the State of North Carolina.
2. The EMA Director is responsible for the overall coordination of response and recovery programs through implementation of the Cumberland County EOP as directed by the County Manager. The EMA Director, or designee(s), also maintains a constant liaison between the Federal government, state agencies, disaster relief organizations, and other states' disaster agencies
 - a) County Manager has the authority to request the SNS from the State
 - b) The Director of the Emergency Management Agency (EMA) is the County Manager designated representative who will request the SNS (the Deputy Director of EMA is the alternate for the Director of EMA)
 - c) The Health Director or Medical Director for the Health Department is responsible for making recommendations to EMA on whether to request the SNS (Medical Director is the back-up to the Health Director)
 - d) Within the Department of Health, the Senior Deputy Director, Medical Affairs will be the primary designee for the SNS

3. The 24 – hour contact information for these officials located in **Attachment #2**.

C. Procedures for Initial Request

1. The process for requesting deployment of SNS assets will begin with the identification by Cumberland County health officials of a possible or impending major public health and medical emergency. Flow Chart for Request Process located in **Attachment #8**.
2. County Health Officials will Inform the County Manager and EMA of Potential for needing the SNS
3. County Manager and EMA will decide to inform the State or not
4. EMA will convene with the NCEMA Director the following:
 - a) A verifiable justification for requesting all or part of the SNS Package such as:
 - Overt release of a chemical or biological agent.
 - Claim of release by intelligence or law enforcement.
 - Indication from intelligence or law enforcement of a likely attack.
 - Clinical or epidemiological indications, such as:
 - Large numbers of ill persons with similar disease or syndromes.
 - Large number of unexplained disease, syndromes, or deaths.
 - Unusual illness in a population.
 - Higher than normal morbidity and mortality from a common disease or syndrome.
 - Failure of a common disease to respond to usual therapy.
 - Single case of disease from an uncommon agent (e.g. smallpox).
 - Multiple unusual or unexplained disease entities in the same patient.
 - Disease with unusual geographic or seasonal distribution.
 - Multiple atypical presentations of disease agents.
 - Similar genetic type in agents isolated from temporally or spatially distinct sources.
 - Unusual, genetically engineered, or antiquated strain of agent.
 - Endemic disease or unexplained increase in incidence.
 - Simultaneous cluster of similar illness in non-contiguous areas.
 - Atypical aerosol, food, water transmission.
 - Three people presenting the same symptoms near the same time.
 - Deaths or illness among animals that precedes or accompanies human death.
 - Illness in people not exposed to common vent systems.
 - Laboratory results.
 - Unexplainable increase in emergency medical service requests.

- b) How many actual and potential casualties are there?
 - c) Have casualties overwhelmed the local system capacity to manage the event?
 - d) What is the hospitals capacity available, number and type of bed space, intensive care unit, ventilators, sufficient staff, etc?
 - e) What local/mutual aid recourses are available, including pharmaceutical, oxygen, alternative care, etc?
 - f) Is there a local plan in place for receiving, distribution, and dispensing the SNS?
 - g) Is there justification for requesting the SNS package? Is there a need for the entire package or a VMI?
5. NCEMA will convene with the Office of the Governor and review:
- a) Table describing events that can provide justification for SNS asset deployment;
 - b) The algorithm for requesting SNS assets;
 - c) Contact number for the CDC Director's Emergency Operations Center; and
 - d) Formulary of drugs and medical supplies that may be requested from DSNS.
6. The Governor, or his designee, will request the deployment of SNS assets by calling the NCEOC. Numbers Located in **Attachment #2**.
7. Information to be provided when requesting SNS assets:
- a) A clear, concise description of the situation;
 - b) Any results of specimen testing;
 - c) Information on the decisions already made regarding the response to the event:
 - Target population for prophylaxis;
 - Quarantine measures;
 - Facilities to be used throughout the response process;
 - Information on the availability of state and local response assets;
 - A description of the SNS assets needed to support a response to the situation; and
 - Any evidence of terrorism or suspected terrorism.
8. The CDC Director will initiate an immediate conference call to consult with the Director of Public Health and other federal, state, and local officials. The CDC Director and /or DHS will determine if the available information suggests that a biological or chemical event threatens the public health; and if the state has the capacity to appropriately respond.
9. Immediately upon conclusion of the request call, DSNS will call the state SNS Coordinator to get information DSNS needs to provide the most appropriate and effective DSNS response.
10. NCEMA will notify key state contacts that the Governor has requested SNS assets. NCEMA maintains 24-hour contact information for these officials. The NCEMA 24-hour

hotline number located in *Attachment #2*. The DSNS Coordination Center will inform the TARU and state authorities about asset arrival locations and times.

11. The NCEMA will provide the state's DSNS Program Services Consultant with a copy of the MDH Plan for Receiving, Distribution, and Dispensing SNS Assets.
12. The State Health Officer will activate the NCDH Plan for Distribution of Strategic National Stockpile Assets.
13. The CDC Director will order the deployment of the SNS to the North Carolina RSS site as directed by the State Health Officer.

D. Procedures for Requesting Re-supply of SNS Assets at County/POD Sites

1. The LRS Coordinator or Site Logistics Officer will generate daily reports of low stock.
 - a) The threshold for system notification of low stock is 25% of original quantity; or
 - b) Threshold may be manually determined within the EOC, as deemed most appropriate for the situation.
2. Low stock notifications will be communicated to the SNS Coordinator in the CCDPH PHCC who in turn will notify the Cumberland County EOC.
3. The EOC will notify the NCEMA. The NCEMA will determine the need to request additional assets. Requests will then be forwarded from the Cumberland County EMA to the NCEMA.

IV. TACTICAL COMMUNICATION

A. Overview:

1. Communications is an essential element in ensuring an effective emergency response. Real time positive communications is critical to ensure continual and timely flow of medications and supplies to various dispensing and treatment sites. Communications modes and frequencies currently integrate within NC and Cumberland County emergency communications plans. The SNS communications network will provide positive communications between the NC EOC, PHCC, Cumberland County EOC, LRS, and PODs.
2. This section involves technical aspects of communications, not to be confused with public information.

B. Communications:

1. The Communications Officer for CCDPH is the Computer Consultant. 24 hour contact information is found in *Attachment #2*. The job action sheet for the Communications Unit Leader is found in *Attachment #10*.
2. Cumberland County maintains an SNS call-down list of essential staff. This call-down list can be found in *Attachment #4*.
3. Cumberland County maintains communications networks and backup systems to support command and control. The systems and frequencies in use at the local level are provided in *Attachment #11*.
4. To ensure rapid repair of communication systems during a public health emergency, Cumberland County will use (insert agency name here). Cumberland County maintains a (maintenance contract, MOU, other) with (insert agency name here), this is kept on file at the health department.

C. Internal Communications:

1. Internal communication systems that will be used on-site at a POD include; Land Line, cell phones, radios, signage, and runners)
2. Two-way radios and/or cell phones shall be issued to each command officer when available at the beginning of each shift and collected at the end of the shift. The POD Manager or their designee will announce the radio channel to be used at the beginning of each shift.

3. Radio messages will be short, concise and begin with a sector identifier (ex. Greeting to Dispensing). Radios/cell phones shall be kept charged when not in use. Technical problems encountered with radios and cell phones should be reported to the Logistics Section Chief. It should be kept in mind that radio and cell phone messages can be monitored by persons not involved in the response effort. (e.g. the media).
4. In the absence of radios or cell phones, face-to-face communication shall be used. Voice amplification systems (ex. bullhorn, in-house public address system) should appropriately be used if available.

D. External Communications:

1. CCDPD communicates with the state and other local health departments through the Public Health Information Exchange (PHIX), WebEOC, and HAN. In the event of a public health emergency, Cumberland County will maintain communications with the state through WebEOC.
2. As soon as possible, radio/phone/fax and Internet connections will be established between the POD and the following:
 - a) LRS
 - b) County EOC
 - c) PHCC
 - d) 9-1-1 Center
 - e) Joint Operations Center (if operational)
 - f) Joint Information Center (if operational)
 - g) Local hospitals
 - h) Alternative care facilities (if being used)
 - i) Other PODs
3. Amateur radio operators can be used as an alternative or in addition to phones and radios if available.
4. After an emergency has been declared, state and local Joint Information Centers (JIC) will assume primary responsibility for all media relations activities. When this occurs, a representative of the local Health Department may be called upon to serve as JIC liaison. Responsibilities of the JIC Liaison are provided in detail within the Risk Communications Standard Operating Guide (SOG).

E. Responsible personnel

The Cumberland County Information Technology and Communications Unit Leader (ITAC) is responsible for

1. The overall communications among key personnel, the LRS site, POD sites, as well as other involved agencies throughout the incident.

2. Ensuring that staffs at the LRS, PODs, PHCC, various command centers, and the vehicle operators are able to communicate with each other. These responsibilities also include equipment maintenance and repair.
3. Alerting SNS communications staff of the emergency and recalling them to their designated sites.

F. Communications methods

1. The primary means of communication will be the existing phone lines at the LRS and the dispensing sites. All sites will be equipped with 800 MHz radios and Cell phones for a backup means of communications. Internet connections and fax machines at the sites may also be used.
2. The main communications methods are listed below:
 - a) **LRS**
 - Existing phone/fax lines
 - County cell phones, SAT phones, and radios
 - b) **PODs**
 - Existing phone/fax lines
 - MDH-provided cell phones, SAT phones, and radios
 - c) **Command centers (NCDH, NCEMA)**
 - Existing phone/fax lines
 - Agency-provided cell phones, SAT phones, and radios
 - d) **Security**
 - Radios, cell phones, SAT phones provided by agency carrying out this function
 - e) **Transportation**
 - Radios provided by agency carrying out this function
3. Key personnel at CCDPH are able to access the Government Emergency Telephone Service (GETS), which routes calls through special emergency circuits when the phone system is overwhelmed. All CCDPD emergency response personnel have cellular phones. All vehicles will be equipped with 800 MHz radios. Further alternate sources of

communications will be developed and will include volunteer HAM radio operators, runners, and television.

4. Communications with hospitals will occur through existing phones lines. The Hospital Pack Radio System will serve as a backup method of communicating with hospitals.

G. Communications staff

In addition to the CCDPH Agency ITAC, the LRS site and each POD will have a designated communications person. These persons will be responsible for communications equipment maintenance and repair at their assigned site.

H. Staff notification and recall

The CCDPH Agency ITAC will be responsible for alerting staff of the emergency and recalling them to their designated sites.

I. Communications System

1. Information on the frequencies and call signs to be used by trucks and fixed sites is updated and maintained in the County EOC; these frequencies and call signs are utilized for this Plan. In addition, communications with helicopters will be through the _____ or other state emergency frequencies that by prior coordination will be given to the agency providing air assets to the incident.
2. An inspection and maintenance schedule will be established to routinely check the communications infrastructure and equipment. A schedule will also be established to routinely update communications information and exercise call lists.

V. PUBLIC INFORMATION

A. Overview:

1. The CCDPH must be able to successfully inform the public regarding the risks associated with potential outbreaks related to chemical or biologic agents of terrorism or pandemic influenza.
2. This plan is part of the overall CCDPH Response Plan for Bioterrorism and Emergency Response. CCDPH will work through the Cumberland County Emergency Management (CCEM) and in coordination with the County Manager's Office. This current plan will be exercised and updated as part of the CCDPH and Regional 3 Bioterrorism Preparedness and Response Program.

B. Notification procedures

The bioterrorism plan and the Cumberland County Public Health Crisis Communication Plan outline the notification procedures to be followed during a health emergency. According to these procedures, the CCDPH would notify CCEM, PHRST 3 and PHP&R in the event of an emergency. A call down list (including bioterrorism communications staff, the Local Health Director, CCDPH staff, PHRST 3, 24-7 hotline volunteer operators, and PHP&R) would then be activated. First, all CCDPH staff will be notified. All staff has cell phones for access. Other communications staff will be notified and placed on stand-by for support. The CCEM call down list of other agencies would be notified and other County personnel as needed. NC's Health Alert Network includes all NC LHD and over 6,000 hospitals, physicians, and emergency first responders.

C. Establishing the Joint Information Center (JIC)

1. In the event of a public health emergency, CCEM will establish an Emergency Operation Center (EOC) and the Joint Information Center (JIC) at EOC and/or at the event site. PIO's from all agencies participating in the response will come together at both locations to ensure the coordination and release of accurate and consistent information. Additional staff will mobilize and set up communications throughout the state.
2. The JIC will be staffed 24-hours per day and will be in continuous communication with the, PHCC, PHP&R, CCEOC, and SEOC through a dedicated phone line, cell phones, and radios.

D. Staff responsibilities

1. During an emergency, the CCDPH spokesperson (the Local Health Director or his designee) is the chief person responsible for communicating health risk information to the

public. The CCDPH personnel listed in this section will coordinate with the state and local officials, and through the JIC.

2. The CCDPH PIO will direct public information activities from the CC EOC and coordinate with the JIC, PHCC, LRS and POD sites. The CC PIO will report to the Incident Commander. The Incident Commander will coordinate with CCEM, and Cumberland County Government.
3. The PIO will be responsible for directing the following response activities:
 - a) Evaluating the need to communicate risk information to the public.
 - b) Issuing prepared and new press releases to the Local Health Director
 - c) Organizing and implementing press briefings and press conferences in coordination with LHIT.
 - d) Developing material templates that address agent and threat to health, location of dispensing sites, what to bring and what not to bring to the site, information on drug used for prophylaxis and importance of completing the regimen would be distributed to the public and posted on the Cumberland County web site
 - e) Work with CCEM in coordinating the activation of communications systems (e.g., Emergency Alert System) and press releases.
 - f) Monitoring media reports.
 - g) Initiating rumor control activities.
 - h) Activating the public call center and expanding capability of 24/7 hotline capacity.
 - i) Setting up a phone line for press inquiries.
4. Other staff members will be designated to serve as:
 - a) CCDPH PIO, PC, and PIC are responsible for developing press releases, amending prepared templates and other risk communication materials and coordinating their approval and release.
 - b) Call Center Specialists are responsible for updating the public information hotline and briefing the staff on recent news and information to be shared with the public.
 - Website will be responsible for inserting prepared bioterrorism and emergency preparedness pages and continually updating information.

- Local Health Information Team (LHIT) is responsible for distributing health risk information by means other than the media to the community (e.g., flyers, community meetings).

E. Health Education:

1. The Public Information Officer (PIO) for Cumberland County and PHCC and Public Information Coordinators (PIC) for each Point of Dispensing (POD) sites, 24 hour contact information are located in *Attachment #2*. The job action sheet for the PIO and PIC are located in *Attachment #10*.
2. The Local Health Department will coordinate regularly with the County PIO and Epidemiologic Services Section to ensure consistency in disease reporting, response, and health education throughout the state.
3. Reportable disease statutes require that CCDPH be notified of any reportable disease that is identified. Consistent Public Information and Health Education activities will be ensured through the use of WebEOC to transmit press releases and disease information. All reports and press releases will be approved through the County PIO before distribution.
4. In the event of a public health emergency, CCDPH will coordinate with the County Public Information Office. 24 hour contact information for County PIO is found in *Attachment #2*. After an emergency has been declared, state and local Joint Information Centers (JIC) will assume primary responsibility for all media relations activities. When this occurs, a representative of the Local Health Department (LHD) may be called upon to serve as JIC liaison.
5. Cumberland County Health Department will use CCDPH-supplied health education and public information materials during a public health emergency. These materials, as well as multilingual drug information handouts and incident-specific information, will be provided on the CCDPH Web site. Cumberland County will maintain a hard copy binder of disease information that is reviewed and updated annually by the Preparedness Coordinator.
6. CCDPH has developed a template information sheet for each POD site in Cumberland County. A copy of this information sheet can be found in *Attachment #12*. This information will be distributed at the local level through radio, television, and print media.
7. The media outlets available for Cumberland County are listed in *Attachment #12*.
8. The Public Information Officer will maintain contact with the local media to provide accurate and timely information to the public. Message maps, fact sheets, and disease information will be available on request. During operation of a POD, a media staging area will be designated to ensure efficient POD operations and protection of client

privacy. Cumberland County will limit media access to the POD during operations, and media personnel will be required to have a Public Health representative escort them through the POD site if they desire access.

9. Cumberland County uses easily seen, durable signs in English and Spanish to identify the following areas (list all applicable POD stations):
 - a) Parking
 - b) Entrance
 - c) Greeter
 - d) Registration
 - e) Screening Interviews
 - f) Counseling
 - g) Education
 - h) HELP/Questions
 - i) Staff Sign-in/Lounge
 - j) Bathrooms
 - k) Exit

Each area will be clearly identified and the direction of traffic flow marked. Where possible, illustrations will also appear on signage to reinforce the intended message.

10. The Special Needs Team Leader for POD sites will take care of education needs for non-English speaking, functionally illiterate, hearing impaired, and visually impaired patients. The Special Needs 24 hour contact information is found in *Attachment #2*.
11. The Patient Education Unit Leader for the POD sites 24 hour contact information for the Patient Education Team is found in *Attachment #2*.

F. Information verification and approval procedures

1. There are two types of communications materials: medical and non-medical. Medical material is intended to communicate medical and scientific information, such as disease risks and information on drug treatments. Non-medical material includes logistics and other information, such as where the public should report to receive prophylaxis or the hotline phone number.
2. Medical material
 - a) This material is being developed by the CCDPH in conjunction with Cumberland County medical professionals. This includes templates on bioterrorism agents and prophylaxis. Depending on the particular type of material and required expertise, assistance will be requested of PHRST 3, PHP&R, and NCPH.
 - b) Following development, the material will be turned over to the Cumberland County Health Director for approval, release and/or distribution.

NOTE: All template language should already be pre-approved so that in an event, the approval process is quick (adding agent, prophylaxis, dispensing site etc.).

3. Non-medical material

- a) This material will be developed by the CCDPH in coordination with and under the advisement of the appropriate and necessary County Staff. Most of this material will be prepared and fine tuned in the event of an emergency. Following development, this material it will be approved by the CCDPH Health Director and appropriate County Staff.

G. Risk communication materials and resources

1. The CCDPH is currently developing bioterrorism and emergency preparedness materials. As part of the SNS work plan, CCDPH will be preparing permanent materials specific to a variety of emergency scenarios.
2. The following additional resources will be used during a health emergency:
 - a) Web sites: sources of fact sheets and information on a variety of bioterrorism agents
 - b) CDC bioterrorism web site www.bt.cdc.gov
 - c) NCPH website www.ncpublichealth.com
 - d) JHU Center for Civilian Bio-defense www.hopkins-biodefense.org
 - e) Expert consultation with PHRST 3, PHP&R, and NCPH

H. Call center

The County PIO will activate the full emergency operational aspects of the 24/7 hotline. During a health emergency, additional lines will be added and emergency messages in three different languages will be available. Designated staff will be mobilized to establish a temporary call center at the JIC.

I. Policies and media lists

Cumberland County already maintains written policies and procedures and a list of statewide media contacts. This information will continue to be updated as necessary as this plan evolves and improves.

J. Debriefing and evaluation system

Key public health staff involved during an outbreak will perform an evaluation of emergency communications activities after the event has ended. The CCDPH PC will be responsible for coordinating after-action reports and lessons-learned documents.

VI. SECURITY

A. Situation:

A large scale public health event may produce casualties, widespread anxiety, fear, and possible panic. The arrival of Strategic National Stockpile (SNS) assets may be newsworthy, which may make it a focus point for individuals too impatient to wait for medications or treatment. As a result, the SNS assets require protection.

1. Purpose: There are three areas of focus that require elevated security measures;
 - a) Local Receiving, Staging, and Storing (LRS) operations,
 - b) Distribution, and
 - c) Point of Dispensing Operations (POD).
2. Objectives: In this section, the county will:
 - a) Define security requirements at the LRS
 - b) Define security requirements during distribution
 - c) Provide guidance for county partners in regards to security measures at POD's
3. LLRS operations and Distributing SNS assets are the responsibilities of Cumberland County. POD operations also lay in the local health jurisdictions area of responsibility. Security functions should prevent interruptions in SNS operations by controlling access to key facilities, facilitating vehicle movement if traffic congestion is problematic, controlling crowds waiting at a dispensing site, and protecting staff and volunteers from injury.

B. Mission:

1. Mission: Provide security for SNS assets as they are received from the state and distributed to LRS, and POD sites, as well as guidance for local partners.
2. Overall Mission: To receive critical medical assets from the state during an emergency, deliver those assets to Cumberland County LRS and POD sites and provide support to local efforts to dispense medical supplies to the general population.

C. Operating Procedures:

1. If a situation dictates the deployment of a 12-hour push package, U.S. Marshals will deploy with the Technical Advisory Response Unit (TARU). The marshals are responsible for protecting the TARU members and the SNS assets until they arrive at the State RSS. State accountability of the inventory begins when the State designee signs for control of the SNS material. This will typically take place at the RSS site. However, once the SNS assets physically arrive in Cumberland County, the county assumes responsibility for the security of Cumberland County Strategic National Stockpile Plan.
2. Security Support the material. When the material is driven into the county by the state, assistance will be needed from the Cumberland County Sheriff's Office (SO) to ensure the security of the material once it crosses the county line. If the SNS assets are flown into the county, Cumberland County Sheriff's Office assistance will be needed to safeguard the assets from the airport, to the designated LRS facility.
 - a) Security at the LRS: Cumberland County government will ensure that all LRS facilities have a security assessment performed annually by the Cumberland County Sheriff's Office, or another designated sworn Law Enforcement Office. Security assessments must be documented and can be found in **Attachment #5**. Security assessment will include a vulnerability assessment, review of interior and exterior physical security, access control points, security communications, and guidance on how to respond to security breaches. In addition to performing a security assessment, the SO will provide suggestions to mitigate any problems that are identified.
 - CCDPH Preparedness Coordinator will annually review its security plan with the SO.
 - All individuals entering the LRS will be required to enter and exit thru a single entrance. The LRS security lead is responsible for operating a Credentialing checkpoint at the door. Acceptable badges for entrance to the LRS or POD with an example can be found in **Attachment #2**.
 - At this checkpoint, all personnel entering the facility will be required to sign in on an Incident Check-In List which is an ICS Form 211. ICS form 211 can be found in **Attachment #14**.
 - Unauthorized individuals will be asked to leave the facility. If crowds form or if individuals are unwilling to depart when requested, SNS management and law enforcement will be notified if deemed fit. Law Enforcement Standard Operating Procedures will then be followed.
 - The location of the chosen LRS facility will not be released to the public or media.
 - Each LRS facility should have a primary and alternate evacuation route in the event disorderly persons assemble and disrupt operations. See **Attachment #5** for more on LRS operations.
 - b) Security in Distribution. Security measures in distribution can be helpful when attempting to alleviate traffic congestion. However, it is important for county and

local planners to keep the demographics, and geography of Cumberland County in mind when planning for distribution security.

- The county will ensure that all vehicle movements have a cell phone, satellite phone, or radio contact with the dispatch coordinator. Movement problems should be reported immediately to the dispatch coordinator and reported to the SNS management team. A Mobile Incident Management Unit (MIMU) will operate from the LRS location and will ensure communication connectivity with the Cumberland County Emergency Operations Center (EOC) and distribution vehicles. In the event a distribution partner is chosen that has procedures in place to coordinate vehicle movement, this plan will not supersede their procedures.
 - Similar to the responsibility of the state to safeguard SNS assets as it crosses the state line, the county will be responsible for providing an escort within their jurisdictional line from their LRS to POD locations. This will only occur if the situation deems necessary by the Cumberland County EOC ICS structure. If resources allow, the county will coordinate for each distribution vehicle to be escorted by the SO. Often times, it may be more effective to transport material in a fashion that does not draw attention to the distribution vehicle.
 - The local health jurisdiction assumes responsibility of safeguarding the SNS material once it has been delivered to the LRS and POD locations. The county is responsible for coordinating for the security of any additional movement within the jurisdiction.
 - Cumberland county Sherriff's Office will perform escort duties for all personnel requiring transportation to site venues.
- c) POD Security Considerations: Cumberland County will ensure that all POD facilities have a security assessment performed by local law enforcement. Security assessments must be documented and can be found in ***Attachment # 9***.
- Local plans will contain the following:
 - Vulnerability assessment
 - Interior/Exterior physical security
 - Security communication
 - Security breaches
 - Controlled entry into the POD/LRS
 - Protection of staff, equipment, and assets
 - Traffic control for vehicles
 - Crowd control (orderly movement thru the POD)
 - Badges for staff and volunteers
 - While uniformed law enforcement is ideal for security, keep in mind that the situation may warrant their presence elsewhere. T-Shirt security armed with a

two-way radio is a technique which may be employed by Cumberland County when providing security for POD's.

- For security reasons, the receiving area of the POD will be kept out of direct site of the public. Delivery of SNS assets will not be left unaccompanied outside. A lockable, temperature controlled storage area is available for material that is not staged on the POD floor for immediate use.
- d) Treatment Centers (Closed PODS). Treatment centers will be asked to verify and provide their local health departments that they have security plans in place for their facility, before any transfer of SNS assets is accomplished.
- e) Badges: POD and LRS badges will be standard across the county and can be found in ***Attachment #2***. Local County Badges can and will be used for identification. These include:
- All Cumberland County Badges
- f) Access Control levels will be assigned during sign-in procedures and will be indicated with color coded stickers on badges.
- Level 1 – Access to all sites
 - Level 2 – Access to LRS only
 - Level 3 – Access to Individual POD sites.
- g) Handling of spontaneous (non per-event identified) volunteers.
- Will be informed where to report to for in-processing and given there assignment.
 - Badge sign-in/sign-out for volunteers and Core Staff without proper identification can be found in ***Attachment #14***.

VII. Local Receiving Site (LRS) Operations

A. Background and issues

1. At the time the SNS is requested, Cumberland County PHCC in conjunction with the Cumberland County EOC will prepare to open the Cumberland County LRS site. This determination will be made in coordination with all involved parties and agencies and will take into consideration safety, security, traffic, location, and all other relevant issues. All initial and subsequent SNS assets will be received, stored, and staged at this location.
2. The Location for the Cumberland County LRS site and secondary Site, maps of these locations, and Contact Information can be found in *Attachment #5*.
3. LRS Operations involve:
 - a) Accepting custody of SNS assets
 - b) Receiving, organizing, storing, and staging of SNS assets
 - c) Repackaging of bulk pharmaceuticals and compounding of pediatric suspension if required
 - d) Apportioning and replenishment of SNS assets
 - e) Transportation of SNS assets to treatment centers and PODs
 - f) Recovery of SNS assets
 - g) Inventory control.
4. Accepting custody involves the acceptance of assets from the SNS from the state government at the designated LRS site. The County Health Director, or designee, has the authority to sign for receipt of the SNS and must be present when it arrives to sign for it.
5. Receiving involves offloading assets from ground transportation vehicles at the designated LRS site, retaining all pertinent documents from inbound trucking personnel, and verification and organization of materiel to facilitate proper inventory management and storage.
6. Repackaging bulk drugs and compounding of oral suspensions will remain as a backup to situations where the prepackaged medicines are inadequate or ineffective. The function of repackaging and compounding includes creating individual, labeled regimens of specific drugs that will be staged for delivery.
7. Apportionment and movement of orders for medical materials will be based upon projected exposures; the numbers of symptomatic patients at hospitals and treatment sites, as well as the numbers of persons reporting to dispensing sites; and the priority of shipping, considering critical needs, distance or time to dispensing sites, and number of vehicles available. Charts for apportioning materiel within the State of North Carolina may be found in *Supporting Documents (apportionment*

- spreadsheets*) of the Cumberland County SNS Plan. If the supply of prepackaged doses is not adequate to serve the public dispensing sites, medications will be apportioned using orders for managed inventory (MI) that are packaged in units of use. If MI shipments are delayed; bulk supplies will be repackaged and delivered to the dispensing sites as a contingency plan. Similarly, if quantities of oral suspensions are inadequate or delayed, oral suspensions will be compounded at the LRS site for delivery to the dispensing sites as a contingency plan.
8. Staging involves the positioning of medical materiel at the designated LRS site in such a way that it can be easily broken down to support shipment to delivery points. Pick lists generated by the inventory control function will prompt storage personnel to pick materiel and staging personnel to organize it by delivery location in the shipping area. While in the staging area, quality assurance personnel should verify condition of product, count, and destination of each pallet. The pallet will then be wrapped and shipping will be notified.
 9. Transportation of assets will be coordinated at the designated LRS site. The primary method of transporting SNS assets to delivery sites will be trucks. Helicopter transportation will be the alternate method of transportation in the event that traffic or other situations prohibit the use of trucks.
 10. Recovery of SNS equipment, containers, and unused materiel are outlined in the Agreement Addenda between the State and Cumberland County. Unused medical assets include, but are not limited to specialized cargo containers, refrigeration systems, unused medications that remained at the LRS site, ventilators, portable suction units, repackaging and tablet-counting machines, and computer and communications equipment.
 11. Inventory control includes tracking and managing SNS assets transferred to county custody, stored within the LRS site, and delivered to the delivery sites. A dedicated Inventory Management Team will oversee the functions of inventory management in coordination with the LRS Coordinator.

B. Planning

1. The CCDPH negotiated mutual-aid agreements and memoranda of agreement with facilities that support the SNS Plan and would respond during public health and medical emergencies.
2. The CCDPH, in conjunction with PHRST 3, The North Carolina Office of Public Health Preparedness and Response, and Local Law enforcement have assessed the LRS sites to ensure facilities meet minimal location, layout, and operational criteria as set forth by the DSNS.

3. Precedence was given to warehouses that are existing operational facilities and are able to provide staff and sufficient material-handling equipment, office equipment, fuel, pallets, stretch wrap and safety materials/equipment to support LRS operations.
4. The MOU is reviewed and signed annually with these sites that are geographically distributed throughout Cumberland County dependant upon time distance calculations and according to easy access to the population base.

C. Implementation

1. The Cumberland County PHCC after notification from the Operations Section of the Cumberland County EOC will notify the SNS Coordinator of the decision to open the LRS site.
2. The LRS Coordinator will arrange for operations of the LRS site.
 - a) The SNS Coordinator will activate and initiate call-down of LRS staff
 - b) The SNS Coordinator will contact the designated LRS facility and request preparation for receipt of SNS assets
 - c) The LRS Coordinator will report operational information routinely to the SNS Coordinator of the Cumberland County PHCC. The PHCC will relate this information to the Cumberland County EOC through the Operation Section of the Cumberland County ICS structure.
3. The Cumberland County PHCC will communicate with the Cumberland County EOC and request activation of law enforcement to secure LRS site.
4. The SNS Coordinator will provide the State SNS Coordinator with a signed copy of the MOA between the County and the State.
5. The SNS Coordinator will provide the State SNS Coordinator with a list of all persons authorized to sign for SNS assets on behalf of the county.

D. Deployment

1. The LRS Coordinator will initiate readiness of LRS operations.
 - a) Cumberland County Law Enforcement personnel will conduct security sweep of LRS site and execute internal and external security plans
 - b) Cumberland County Emergency Management will credential all persons at the LRS facility for entry into secure areas
 - c) The LRS Coordinator will give an initial briefing; provide for distribution of job action sheets; and ensure just-in-time training, if needed
 - d) LRS personnel will set up stations within the LRS
 - e) The LRS Coordinator and Repacking Manager will review repackaging and compounding plans

- f) The LRS Coordinator and the Safety Officer will review safety plans.
2. LRS personnel will receive and store SNS assets.
 - a) The authorized Cumberland County DEA Registrant will formally accept custody of SNS materiel from the CDC; transfer documents will include the following:
 - List of items in the SNS shipment
 - Custody transfer form
 - DEA Form 222 for transfer of any Schedule II controlled substances
 - Memorandum of agreement describing the SNS materiel that State will provide, how the County will use the materiel, and the materiel that the state must return after an event.
 - g) LRS warehouse personnel will offload SNS materiel from ground transportation vehicles
 - h) Receiving Team(s) will receive and inspect materiel for quality and quantity;
 - Controlled substances will be immediately identified by receiving personnel and given to the pharmacist(s) in charge of overseeing such items.
 - Narcotics inventory within the specialized cargo container from the 12-hour push package will be immediately inventoried by the pharmacist(s) in charge and a State team member.
 - A perpetual inventory will be maintained by the pharmacist(s) in charge for all controlled substances.
 - Refrigerated items will be immediately identified by receiving personnel and given to warehouse personnel for appropriate cold storage. Received items will be transferred into storage by warehouse personnel under appropriate temperature controls.
3. The SNS Coordinator of the Cumberland County PHCC will communicate apportionment needs to the LRS Coordinator
 - a) The LRS Coordinator will communicate these data to the Inventory Management System (IMS) Lead for input into the inventory management system
 - b) Pick lists will be generated by the inventory management system
4. Pick lists will be forwarded to the LRS Coordinator for allocation to Pick Teams for picking.
5. Pallets of picked SNS materiel will be placed within the staging area for delivery to various delivery sites.

6. The pick list will be forwarded from the Pick Teams to the QA/QC Unit for verification of SNS materiel to be shipped.
7. LRS warehouse personnel will ship SNS materiel to designated treatment centers and PODs storage.
 - a) The priority of shipping will consider critical needs, distance or time to dispensing sites, and number of vehicles available
 - b) The process for delivery of controlled substances will comply with the DEA Code of Federal Regulations Title 21, Volume 9, Se1301.77 Security controls for freight forwarding facilities.
 - c) Transportation shall occur under proper temperature and security controls and with appropriate communication methods.
 - d) Drivers will obtain signatures on delivery documents that accompany SNS shipments and return the documents to the IMS Unit.

E. Recovery

1. Cumberland County will notify key stakeholders, including the LRS team of potential cessation of enhanced public health support, plan for staged withdrawal of enhanced public health support, and no required need for additional SNS assets.
2. The LRS Coordinator will recover unused SNS assets as outlined in the memorandum of agreement between the state and the county.
3. The SNS Coordinator will make arrangements for disposition of any remaining SNS assets within the LRS site.
4. The LRS Coordinator will submit final reports to the SNS Coordinator of the Cumberland County PHCC.

Contact #'s for above as well as call down lists for LRS site may be found in ***Attachment #2***.

LRS Incident Command Structure can be found in ***Attachment #3***.

Inventory of materials and equipment located at the LRS sites can be found in ***Attachment # 5***.

Office supplies and equipment to be delivered to the LRS sites can be found in ***Attachment # 5***.

VIII. INVENTORY CONTROL PLAN

A. Overview

Inventory and re-supply management includes tracking and managing SNS materiel transferred to state custody, stored within the LRS, and delivered to the POD sites and Treatment Centers. The designated LRS Coordinator/Materiel Manager and Inventory Control Officer will both serve to oversee inventory management.

1. As supplies are moved throughout Cumberland County, the LRS Coordinator/Materiel Manager needs to:
 - a) Track all receipts
 - b) Apportion supplies
 - c) Process requests from dispensing sites and treatment centers
 - d) Create issue documents for picking materiel
 - e) Record the locations to which it sends all materiel, equipment, and cargo containers
 - f) Monitor stock levels and work with the State SNS Coordinator to replenish materiel
 - g) Recover unused SNS materiel and assets
2. Desired attributes for an inventory management system should include:
 - a) Be compatible with the pipe-delimited file that the CDC will provide
 - b) Upload push-package inventory
 - c) Upload MI inventory
 - d) Upload other inventories as provided by the CDC/NCPH
 - e) Track all receipts
 - f) Apportion supplies
 - g) Create issue and report documents
 - h) Record locations to which materials, equipment and cargo containers are sent
 - i) Monitor stock levels and levels for replenishing supplies
 - j) Recover unused SNS assets
3. Add Attributes to consider:
 - a) Separate pick lists for controlled substances
 - b) Computer generated warning when stock has met a critical inventory minimal threshold
 - c) Assign/read barcode for location, lot, expiration date
 - d) Volumetric location capacity
 - e) Track pallet/product to dispensing sites
 - f) Track movement of product between dispensing sites
 - g) Report when shipment arrives to dispensing site
 - h) User level security

- i) Back order capabilities
- j) Complete audit trail of stock movement
- k) Apportionment with map according to population/area for city, county, district, state
- l) Assign order priority
- m) Alternate dispensing site from original
- n) Review orders by site and time
- o) Reprint orders
- p) Break a case
- q) Apportion for multiple events

B. Inventory Management Procedures

1. Issuing and tracking SNS materiel consists of three basic levels described below:
 - a) Receipts of SNS materiel from CDC/NCPH
 - b) SNS materiel stored in the LRS
 - c) Issues of SNS materiel to POD Sites and Treatment Centers.
2. Electronic Spreadsheet versions Program are included with the electronic version of this plan. This Microsoft Excel Workbook contains spreadsheets that can be filled in electronically or printed out and used as paper forms
 - a) Initial inventory report (to track all materiel received from CDC/NCPH)
 - b) Remaining inventory in stock (to track where materiel is stored in the LRS)
 - c) Pick lists and apportionment reports (to track all materiel issued to delivery sites).
3. In the event that the response begins and a computer is not available, the forms (which mirror the electronic worksheets) may be photocopied and used to manually record data. When a computer is available, data from the paper forms can then be transferred into the Electronic Spreadsheet. Copies of the blank spreadsheets are located in ***Attachment # 14.***
4. The Contact Information for Inventory Control team can be found in ***Attachment # 2.***
5. Job Action Sheets for Inventory Control Officer and his Team can be found in ***Attachment # 10.***
6. Records of Training conducted are located in ***Attachment # 16.***

C. Upon Arrival Of SNS Materials To LRS Site

1. Event is defined per CCDPH PHCC and Cumberland County EOC and data faxed to LRS Coordinator includes biologic agent and locale of event

2. CCDPH PHCC notified by LRS Coordinator of the arrival of SNS push package (and receipt of inventory file)
3. Inventory Control Officer receives and uploads file from State RSS
4. Inventory Control Officer prints initial inventory and fax to CCDPH PHCC
5. Initial apportionment orders placed by CCDPH PHCC and faxed to LRS Coordinator
6. LRS Inventory Control Team
 - a) Defines the event in the Information Management System
 - b) Selects apportionment of x% of SNS “treatment center supplies” (as indicated by MD in orders for initial apportionment)
 - c) Selects treatment centers
 - All treatment centers within the IMS, or
 - Individual hospitals as specified
 - d) Selects apportionment of x% of SNS “POD supplies” (as indicated by MD in orders for initial apportionment)
 - e) Activates POD’s
 - All POD’s within the IMS, or
 - All POD’s within specified Bio/Chemical Hazard Area, or
 - Individual POD’s as specified
7. Lot Numbers for all medications shall be recorded for future reference as needed. As soon as possible the system of logging and tracking of items should be computerized

D. Apportionment

1. Inventory Control runs initial apportionment pick lists for treatment centers including any orders for prophylaxis of healthcare workers at treatment centers.
2. A complete listing of current Treatment Centers and required numbers of personnel to be treated are in ***Attachment #7***.
3. * Deducts from IMS quantity of oral prophylaxis sent to treatment centers
 - a) Runs initial apportionment pick lists for PODs
 - b) Initial apportionment options for oral antibiotics include:
 - c) To a flexible number of PODs by projected patient count
 - d) By county census data
 - e) Per 1000 persons affected
 - f) Any combination of the above 3 methods

E. Apportionment Numbers For POD Sites:

1. Number are flexible of PODs

POD	Patient Count	% apportionment based on estimated patient count
POD #1	20,000	5%
POD #2	20,000	5%
POD #3	20,000	5%
POD #4	20,000	5%
POD #5	20,000	5%
POD #6	20,000	5%
POD #7	20,000	5%
POD #8	20,000	5%
POD #9	20,000	5%
POD #10	20,000	5%
Treatment Centers	25,000 – 50,000	30%
Total	250,000	80%

2. Apportion By Census Data

- a) Spreadsheet of each county with census data (adult and pediatric 0-4yrs)
- b) Computer program to determine:
- c) Population served at POD= county census data / number of PODs in county
- d) Pediatric population served at POD: census data for pediatric 0-4 yrs of age / number of PODs in county = number of 4 ounce bottles that need to be dispensed

3. Apportion Per 1000 Persons Affected

F. Plague And Tularemia

Apportionment based upon 50% ciprofloxacin 500 mg tablets, and 50% Doxycycline 100 mg tablets

Patient count	Bottles Required	Cases Required	Bottles Issued	Patient count	Bottles Required	Cases Required
	Doxy	Cipro	Doxy 100bot/case	Cipro 100bot/case	Doxy	Cipro
1000	500	500	5	5	500	500
2000	1000	1000	10	10	1000	1000
3000	1500	1500	15	15	1500	1500
4000	2000	2000	20	20	2000	2000
5000	2500	2500	25	25	2500	2500
6000	3000	3000	30	30	3000	3000
7000	3500	3500	35	35	3500	3500
8000	4000	4000	40	40	4000	4000
9000	4500	4500	45	45	4500	4500
10,000	5000	5000	50	50	5000	5000
15,000	7500	7500	75	75	7500	7500
20,000	10000	10000	100	100	10000	10000
25,000	12500	12500	125	125	12500	12500
30,000	15000	15000	150	150	15000	15000
40,000	20000	20000	200	200	20000	20000
50,000	25000	25000	250	250	25000	25000
75,000	37500	37500	375	375	37500	37500
100,000	50000	50000	500	500	50000	50000

G. Staffing Requirements

Proposed staffing requirements are two inventory management specialists and one apportionment coordinator per shift.

H. Equipment Requirements

1. PHRST Region 3 Database components
2. Computer hardware and software to support PHRST Region 3 systems
3. Microsoft Excel applications for pick lists and reports
4. Printer
5. Basic office supplies, such as paper, pens and pencils, a photocopier machine, and a calculator.

I. Controlled Substances

1. A Push Package currently includes three different controlled substances: morphine, diazepam, and midazolam. The Drug Enforcement Administration (DEA) classifies substances by their potential for abuse. Accordingly, morphine is classified as Schedule C-II, while diazepam and midazolam are classified as Schedule C-IV.
2. The DEA regulates the storage and transfer in accordance with Title 21 of the U.S. Code of Federal Regulations. DEA subsequently authorize individuals or organizations to handle specific classes of controlled substances. The individual or organization must ensure that they maintain a detailed chain-of-custody record of all transfers. For C-II substance, that record must include a DEA Form 22 that the person who receives the material initiates to request the transfer. The DEA Registrant will be both of the CCDPH's Pharmacists and the DEA Number that will be used is assigned to the Cumberland County Health Department.
3. The DEA recognizes that during an emergency, availability of the identified DEA registrant may be limited. If not available to accept receipt at time of delivery, the DEA will still allow delivery of the controlled substance to the organization, but the registrant must eventually provide signed paperwork for each transfer.

J. Receipt Of Controlled Substances

1. For details, refer to the Policy for Return of Controlled Substance to NCPH policy from Receiving Medical Entities.
2. Controlled substances that are returned to CCDPH from receiving medical entities shall be housed, inventoried, secured, maintained, and distributed by the CCDPH. Controlled substances may be shipped concurrently with other disaster relief medical assets as part of recovery and return efforts. The policy outlined below will guide actions concerning controlled substances:
3. The party responsible for shipping controlled substances shall remain on site at the warehouse until controlled substances have been identified by warehouse personnel and arrangements for transport of controlled substances to the CCDPH are complete.
4. Containers storing controlled substances entering the warehouse from return of assets by local medical entities should be identified immediately by both the sending and warehouse receiving parties.
5. Containers storing controlled substances shall be separated from other assets, inspected by warehouse personnel for integrity of packaging and given to the shipper for transport to the CCDPH.
6. If the packaging is not intact, the shipper and warehouse personnel shall verify count, and product integrity shall sign the controlled substance pick sheet to indicate

accuracy and transfer to the CCDPH. The signed pick sheet should be placed inside the box of controlled substances and sealed for transport.

7. The warehouse shall maintain a log of number of containers of controlled substances. This log shall include:
 - a) Name and address of medical entity returning controlled substances
 - b) Name of driver/shipper
 - c) Name of warehouse personnel inspecting integrity of container
8. At the end of each business day, receipt of these containers by the CCDPH shall be verbally verified in coordination with warehouse personnel and personnel from the CCDPH Pharmacist and the log annotated to reflect this information.

K. Order Requests For Controlled Substances

Registrants who transfer controlled substances must ensure that the people to whom they transfer the drugs have the proper DEA registration. Proof of DEA registration must be submitted by the requesting medical entity upon request of controlled substances; DEA registration may be faxed to the MDH. For Schedule II controlled substances, the requesting medical entity must submit a DEA Form 222.

L. Filling Order Requests For Controlled Substances

1. Order requests for controlled substances shall be filled at the CCDPH by licensed pharmacists. Registrants who transfer controlled substances must ensure that the people to whom they transfer the drugs have the proper DEA registration. The registrants also must keep a detailed chain-of-custody record of all transfers. For C-II substances, that record must include a DEA Form 222.
2. Controlled substances shall be staged in portable lock boxes by two persons. Signatures of both persons staging controlled substances shall be required on the pick list, thus verifying inventory staged. The pick list will serve as the detailed chain-of-custody record and is to be placed in the portable lock box prior to sealing the box. At the medical entity, the DEA registrant will sign all pick lists for controlled substances. Discrepancies of controlled substances shall be immediately reported to the CCDPH PHCC by the DEA registrant at the medical entity. Upon notification of such discrepancy, a licensed pharmacist from the CCDPH will take an immediate inventory of said controlled substance(s) in efforts to resolve the discrepancy.

M. Medications Requiring Refrigeration

1. Receipt of medications requiring refrigeration

Pharmaceuticals and medical items requiring refrigeration that are returned to CCDPH from receiving medical entities shall be housed, inventoried, secured,

maintained, and distributed by the CCDPH Containers storing refrigerated items entering the warehouse from return of assets by local medical entities should be identified immediately by both the sending and warehouse receiving parties. Containers storing refrigerated items shall be separated from other assets and given to the shipper for transport to the CCDPH.

2. Order requests for items requiring refrigeration

These requests shall be forwarded to the CCDPH for filling. To aid in coordination of transportation, warehouse personnel should be informed that such orders have been sent to the CCDPH and will need to be picked up prior to delivery to local medical entities.

3. Filling order requests for medications requiring refrigeration:

Order requests for items requiring refrigeration shall be filled at the CCDPH and verified by a licensed pharmacist prior to staging and shipping. Shipping and Transportation All shipping and transportation shall be coordinated through the CCDPH PHCC. Options for shipping and transportation include utilization of the existing courier system, use of rented large capacity vehicles, or contract with trucking facilities. Size of order will determine mode of transportation.

4. Inventory management

As items are received into the warehouse, they shall be inventoried and placed into the Excel spreadsheet being utilized for inventory management. (Note that the Excel inventory management sheet is also utilized as the Request for Orders Sheet.) At the conclusion of each day, the inventory spreadsheet shall be emailed to CCDPH. Currently, the following persons should receive this report:

N. Pick-Up Of Orders At The Warehouse

1. A representative from a medical entity may pick-up filled orders at the warehouse upon authorization from the CCDPH. If authorization is granted, warehouse personnel must be informed prior to pick-up that said representative will be picking up for the medical entity, and information regarding day and time of pick-up provided. Additionally, such filled orders may not be distributed from the warehouse without the presence of a representative from CCDPH. The following principles shall guide pick-up of orders:
 - a) The medical entity must be a duly recognized organization within the State of North Carolina;
 - b) The representative from the medical entity must present valid identification and credentials;
 - c) As the pharmaceuticals are located within the warehouse in a section that is separate and secure from the medical-surgical supplies, the representative from

the medical entity may, at that time, view and select required medical-surgical supplies;

- d) No pharmaceuticals may be selected on-site;
- e) Representatives from medical entities that are not organizations within the State of North Carolina (e.g., emergency medical clinics, DMATs, other temporary clinics) may not pick-up filled orders at the warehouse. All requests from such medical entities will be delivered from the warehouse as described within this document.

IX. Distribution

A. Purpose:

The purpose of this section is to describe and explain the ability to move supplies and materials as needed between agencies and locations to support mass prophylaxis/treatment.

B. Roles and Responsibilities

1. Agencies

- a) Cumberland County Health Department will be the lead agency in movement of medical supplies and medications
 - No written agreement is needed due to primary retaining of responsibility
- b) Cumberland County Buildings and Grounds will be the backup agency responsible for movement of medical supplies and medications
 - A Memorandum of Understanding (MOU) has been created and put in place stating such
 - This MOU is kept in the Health Director's Administrative Assistant's Office with all other MOUs

C. Personnel

1. LRS Coordinator/Material Manager

- a) Line of Succession
 - Environmental Health Supervisor II
 - Environmental Health Supervisor I
 - Family Planning Supervisor
- b) Responsibilities
 - Coordinate distribution of supplies to points of dispensing (POD's), closed POD's and other locations.
 - Assist with receiving and picking of supplies as needed
 - Ensure staff are trained in position
 - Provide just in time training for staff not trained
 - Other duties as needed during emergencies

- c) Training/Job Action Sheet
- All personnel mentioned in line of succession for distribution manager have been given a job action sheet and have had a chance to review it and ask questions. A copy of said job action sheet can be found in *Attachment #10*.
 - All personnel mentioned in the line of succession for distribution manager have participated in at least one exercise with distribution aspects. After Action Reports (AAR) and Corrective Action Plans (CAP) are available for review for said exercises
 - All personnel mentioned in the line of succession for distribution manager have been trained to their respective levels of the National Incident Management System (NIMS)

2. Other Personnel

- a) Just In Time Training has been created covering the following:
- Chain of custody protocol
 - Routing information
 - Security/communications procedure
 - Material handling equipment
 - Loading and off loading materials

D. Resources

1. Trucks and Drivers

- a) A Memorandum of Understanding (MOU) is in place with Emergency Management for use of vehicles during events.
- This MOU is kept in the Health Director's Administrative Assistant's Office with all other MOUs
 - This MOU describes the likely amount of trucks, personnel, and other resources needed to adequately distribute medical supplies
- b) Badging and Credentialing
- Badging
 - Truck drivers (and support personnel), when reporting for assignment, will have their picture taken and given a standard county picture identification badge. Truck drivers will be required to keep this badge on their persons at all times will transporting supplies

- Should the standard county picture identification not be available then a Mt. Olive Pickle identification badge will be used to ensure security
- Credentialing
 - When truck drivers report for assignment and sign in, the Operations Section Chief should take the truck drivers list and their drivers license numbers and submit to law enforcement at the Emergency Operations Center (EOC) for approval and verification of credentials
 - Should the driver not have credentials or does not have their driver's license available for review then they should not be allowed to operate said vehicle in a distribution manner

2. Site Supplies

a) Local Receiving Site (LRS)

- Supplies on hand include
 - 1 pallet jack
 - 2 hand carts/dollies
 - 0 forklifts
 - Various sizes of tape
 - No plastic wrap
 - Abundance of pens and pencils
 - Abundance of paper
- Memorandum's of Understanding
 - Various supplies needed for LRS operations are not available currently at the LRS
 - An MOU is in place with Office Max for office supplies for LRS operations
 - An MOU is in place with Cumberland County Office of Emergency Services for requesting additional off loading materials
 - These MOUs are kept in the Health Director's Administrative Assistant's Office with all other MOUs

b) Point Of Dispensing

- Supplies on hand include:

- 0 pallet jack
 - 1 hand carts/dollies
 - 0 forklifts
 - Various sizes of tape
 - No plastic wrap
 - Abundance of pens and pencils
 - Abundance of paper
- Memorandum's of Understanding
 - Various supplies needed for POD operations are not available currently at the PODs.
 - An MOU is in place with Office Max for office supplies for POD operations.
 - An MOU is in place with Cumberland County Office of Emergency Services for requesting additional off loading materials.
 - These MOUs are kept in the Health Director's Administrative Assistant's Office with all other MOUs.

E. Locations, Routes, and Schedule

1. Locations

a) Local Receiving Site

- Primary
- Back-up

b) Point of Dispensing

2. Schedule and Frequency

- a) Truck drivers and associated personnel will work standard 12 hour shifts per NIMS recommendations
- b) Re-supplying operations will occur initially at the start of each 12 hour operational period.

3. Routes – All routes from LRS to PODs and Treatment Facilities are located in ***Attachment #6.***

X. Dispensing of Prophylaxis

A. Overview

This section addresses operations and procedures for the dispensing of mass prophylaxis to residents of Cumberland County.

B. Procedures

1. Quantity of Medications Dispensed

Dispensing to head of household may pick regimens for the household. A head of household is an adult 18 years of age or older that has been designated head of household by a group of persons that wants to be viewed as a group or household for purposes of prophylaxis.

2. Minimal Information Requested for Dispensing

a) The following information must be presented at the time of dispensing a prophylactic regimen.

- Name
- Age/weight
- Allergies
- Address (for tracking purposes)
- Current medications

3. Symptomatic Individuals

Individuals seeking to access care will be triaged before entering a congregate setting. Triage will be dependent upon signs and symptoms of causative agent. Symptomatic persons will not be allowed entry to the POD; but will be redirected to an appropriate acute care setting.

4. Handling of Unaccompanied Minors

- a) Unaccompanied minors may give consent to treatment and/or prophylaxis according to NC Public Health Law and CCDPH standing orders. Public Health Law for unaccompanied Minor can be found in the *Reference Section*.
- b) Unaccompanied minors will be directed to a designated representative of the POD for further evaluation and/or consultation.

5. Special Needs Populations:

- a) The populations that have been identified in Cumberland County as having special needs include:
- Limited English speakers
 - Hearing or sight impaired
 - Homebound individual
 - Institutionalized persons (hospitals, nursing homes, assisted living)
 - Incarcerated individual
 - Undocumented aliens
 - Indigent persons
 - Functionally illiterate
 - Cognitively impaired
 - Ethnicity
- b) During a public health emergency, Cumberland County will utilize the translators/interpreters and services listed in ***Attachment #15***. Translators/interpreters will be available during POD clinics to assist limited English speakers and hearing impaired individuals. In the absence of a translator, language line translation services are available through the Language Line Service. Signage and visual aids will be used to assist hearing impaired individuals. The instructions for use of this service are provided in ***Attachment #15***.
- c) Cumberland County will provide special needs helpers to assist hearing and sight impaired individuals, semi-ambulatory individuals, and functionally illiterate individuals, through the POD clinic.

6. Crowd control, Safety and Security and traffic control

- a) Crowd control will be maintained by use of resources for example barriers, cones, signage, and security personnel. These resources will be used to guide clients to the appropriate locations within the POD.
- b) Security personnel at all designated sites (POD, LRS, Triage, Pick-ups) will be clearly identified and visibly positioned. Security will maintain a presence at site daily from start up to take down for the duration of the operation and will be responsible for lock down of all facilities at the end of each operational period. The reasons for maintaining security include protection of medications and vaccines, protection of clinic staff, maintain order, and ensure unimpeded traffic flow.

7. Staffing/Shift Changes

- a) Shifts, if possible, should last no less than 8 hours nor longer than 12 hours. Shift change operations can be found in ***Attachment #13***.

- b) On the first shift worked, each staff member will complete a brief registration and emergency contact form that will be maintained by the Documentation Tracking Unit Leader. At the beginning of each shift everyone is to sign the shift sign-in sheet and present photo identification. When personnel complete their shift, they will sign out. It is not permitted for anyone to sign in or out for another person.
- c) Every POD staff member will have an approved form of identification. POD staff members will prominently wear the approved identification during their shift. Identification will be picked up at shift sign-in and turned in at the end of the shift each day.

8. Mechanisms for addressing public questions/concern

- a) During a large scale disaster or bioterrorism event it is recognized that there will be widespread concern among the general population. CCDPH will utilize a variety of methods to respond to these concerns.
- b) CCDPH will establish an automated information line that will be accessible to the public in both English and Spanish. In the event that communications with the health department become unattainable, this information line will be switched to the EOC.

9. Adverse reactions:

In an effort to track possible adverse reactions, the following safeguard will be implemented; clients will be assigned a specific control number and the appropriate lot number for the doses administered. In the event that a client experiences an adverse reaction, they will be given a number to contact for information. In the event of a serious reaction, the client will be instructed to report to the CCDPH.

C. Dispensing Prophylaxis

1. POD dispensing Plan:

- a) Site specific plans for each of the dispensing sites exist and consist of the following information
 - An MOU for use of the facility, see *Attachment #18*.
 - Facility manager with contact information for accessing the site, see *Attachment #2*.
 - Address and telephone numbers at the facility, see *Attachment #9*.
 - Written floor plans/clinic flow charts, see *Attachment #9*.
 - Specific delivery site identified with plans to ensure 24/7 unblocked access see *Attachment #9*.

- Crowd control, security plans, and traffic management see *Attachment #9*.
 - Parking plan see *Attachment #9*.
- b) In the case of either a man-made or natural event that requires the activation of the SNS, certain supplies must be provided and made available at the local level, separate from what is to be received. This section will address the availability and/or procurement of these essential supportive supplies.
- c) Medication and Causative Agent Information Sheets: This information will be generated by the CCDPH and distributed to the appropriate team leaders. Information in both English and Spanish will be readied as these are the county's two main languages. Additional language specific information will be downloaded from the CDC as needed. Copies will be made onsite with equipment supplied by the facilities.
- d) Dispensing/Medical Supplies: The following type supplies will be delivered prior to the opening of the POD by means of preparedness coordinators' trailers pulled by county vehicles. Supplies will be stored in the locked area of the POD sites.
- e) Name/Address/Patient History Forms (NAPH): These forms will be originated at the CCDPH given to the Registration Leader with additional copies made as needed at the POD sites.
- f) Office Supplies/Office Equipment: Pursuant to an MOU with the facility and CCDPH, both agree to supply whatever office equipment/ supplies shall be deemed necessary for the duration of the incident. Personnel will be on hand to assist in the obtainment and placement of these articles.
- g) Command/Control Vests: Command/Control Vests for SNS participants will be supplied onsite by the CCDH logistics section personnel. Vests will be returned at the end of shift so that they may be redistributed to oncoming staff members. Job specific titles will be printed and placed in the appropriate vest holders by CCDPH personnel. Police will supply their own vests to be used in emergency. In the event that there is a necessity for badges, the CCDPH and the County Sheriffs Department is equipped to provide these.
- h) Communication Equipment: CCDPH is equipped with 2 way communications devices and chargers. These will be distributed to all team leaders prior to the actual dispensing begins. The team leaders will be responsible for ensuring that these devices remain charged.
- i) Signage: CCDPH maintains a supply of dry erase signs and road side signs. CCDPH will bring and set up these signs for interior and exterior use. In the

event that additional signs are required, these may be printed or written on stock paper available at the POD sites.

- j) Crowd and Traffic Control Equipment: CCDPH and Cumberland County Sheriffs Department and the Department of Public Works Commission will provide traffic cones and barriers for the event.

2. Modified clinical involvement:

- a) In a large Bioterrorism or Disease outbreak event, fast and efficient dispensing of medication will be required to provide prophylaxis to the population in a short amount of time. Decreasing the amount of persons waiting in line would expedite the process. A multiple regimen policy potentially shortens dispensing lines, allows people to receive their medication faster, and reduces public frustration and the amount of staff required.
- b) To assist in the distribution of prophylaxis in as rapid a manner as possible during a Bioterrorism or Disease Outbreak situation, the following procedure shall be implemented.
- A designated household representative may pick up oral medication regimens for all household members.
 - The designated household representative should present to the dispensing site with an address and phone number (if available).
 - CCDPH acknowledges that undocumented aliens reside within the jurisdictions of the local health department. Undocumented aliens will be prophylaxis/vaccinated with the general population in a POD clinic setting. The Cumberland County Public Information Officer will develop and implement a public health education campaign to inform undocumented aliens that they may receive prophylaxis at the POD sites and will not be required to show proof of residency. Public Health Information can be found in ***Attachment #12***.
- c) The Household Representative shall provide a list of the persons and pertinent health information for which they are picking up medication. The list should include the following information:
- Names of household members
 - Date of birth of all household members
- d) Additional specific triage information needed for each member will be:
- Adult
 - Allergies
 - Medical Conditions

➤ Current Drugs

• Children

- Weight
- Allergies
- Medical Conditions
- Current Drugs

- e) Appropriate education, guidance and language specific medication information will be provided to the designated individual so that they may provide education to household members receiving prophylaxis.
- f) Each member of the household will be provided with a control number and medication lot number.

3. Alternate dispensing modalities:

Alternate dispensing methods are only limited to the Incident Commander and his staff, examples are super PODs, drive-thru dispensing, or delivery by postal workers (Mail System).

4. Increasing throughput:

Increasing the numbers through the POD sites require more qualified individuals available to dispense medications through the POD site.

5. First responders and critical infrastructure personnel:

- a) This policy will ensure that essential first responder, critical infrastructure personnel and their household members receive prophylaxis in a timely manner when responding to a bioterrorism event or outbreak of infectious disease. These persons must be protected first so that they can care for the rest of the community. Inclusion of household members will ensure a higher level of compliance of workers willing to report to work.
- b) “First responders” are defined as “those who initially respond to an emergency” and for this particular situation are defined as the following:
- Fire fighters
 - Law enforcement officers (police, sheriff, other county/city law enforcement)
 - Emergency medical services (EMS) personnel
 - Emergency Management
 - Public health personnel and volunteers deemed necessary to support SNS functions.
 - Essential employees of hospitals

- c) “Critical infrastructure personnel” shall be defined as “those individuals responsible for maintaining; orderly governance and continuity of essential community and medical services. For this particular situation these individuals are defined as the following:
- Key governmental leaders to ensure the continuity of operations
 - Transportation and public works personnel
 - Medical and Public health personnel
- d) Essential first responders, critical infrastructure personnel and their household members will be given an appropriate regimen of prophylaxis.
- e) A household will be defined as; “those individuals that physically reside consistently in the same domicile”.
- f) The First Responder or Critical Infrastructure worker will present to the dispensing site with a picture ID, i.e. drivers license, picture badge, address and phone number. Additionally they should bring with them a list of the persons and pertinent health information for those whom they are picking up medication. This list shall include the following information:
- Names of household members
 - Date of birth of all household members
- g) Additional triage information needed for each member will be:
- Adult
 - Allergies
 - Medical Conditions
 - Current Drugs
 - Children
 - Weight
 - Allergies
 - Medical Conditions
 - Current Drugs
- h) Each member of the household on the list will be assigned their own control number and the medication lot number recorded. This list will be maintained for tracking purposes.

- i) Appropriate education, guidance and medication information will be provided to the individual receiving the prophylaxis so that person can educate the additional members of the household receiving medication.
- j) Copy of the Ethics Task Force- NC Institute of Medicine can be found in the *Reference section*. First Responder Prophylaxis Prioritization can be found in *Attachment #1*.

6. Special Needs populations:

- a) The CCDPH maintains a list of social service agencies in the county who may be contacted to provide up-to-date lists of homebound individuals. The list of social service agencies is found in *Attachment #19*. In the event of a public health emergency the Director of Nursing will contact the social services agencies for the list of homebound individuals.
- b) The number of long term care facilities in Cumberland County is **five**. A list of these facilities with point-of-contact is provided in *Attachment #7*. Maps to these facilities and their respective maximum occupancy levels can be found in *Attachment #7*. In the event of a public health emergency, CCDPH will provide medications/ vaccinations to these facilities so they may prophylaxis or vaccinate their own population using in-house medical staff.
- c) Cumberland County contains one Jail and Detention Center. A list of these facilities with their point-of-contact information is listed in *Attachment #7*. Maps to local correctional facilities and their respective maximum occupancy levels can be found in *Attachment #7*. Emergency medications for local facilities will be delivered by the local health department and administered by jail nurse.
- d) Cape Fear Valley Medical Center (CFVMS) will receive an adequate amount of doses from the SNS. All treatment centers will be responsible for transportation of medical supplies from the LRS to there center. They are required to keep track of medications dispensed and report numbers to the PHCC treatment center coordinator.

D. Training

- 1. Training is broken into two different types of training:
 - a) Just-in-time Training for POD personnel who are not assigned a position prior to arrival to the Incident.
 - b) Training of individuals who are pre-assigned positions during an Incident.
- 2. Just-in-time Training can be found in *Attachment #16* and training conducted prior to an incident can be found in the *Supporting Documents*.

E. Command

1. POD Staff Leads:

a) The CCDPH has identified staffing leads and their alternatives for POD management. These positions include, but are not limited to:

- POD Manager
- Site Safety Officer
- Public Information Coordinator
- Site Logistics Officer
- Site Operations Officer
- Site Planning Officer
- Site Finance/Administration Officer

2. Job action sheets for POD positions can be found in *Attachment #10*.

3. These “command officers” will wear easily seen identification (vest with appropriate title on front and back) and be issued a radio and/or telephone. The incident command structure for Cumberland County POD is found in *Attachment #3*. Point-of-contact information for the command officers can be found in *Attachment #2*.

4. Each unit leader or Officer/Supervisor shall be responsible for supervising assigned staff and remediation identified problems within their sector. Problems that cannot be solved at the sector level shall be brought to the attention of their Supervisor and so on up the ICS chain.

5. Each Section Officer shall keep the POD Manager regularly apprised of their progress and any problems encountered. The POD Manager will keep the PHCC POD Site Coordinator regularly apprised of the progress being made, problems encountered, and resources needed.

6. The POD Managers and their back-ups emergency contact information can be found in *Attachment #2*.

F. Management of Staff and Volunteers

1. CCDPH Preparedness Coordinator will maintain a data base for volunteers that may or may not respond during an incident. This data base can be found in the *Supporting Documents* section. The data base will contain ample numbers to cover any absenteeism.

2. The number of staff and volunteers required to run operations is _____.

3. The shift change information can be found in *Attachment #13*.

4. Staff and volunteers will be provided the following conditions in which to work with:

a) Breaks during work hours:

- 2 each 15 minute breaks, one before lunch break and one after lunch break.
- 30 Minutes for lunch break

b) Meals will be provided by [REDACTED].

c) Staff and volunteers will be able to return home after their shift is complete.
Family care: Knowing this is what will cause the most absenteeism among workers the County will try to provide family care to those staff and volunteers who may require care for their children.

XI. Hospital and Alternate Care Facility Coordination (Treatment Centers)

A. Introduction

1. Preparedness planning is essential in the event of a large-scale infectious disease or other emergency event. Part of the planning includes strategies to deliver mass medications and/or supplies to all of the residents of Cumberland County within a 48-hour period based on a worst-case scenario, such as massive exposure to anthrax.
2. The goal is to dispense medications/supplies as rapidly as possible by means that help ensure the treatment of all citizens. To achieve this goal, the Cumberland County Department of Public Health has developed a two-tiered response system. The first tier focuses on getting medications to emergency responder organizations – Public Health and Safety Agencies, Critical Infrastructure, hospitals, other disaster organizations/ persons responsible for the county’s infrastructure. Dispensing medications to the first responder organizations will assist in maintaining the county’s critical infrastructure so that medications/supplies can be dispensed to the “general public.”
3. The second tier involves getting medications/supplies to the general public within a 48-hour, using the “pull” and “push” method. The CCDPH will open Points Of Dispensing (POD) sites to “pull” in the public for treatment with the goal of dispensing medications to 300-500 people per hour at each site.
4. The “push” method involves pushing medications/supplies to cooperating organizations where people are already congregated, such as nursing homes, hospitals, factories, etc. to allow dispensing to people who are unable or unlikely to use a POD. The medications and supplies will be provided at no charge except as indicated by North Carolina or CDC guidelines.
5. The CCDPH will employ a combination of both the “pull” and “push” method to ensure all of the county’s residents receive treatment in a timely efficient manner to achieve the goal of treating all citizens within the 48 hour timeframe.

B. Procedures to Procure Emergency Medical Material.

1. The Cumberland County Strategic National Stockpile Plan is an annex to the Cumberland County Emergency Operations Plan. A copy of the sign off of procedures to request emergency medical material is located in *Supporting Documents*.
2. A letter accompanying the plan explains the SNS Plan, the All-Hazards Plan and *Section III*, which is the process of procuring emergency medical materials.

C. Responsibility of Requesting Emergency Medical Material

1. Each facility will identify a person who will be authorized to request emergency medical materials.

2. 24/7 Contact information for each facilities authorized personnel is located in ***Attachment #7***.
3. Each facility will update the authorization person's contact information at least quarterly and notify the CCDPH of any changes. A facility will notify the CCDPH within 30 days if authorized personnel changes. The CCDPH will contact each facility to ensure contact information has been updated at least quarterly.

D. Procedures for Requesting Emergency Medical Materials

1. Each facility will refer to the Treatment Center Agreement – see SNS Plan Section _____ for procedures to obtain emergency medical materials.
2. Each facility will notify CCDPH of the need for medical materials.
3. The CCDPH will be responsible for notifying each facility of the designated distribution site and inform the facility that the person authorized to pick up the medical materials will need to bring:

Proof of identity – state or federally issued ID
(Drivers license, DMV ID card or passport) or agency picture ID

AND

The Authorization for Medicine/Medical Materials Letter

4. Each facility will ensure transportation is available to transport needed emergency medical materials.
5. Forms for requesting, receiving, storage and issuing medical supplies is located in ***Attachment #14***.

E. Training for Emergency Medical Materials

1. Each facility will receive training from CCDPH within 90 days of the signing Treatment Center Agreement.
2. The Public Health Preparedness Coordinator from CCDPH will be available to Treatment Centers to answer any questions or concerns.

F. Exercise the Emergency Medical Materials Procedures

1. The procedure for hospitals and facilities to request emergency medical materials will be reviewed and practiced during public health preparedness exercises at least annually.
2. Corrective Action Plans addressing any identified discrepancies will be completed within 30 days of the exercise and shared with all participants.
3. Facilities will receive the latest version of HSEEP to assist with constructing the After Action Reports and Corrective Action Plans for their exercises

XII. TRAINING, EXERCISE, AND EVALUATION

A. TRAINING

Training for partner agencies, staff and/or volunteers to operate a POD, the LRS or simply about the SNS plan in general will promote smoother operations. Training can take many forms including Just-In-Time Training (JITT), online or live lectures, self study materials, or exercises. There are many parts to the SNS plan, so training can be all encompassing or broken down by parts.

1. The TAR requires JIT training for PODs and LRSs. There are no specific requirements for JIT training. It should include an overview of the Following:
 - a) Orientation of their site and operation (LRS in *Attachment #5* and PODs in *Attachment #9*).
 - b) National Incident Management System (NIMS) and Incident Command System (ICS) Information about their section they will be working in which can be found in *Attachment #3*.
 - c) Requirements of the position in the Job Action Sheet (JAS).
2. JITT can be on paper, on video or presented by a manager at the operations site. JITT can be found in *Attachment #16*.
3. All positions should have a JAS to follow see *Attachment #10*. The JAS should include the following:
 - a) Position title
 - b) Position's supervisor
 - c) Job responsibilities and duties
 - d) Required skills, abilities or training to hold the position
 - e) Immediate Duties
 - f) Ongoing Duties
 - g) Extended Duties
4. Documentation of training is also required. Documentation should include a sign-in roster for the training (found in *Attachment #14*) and a copy of the training agenda and/or brochure. It may be helpful to maintain a document log to accompany your SNS plan to assist in the plan review process.
5. Each SNS plan should contain a SNS specific training plan. Optimally, the plan would be a projection into the future for trainings. Having a 3-5 year training plan will allow for improved planning. As with any plan, the training plan may change due to time and or funding constraints. Designing trainings and sharing them with partner agencies or neighboring health departments is also beneficial. It allows for sharing of ideas as well as funding. DSNS expects to find basic information on individual trainings in the SNS plan. The Exercise Program chart can be found in *Attachment #17*.

6. The CCDPH Public Health's Preparedness Coordinator is responsible for overseeing training, exercise and evaluations for the SNS Plan 24 Hour contact Information can be found in *Attachment #2*.

B. EXERCISING

1. As with training, it is important to design an exercise plan. The plan should also span 3-5 years. The exercise plan should include not only the exercise type and objectives, but also information about the After Action Review (AAR) and Corrective Action Plan (CAP) found in *Attachment #17*.
2. Exercises allow all or portions of the SNS plan to be tested and lessons to be learned. It also provides staff and volunteers a chance to practice and train for an actual event. Exercises should be planned and conducted in accordance with the Department of Homeland Security Exercise and Evaluation (HSEEP) guidance. Information on HSEEP can be found at <https://hseep.dhs.gov/> or in the *References Section*. The AAR format required by Agreement Addendum #514 can be found in *Attachment #17*.

C. EVALUATION

1. Evaluation will be conducted by using personnel not playing any other role in the exercise. Evaluation Worksheet can be found in *Attachment #17*.



Cumberland
County *North
Carolina*

Annex B PANDEMIC Influenza PLAN To ALL HAZARDS PLAN

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Cumberland County Change to Publication

Change Applies to: New Manual Revision Change

REQUESTER INFORMATION:

NAME: _____ PHONE# _____

DEPARTMENT: _____ TITLE: _____

Title: _____

CHANGES AND REVISIONS:

Purpose: _____

Reason: _____

(Include as much information as possible, including the reason for proposed revision. Indicate page, and paragraph number. Forward a redlined paper copy if necessary).

Continue on reverse side or add pages as needed

Authority	Name	Signature	Position	Date

INTRODUCTION

1. BACKGROUND

Influenza pandemics are a significant threat to public health as they have the potential to cause a great amount of illness and death, striking not only vulnerable populations but the young and healthy as well. Influenza pandemics, or worldwide epidemics, are regular events that have been occurring throughout history with varying degrees of impact. In the 20th century, three epidemics occurred: the 1918 Spanish Flu epidemic that resulted in more than 500,000 deaths in the United States, and over 20 million deaths worldwide; the 1957 Asian Flu epidemic; and the 1968 Hong Kong Flu epidemic. The emergence and spread of the highly pathogenic avian H5N1 influenza strain in other parts of the world has led many scientists and public health experts to believe another influenza epidemic is imminent.

20th Century Influenza Pandemics

Pandemics	Virus Strains	Worldwide Mortality	U.S. Mortality
1918: "Spanish Flu"	A(H1N1)	20-40 million deaths	500,000 - 675,000 deaths
1957: "Asian Flu"	A(H2N2)	1-4 million deaths	70,000 deaths
1968: "Hong Kong Flu"	A(H3N2)	1-4 million deaths	34,000 deaths

A. Influenza

Influenza is a highly contagious viral disease spread through direct contact or the inhalation of the virus in dispersed droplets from the coughing and sneezing of an infected individual. Signs and symptoms of uncomplicated influenza illness include fever, muscle aches, headache, malaise, nonproductive cough, sore throat and runny nose. Children often exhibit ear infections, nausea and vomiting as well. Illness typically resolves after several days. The incubation period, the time from exposure to onset of symptoms, is one to four days, with an average of two days. Adults are typically infectious from the day before symptoms begin until five days after onset of illness. Children and immunocompromised persons are infectious for longer periods.

Influenza can exacerbate underlying medical conditions, particularly pulmonary or cardiac disease, and can lead to secondary bacterial or viral pneumonia. The risk for complications, hospitalization and deaths from influenza is higher among older adults (65 years and older), young children and those persons with certain underlying health conditions.

B. Avian Influenza

Avian influenza refers to the influenza A viruses that circulate among birds. Wild birds, in particular certain species of waterfowl and shorebirds, are considered the natural reservoir for influenza A. Usually, avian influenza viruses exist in birds without causing significant illness or disease. These viruses can infect many different animals and they typically do not cause illness in humans. However, there have been documented cases where viruses do cross over from birds, particularly domesticated poultry, and infect humans. There is concern that, through a process of re-assortment, avian viruses can mix with human influenza viruses and result in a new, or novel, virus strain.

Avian viruses played a role in the last three influenza pandemics, and it is now known the virus responsible for the 1918 pandemic originated in birds. In 1997, the H5N1 influenza virus emerged in chickens in Hong Kong and has shown the ability to infect multiple species, including long-range migratory birds, chickens, pigs, cats and humans. Most of these cases are believed to be caused by exposure to infected poultry flocks. There has been, to date, no sustained human-to-human transmission.

C. Seasonal Influenza v. Pandemic Influenza

Seasonal influenza refers to the yearly influenza epidemics that occur in temperate regions, from December to March, which are caused by strains currently circulating worldwide. These viruses are spread widely among humans, are constantly changing, and cause a relatively mild respiratory illness among healthy people. These influenza viruses do, however, result in an average of 36,000 deaths per year in the United States, mainly in older persons, children, and persons with underlying health conditions.

Vaccination against influenza is the primary method of prevention of seasonal flu. A vaccine specific to the currently circulating strain is developed each year and is the most effective means of reducing the effects of seasonal influenza. Immunity develops from either having been infected with influenza or receiving the vaccine. Anti-viral drugs are also available for prophylaxis and treatment of seasonal influenza A infection. The extent these countermeasures will be available and effective against a new virus strain in a pandemic is unknown.

Pandemic influenza can occur when a new and highly contagious strain of influenza virus emerges that has the ability to infect humans and be passed easily from person-to-person. Because most or all of the world's population has not been exposed to the new virus strain, little or no immunity exists, and the rate of illness increases significantly over the expected level. The current concern for a pandemic arises from the widespread outbreak of H5N1 avian influenza in birds and the growing number of human cases.

Based on observations from previous pandemics, the Centers for Disease Control and Prevention (CDC) has estimated that the economic losses in the United States associated with the next pandemic will range from approximately \$71 billion to \$166 billion. The level of economic loss will depend on the attack rate of the virus and the resulting morbidity and mortality.

The impact of an influenza pandemic on the healthcare system could be devastating. It has been estimated that in the United States, a moderate pandemic could result in 20 to 47 million people becoming ill; 18 to 42 million outpatient visits; 314,000 to 734,000 hospitalizations; and 89,000 to 207,000 deaths. This potential for high levels of morbidity and mortality, coupled with the significant disruption to society, make planning for the next influenza pandemic imperative.

2. IMPACT OF A PANDEMIC ON UNITED STATES

The impact of a pandemic and the associated number of hospitalizations and deaths will depend on the virulence of the pandemic virus, which can vary considerably. Estimates differ about 10-fold between moderate and severe pandemics. Two scenarios are shown in the following chart, and are based on extrapolation of data from past pandemics in the United States. Note that these estimates do not include the potential impact of intervention not available during the 20th century pandemics.

POTENTIAL IMPACTS OF A FUTURE PANDEMIC		
Characteristic	Moderate (1958 and 1968-like)	Severe (1918-like)
Illness	90 Million (30%)	90 Million (30%)
Outpatient Medical Care	45 Million (50%)	45 Million (50%)
Hospitalization	865,000	9,900,000
ICU Care	128,750	1,485,000
Mechanical Ventilation	64,875	745,500
Deaths	209,000	1,903,000

<http://www.pandemicflu.gov/plan/pandplan.html#top>

3. IMPACT OF A PANDEMIC ON NORTH CAROLINA

Impact on North Carolina: The following table illustrates the impact of a moderate influenza pandemic on North Carolina. These estimates were obtained using Flu Aid 2.0 software available online at the National Vaccine Program website: <http://www2.cdc.gov/od/fluaid/default.htm>

Potential Impact on North Carolina

	Age group	Gross Attack Rates		
		20%	30%	50%
Deaths	0-19 years	49	73	121
	20-64 years	2,169	3,254	5,423
	65+ years	2,223	3,335	5,558
	Total deaths	4,441	6,662	11,102
Hospitalizations	0-19 years	868	1,302	2,171
	20-64 years	12,815	19,222	32,037
	65+ years	5,927	8,891	14,818
	Total hospitalizations	19,610	29,415	49,026
Outpatient visits	0-19 years	274,976	412,464	687,440
	20-64 years	534,942	802,413	1,337,354
	65+ years	105,245	157,868	263,113
	Total outpatient visits	915,163	1,372,745	2,287,907

Calculated using North Carolina total population of 8,540,426

Source: 2004 Census Data obtained from the NC State Demographics website: http://demog.state.nc.us/frame_start.html

The Flu Aid software has population data available for each state; however, it is based on 1999 US Bureau of the Census data when North Carolina's population was just below 7.5 million people. The estimates shown in the table below are based on a North Carolina population of just over 8.5 million people. The more recent North Carolina census data were entered into the Flu Aid 2.0 software to determine the number of deaths, hospitalizations, and outpatient visits.

These estimates represent the most likely number of cases by varying attack rates of the virus. Minimum and maximum number of deaths, hospitalizations, and outpatient visits for each age group can also be estimated with the Flu Aid 2.0 software.

4. IMPACT OF A PANDEMIC ON CUMBERLAND COUNTY

The following table depicts potential impacts of a Pandemic Influenza on Cumberland County using Flu Aid software. Because much of what will define the impact of the next Pandemic is unknown, the numbers generated through Flu Aid should not be considered predictions of what will actually occur in Cumberland County during a Pandemic. Rather, they should be treated as estimates of what could happen. The scope, scale, and magnitude of the outbreak, as well as the populations hardest hit will depend on the epidemiology of the novel virus strain and that will only be known at the time of the event. Numbers based on attack rate of 25% lasting 8 weeks. Also does not take into account any other hospital operations already ongoing.

Potential Impact on Cumberland County

Pandemic Influenza Impact / Weeks		1	2	3	4	5	6	7	8	9	10
Hospital Admission	Weekly Admissions	56	93	139	176	176	139	93	56		
	Peak Admissions/Day				27	27					
Hospital Capacity	# of Influenza Patients in Hospital	41	68	102	130	134	118	90	59		
	% of Hospital Capacity Needed	6%	10%	16%	20%	20%	18%	14%	9%		
ICU Capacity	# of Influenza Patients in ICU	8	18	27	36	39	38	30	21		
	% of ICU Capacity Needed	11%	24%	37%	49%	53%	52%	41%	28%		
Ventilator Capacity	# of Influenza Patients on Ventilators	4	9	14	18	19	19	15	10		
	% Usage of Ventilators	4%	8%	12%	16%	18%	17%	14%	9%		
Deaths	# of Deaths from Influenza			10	17	25	32	32	25	17	10
	# of Influenza Deaths in Hospital			7	12	18	22	22	18	12	7

5. PHASES OF PANDEMIC INFLUENZA

The World Health Organization (WHO) has defined phases of pandemic influenza that “address the public health risks of influenza infection in animals, link phase changes directly with changes in public health response, and focus on early events during a ‘pandemic alert’ period when rapid coordinated global and national actions might help to contain or delay the spread of a new human influenza strain.” This classification system is comprised of six phases of increasing public health risk associated with the emergence and spread of a new influenza virus subtype that may lead to a pandemic.

The Director General of WHO formally declares the current global pandemic phases and adjusts the phase level to correspond with pandemic conditions around the world for each phase, the global influenza preparedness plan identifies response measures WHO will take, and recommends actions that countries around the world should implement.

The Cumberland County Pandemic Influenza Response Plan utilizes this classification system to structure response activities. The six phases are outlined in the chart on the following page. These six phases are used throughout the document to summarize the County’s overall response as well as specifics of the Public Health response during each of the phases. Therefore, the chart is color coded, as diagrammed below, to assist the reader in reviewing the various tables that summarize the activities within the document.

World Health Organization, 2005

WHO Pandemic Phases and Planning Goals	
PHASES	OVERARCHING PUBLIC HEALTH GOALS
<p>Interpandemic Period</p> <p>Phase 1. No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused infection may be present in animals. If present in animals, the risk of human infection or disease is considered to be low.</p> <p>Phase 2. No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk of human disease.</p>	<p>Strengthen influenza pandemic preparedness at the global, regional, national, and sub national levels.</p> <p>Minimize the risk of transmission to humans; detect and report such transmission rapidly if it occurs.</p>
<p>Pandemic Alert Period</p> <p>Phase 3 - Human infection(s) are occurring with a new subtype, but no human-to-human spread, or at most rare instances of spread to a close contact.</p>	<p>Ensure rapid characterization of the new virus subtype and early detection, notification and response to additional cases.</p>
<p>Phase 4. Small cluster(s) with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans.</p>	<p>Contain the new virus within limited foci or delay spread to gain time to implement preparedness measures, including vaccine development.</p>
<p>Phase 5. Larger cluster(s) but human-to-human spread still localized, suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk).</p>	<p>Maximize efforts to contain or delay spread, to possibly avert a pandemic and to gain time to implement pandemic response measures.</p>
<p>Pandemic Period</p> <p>Phase 6. Pandemic: increased and sustained transmission in the general population.</p>	<p>Minimize the impact of the pandemic by implementing response measures including social distancing.</p>

*Second or subsequent pandemic waves may follow the initial wave, usually within three to nine months.

Source: http://www.who.int/csr/resources/publications/influenza/GIP_2005_5Eweb.pdf

ACRONYMS AND ABBREVIATIONS USED IN PANDEMIC INFLUENZA RESPONSE PLAN:

Acronym	Meaning
APHA	American Public Health Association
CART	County Animal Response Team
CCHD	Cumberland County Health Department
ACF	Alternate Care Facility
ACIP	Advisory Committee on Immunization Practices
CD	Communicable Disease
CDC	Centers for Disease Control and Prevention
CFVMC	Cape Fear Valley Medical Center
CHC	Community Health Center
COOP	Business Continuity of Operation Plan
DGMQ	Division of Global Migration and Quarantine (CDC)
DMORT	Federal Disaster Mortuary Team
DPH	Division of Public Health (NC)
DSS	Division of Social Services (NC)
ECS	Emergency Communication System (CDC)
ED	Emergency Department
EMA	Emergency Management Agency
EMS	Emergency Medical Services
EOC	Emergency Operations Center (NC)
EOP	Emergency Operation Plan
FDA	Food and Drug Administration
FDMANC	Funeral Directors and Morticians Association of North Carolina
GETS	Government Emergency Telecommunications Service
GCDC	General Communicable Disease Control Branch
HAN	Health Alert Network (NC)
HEICS	Hospital Emergency Incident Command System
HEPA	Portable High Efficiency Positive Airflow
HCW	Health Care Worker
HHS	Department of Health and Human Services
HRSA	Health Resources and Services Administration
IC	Incident Command
ICCE Net	Intrastate Communications Enhancement Network
ICP	Infection Control Practitioner
ICS	Incident Command System
ICU	Intensive Care Unit
ILI	Influenza-like illness
IND	Investigational New Drug
JIC	Joint Information Center
LE	Law Enforcement
LHD	Local Health Department
LHIT	Local Health Information Team
NAHLN	National Animal Health Laboratory Network
NAVC	National Vaccine Advisory Committee
NCAC	North Carolina Administrative Code
NCBFS	North Carolina Board of Funeral Services
NCDETECT	North Carolina Disease Event Tracking and Epidemiologic Collection Tool
NCFDA	North Carolina Funeral Directors Association

NCEM	North Carolina Emergency Management
NCGS	North Carolina General Statutes
NCHA	North Carolina Hospital Association
NCHES	North Carolina Hospital Emergency Surveillance System
NCIR	North Carolina Immunization Registry
NCOEMS	North Carolina Office of Emergency Medical Services
NCPH	North Carolina Public Health
NCSPICE	North Carolina Statewide Program for Infection Control and Epidemiology
NCVDL	North Carolina Veterinary Diagnostic Laboratory
NDMS	National Disaster Medical System
NEDSS	National Electronic Disease Surveillance System
NIMS	National Incident Management System
NPI	Non Pharmaceutical Interventions
NVAC	National Vaccination Advisory Committee
OEMS	Office of Emergency Management Services (NC)
PAO	Public Affairs Office (DHHS)
PHCC	Public Health Coordinating Center (DPH)
PHE	Public Health Epidemiologist
PHIN	Public Health Information Network
PHP&R	Public Health Preparedness and Response
PHRST	Public Health Regional Surveillance Team
PHT	Public Health Team
PIO	Public Information Officer
POD	Point of Dispensing
PPE	Personal Protective Equipment
PWC	Public Works Commission
Q&I	Quarantine and Isolation
SARS	Severe Acute Respiratory Syndrome
SDN	Secure Data Network
SERT	State Emergency Response Team (NC)
SHD	State Health Director
SLPH	State Laboratory of Public Health (NC)
SMART	State Medical Asset/Resource Tracking Tool
SNS	Strategic National Stockpile
SMAT	State Medical Assistance Team
SPN	Sentinel Provider Network
UC	Unified Command
USPHS	United States Public Health Service
VAERS	Vaccine Adverse Events Reporting System
VALs	Vaccine Administration Logs
VMI	Vendor Managed Inventory
WHO	World Health Organization

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CUMBERLAND COUNTY BASIC PANDEMIC INFLUENZA PLAN

I. INTRODUCTION

Pandemic Influenza has the capacity to overwhelm both Public Health and Emergency Response Systems. In order to plan for a potential pandemic, Cumberland County Health Department (CCHD), organized Public Health staff and key partners that would be involved in pandemic response to assist with the development of this plan. This plan is compiled from input from that group meetings, as well as other sources. *A list of the Pandemic Planning Committee can be found in Attachment 1*

1. Purpose:

The purpose of this plan is to provide guidance to Public Health, Municipal and county partners who will be involved in preparedness and response to an influenza pandemic. This plan outlines actions to be taken by CCHD and its partners who may be tasked with response to an Influenza Pandemic. It may be used to prepare the public and the special needs population prior to the occurrence of a Pandemic.

2. Goals:

The goals of the plan are:

- To reduce the impact of a pandemic and minimize illness, suffering, and loss of life.
- To promote early detection of a novel strain of influenza.
- To organize and coordinate response by CCHD and its partners.
- To minimize the economic loss, psychological toll, and social disruption of a pandemic.
- To promote preservation and continuity of essential government operations.

3. Scope:

The CCHD Pandemic Influenza Plan is designed to address the threat of an Influenza Pandemic within the borders of Cumberland County. It will be used to help the county prepare to respond to an Influenza Pandemic. It may also be used as a reference for outbreaks of emerging infectious disease with epidemic or pandemic potential.

A. Relationship to the County Emergency Operations Plan (EOP)

- Under the Cumberland County All-Hazard EOP, The CCHD (Health Director) has the responsibility for development of plans and operating guidelines for identification, mitigation, and response to public health hazards. While this plan supports the County EOP by fulfilling those obligations as relates to a Pandemic Influenza, it is primary a public health document, which focuses on duties of Public Health during an Influenza Pandemic.
- Since pandemic response will inevitable be multi agency and multidisciplinary, this plan includes roles and responsibilities of other key partners where it is anticipated that there will be points of coordination or overlap.

B. Agency Specific Pandemic Plans

- All pandemic responders, including the medical community and hospital, other Municipal and County partners, local human service and non-profit organizations, and private business and industry are expected to develop their own plans and operating guidelines for response to an Influenza Pandemic. They are also responsible for incorporating pandemic planning into their Business Continuity of Operations Plan (COOP).

4. Situation:

The Situation is located in the Cumberland County, North Carolina Emergency Operations Plan dated February, 23 2006.

5. Assumptions:

- A pandemic will be global, prolonged and could have several waves (lasting 2-3 months each).
- A pandemic will be caused by a novel strain of influenza capable of efficient and sustained person-to-person transmission. Human beings will have little or no immunity and susceptibility to the virus will be universal.
- The typical incubation period for influenza is approximately 1-4 days. Persons who become ill can shed virus and transmit infection prior to the onset of illness. Viral shedding and the risk of transmission are typical greatest during the first two days of illness. Children usually shed the greatest amount of virus therefore are likely to post the greatest risk of transmission. On average, infected persons will transmit infection to approximately two other people.
- Response to a pandemic will be local. Significant mutual aid from Federal or State resource will not be available or will be very limited due to the number of simultaneous outbreaks. Cumberland County will have to rely on local resources to respond to and recover from Influenza Pandemic.
- Core prevention and control measures will not be available or will be limited in supply. Non Pharmaceutical Interventions (NPI) such as social distancing, personal hygiene, and use of quarantine and isolation will be the primary disease control measures.
- Some persons will be unable or willing to comply with isolation directives. For others, social distancing strategies may be less feasible (for example homeless populations who live in congregated settings). It will be important to develop and disseminate strategies for infection control appropriate for these environment and population.
- It could take up to 4 – 6 months before a vaccine is developed for a newly identified Strain of influenza. Once a new vaccine is available, supplies will be limited and reserved for First Responders and other priority populations.
- Antiviral drugs will also be in short supply and will be primarily used for treatment of infected persons. If supplies are available, limited amounts may also be used to provide preventable or post exposure prophylaxis for First Responders.

- Risk groups for severe and fatal infection cannot be predicted with certainty. Populations designated as priority for receipt of vaccines and antiviral drugs could change depending on the epidemiology of the virus. The CDC will update guidelines for priority populations for vaccines and antivirals at the time of the event.
- Rates of absenteeism may be high during a pandemic and will vary depending on the severity of the outbreak. In a severe pandemic, absenteeism (attributable to illness, the need to care for ill family members and fear of infection) may reach 40% during the peak weeks of a community outbreak, with lower rates of absenteeism during the weeks before and after the peak. Certain public health measures (closing schools, quarantine household contacts of infected individuals, “snow days”) are likely to increase rates of absenteeism.
- The clinical disease attack rate will likely be 30% or higher in the overall population during the pandemic. Of those who become ill with influenza, 50% historically have sought outpatient medical care. With the availability of effective antiviral drugs for treatment, this proportion may be higher in the next pandemic.
- Local healthcare systems have little surge capacity and will be severely taxed during a pandemic. The anticipated large numbers of ill person and resulting complications that require hospitalization and/or critical care could overwhelm local hospitals and healthcare providers.
- There may be critical shortages of staffed hospital beds, mechanical ventilators, morgue capacity (including temporary holding sites with refrigeration for storage of bodies), and other resources. Medications and medical supplies may also be in short supply. There will be tremendous demand for urgent care services.
- Emergency Medical Services (EMS) responders will face extremely high call volumes during peak pandemic periods, and they could be operating with 25-35% reduction in available staff.
- The demand for home care and social services will increase dramatically.
- The number of deaths could overwhelm the Medical Examiner’s Office, hospital morgues, and local funeral homes.
- Infection control measures specific to management of influenza patients will need to be developed and implemented at health care facilities, outpatient care settings and long-term care facilities.
- A pandemic will pose significant threats to human infrastructure responsible for critical community services (in health and non-health sectors) due to widespread absenteeism. Disruption of key supply chains will likely occur, especially with products or supplies dependent on offshore production or distribution.
- The general public, healthcare system, response agencies, and elected leaders will need continuous updates on the status of the pandemic outbreak, impacts on critical services, and the steps the county is taking to address the pandemic. The medical community, response partners, and the public will also need to be informed about how to protect themselves as the pandemic progresses.

- Due to regional mobility of the county population, it will be important to coordinate pandemic response with other counties in the Public Health Regional Surveillance Team #3 (PHRST3) Region.

II. COMMAND AND CONTROL:

1. Command

A. National Incident Management System (NIMS) and Incident Command System (ICS)

- Command and control of disaster operations during an influenza pandemic will be conducted according to NIMS. Chain of command will be organized under ICS. As specified under NIMS, a Joint Information System or Joint Information Center (JIC) will be used to coordinate the release of information among all involved agencies and jurisdictions.

B. Overall Direction and Control – County

- Primary response to an influenza pandemic will be at the local level. According to the Cumberland County All-Hazard Emergency Operations Plan (EOP), overall strategy and policy of emergency activities in a crisis situation will be vested with the Emergency Management Director, or designee. The Emergency Management Director will authorize activation of the County Emergency Operation Center (EOC) once a pandemic has evolved to the point that central coordination is needed.
- The Cumberland County EOC, Located at 131 Dick St. 1st floor, Fayetteville, NC 28301, will be used to organize pandemic response among all participating organizations and across local jurisdictions. Resource management and requests for Mutual Aid (state, regional or federal resources) will be managed through the EOC. The County EOC will maintain communications with the State EOC, the Public Health Command Center, and surrounding Counties' EOC's as necessary.
- Municipalities, Hospitals, and County and Municipal Departments may activate their own emergency operations centers concurrently with County EOC. All local Emergency Operations Centers will communicate and coordinate through the County EOC.
- The authority to issue a local disaster or emergency proclamation and enact ordinances to exercise controls during the state of emergency resides with local elected officials by jurisdiction (County Commissioners, Municipal Mayors or their designees).

C. Public Health Command – County Emergency Operations Center (EOC) is open

- The Cumberland County Public Health Director coordinates public health response during emergency and disaster situations in the County (per the County EOP), which includes pandemic influenza. Once the County EOC has been activated, the Public Health Director (or designee) will report to the County EOC to direct Emergency Public Health Operations for a pandemic, including the set-up and operation of vaccination clinics for distribution of

vaccines (*Located in Attachment 6 of the SNS Plan in Annex A of the - All hazard Response Plan*).

- Depending on the situation, the Public Health Director (or designee) may be the Incident Commander (IC), or assume the role of Public Health Commander under Unified Command (UC). With UC, each agency in the UC structure designates an IC who will jointly set incident objectives with other primary agencies.

D. Public Health Command – CCHD Health Surveillance Center

- Prior to the activation of the County EOC, the Public Health Director will be the designated IC for pandemic response. This would apply during Pandemic Alert Phases, or during non-acute phases of a pandemic (between waves of a pandemic) when response is limited to public health, and central countywide coordination is not needed.
- The Health Director will direct pandemic response (when the County EOC is not activated) from the Health Surveillance Center located in the CCHD Surveillance Room on the third floor, 227 Fountainhead Lane, Fayetteville NC 28301. The Alternate will be in the Spring Lake Family Resource Center.
- CCHD will coordinate communications with County EOC and the State Public Health Command Center (PHCC) using the Health Alert Network (HAN), WebEOC, phones (landline and cell), internet, Fax and if needed by radio (Kenwood Pack Radio).
- The decision to activate the Health Surveillance Center for an Influenza Pandemic will be made by the Public Health Director, in consultation with the CCHD EPI Team. The Health Surveillance Center may remain open after the activation of the County EOC to direct pandemic response activities specific to public health. The Assistant Health Director will oversee the set up of the Health Surveillance Center.
- *The Command structure for the CCHD can be found in Attachment #3*

E. Command and Control – State

- Pandemic response at the state level will be organized as outlined in part A: Command, Control, and Management of the NC Pandemic Influenza Plan.
- The NC Public Health Coordinating Center (PHCC) will be used to coordinate state public health response during an influenza pandemic. In the event that the state EOC is activated, the PHCC will serve in a consulting capacity, with the state EOC leading the emergency response.
- The authority for declaration of a public health emergency and for activating the State Pandemic Influenza Plan resides with the State Health Director, State Epidemiology Section Chief, State Epidemiologist, and Public Health Preparedness Coordinator (PHP&R).
- The authority for a statewide Declaration of Emergency or Disaster for an Influenza pandemic resides with the Governor (or designee).

2. Legal Authority for Pandemic Response

Isolation and Quarantine Authority		
Official with Authority	Geographic Area	Communicable Disease Covered by Authority
Local Health Director NC GS 130A-145 Delegate authority under NC GS 130A-6	Areas served by local health department only	Any disease for which Q&I is a standard disease control measure. Use of Q&I can be no more restrictive than measures specified in NC Administrative Code, and has to be consistent with CDC Guidelines for disease control outlined in the American Public Health Association (APHA) Communicable Disease Control Manual.
State Health Director NC GS 130A-145	Statewide	Same as Above
CDC – Surgeon General US Code, Title 42, 264-272	Nationwide, Borders, entry Ports and between States	Those covered in Executive Order 13295
Authorities for Social Distancing, Cancellations ad Closures		
Governor NC GS 14-288.15 NC GS 288.19 NC GS 166A-5 NC GS 166A-6	Statewide	Social distancing and other measures may be implemented by the governor to maintain order during a declaration of a state of emergency or disaster anywhere in the state
Local Elected Officials: County (Chair, County Commissioners) NC GS 14-288.13 NC GS 153A-121 NC GS 153A-122	Unincorporated area of the Country(unless a Municipality elects to come under the coverage of a County Ordinance)	Social distancing and other measures may be implemented to maintain order during a county declaration of a state of emergency or disaster.
Local Elected Officials: Municipal (Mayors) NC GS 14-288.134 NC GS 160A-175 NC GS 160A-174	Within the borders of the city or town	Social distancing and other measures may be implemented to maintain order during a Municipal declaration of a state of emergency or disaster.
Local Board of Education NC GS 115C-84.2 NC GS 115C-47	Public schools in the school system governed by local Board of Education	Local Boards of education are empowered to set the school calendar under these statutes. However, if school buildings are owned by city or county, then elected officials can also close schools during a declared state of emergency. (Does not apply if the local board of education owns the school property.

For more information on North Carolina General Statute <http://www.ncga.state.nc.us/gascripts/Statutes/Statutes.asp>

Copy of Isolation and Quarantine Orders found in Attachment #4

3. Roles and Responsibilities for Pandemic Response

A. World Health Organization (WHO)

- Monitors global pandemic conditions and provide information updates.

- Declares the global pandemic phase and adjusts the phase based on current outbreak status and conditions.

B. Federal Government

- **U.S. Department of Health and Human Services (HHS)**
 - Provides overall guidance on pandemic influenza planning within the U.S. and coordinates the national response to an influenza pandemic.
 - Provides guidance and tools to promote pandemic preparedness, planning, and coordination from states.
 - Provides guidance to state and local health departments with regard to designation of priority populations for limited supplies of antiviral medication and vaccine.
- **Centers for Disease Control and Prevention (CDC)**
 - Monitors the nation-wide impact of a pandemic and issues recommendations and guidance to state and local health departments
 - Coordinates national disease surveillance for pandemic influenza. Investigates pandemic outbreaks, defines the epidemiology and issues the case definition for the novel strain of influenza.
 - Serves as liaison to the WHO.
 - Develops reference strains for vaccines and conduct research to understand transmission and pathogenesis of novel influenza virus with pandemic potential.
 - Evaluates disease control and prevention strategies for the circulating strain of pandemic influenza. Modifies recommendations to state and local public health as needed.
 - Promotes vaccine research and development. Devises a suitable liability program for vaccine manufacturers and persons administering.
 - Issue national guidelines for pre-pandemic and pandemic vaccine distribution, including guidelines of priority populations. Maintains the National Vaccine Adverse Events Report System (VAERS).
 - Develops a national system for antiviral distribution, and designates priority populations for treatment and chemoprophylaxis
 - Coordinates the stockpiling of antiviral drugs and other essential materials within the Strategic National Stockpile.

- Implements controls for entry to the U.S. and U.S. travel restrictions. Issue travel alerts and advisories
- Produces and disseminates via the Internet information templates in multiple languages, which can be modified and /or adapted at the state and local level.
 - Fact Sheets on influenza, influenza vaccine, and antiviral medications.
 - Guidelines for triage and treatment of influenza patients in outpatient, inpatient and non-traditional medical care settings.
 - Guidelines for state and local government for development and implementation of mass vaccination programs.

C. North Carolina Public Health (NCPH)

The NC Division of Public Health (NCPH) and the Office of Public Health Preparedness and Response (PHP&R) are responsible for coordination of statewide planning, and direction of statewide preparedness, response, and recovery actions for pandemic influenza. This includes:

- Statewide surveillance and monitoring of:
 - The NC Sentinel Provider Network (71 sites throughout the state)
 - Syndromic surveillance for influenza-like illness through hospital Emergency Rooms
 - Participation in the 122 Cities Mortality Reporting System (Charlotte is the NC sites)
 - Influenza-associated pediatric mortality reports
 - State Epidemiologist Report
 - Virologic surveillance (to detect new strains) through the State Laboratory of Public Health (SLPH)
- Disseminates statewide data and updates, and coordinates epidemiological data submission to CDC.
- Conducts laboratory testing through the SLPH.
- Provides guidance to the Governor and Local Health Departments (LHD) on disease control, containment strategies, and at risk and priority populations for receipt of vaccines and antivirals.
- Identifies and coordinates state recourses to support local health and medical response. The state will request federal assistance to support local health, medical, and public health response.

- Provides risk and public information communication materials, guidance, and support to Local Health Departments for pandemic planning, preparedness, and response.
- For more information, see the NCPH Pandemic Influenza Plan at: http://www.epi.state.nc.us/epi/gcdc/pandemic/AppendixA3_2007.pdf

D. Cumberland County Health Department (CCHD)

- **The role of the CCHD will be to coordinate public health preparedness and response at the County level. CCHD:**
 - Facilities countywide planning for influenza pandemic; and serve as a resource to local health and medical providers, first responders, community leaders, the business community, social service, and non-profit organizations for pandemic preparedness planning.
 - Builds local partnerships that encourage integration of public health emergency planning with local County Emergency Operations Plan (EOP).
 - Provides education to the public, and local response partners and elected officials about influenza pandemics, expected impacts and consequences, and preventive measures. Promote actions for individuals and families to prepare for a pandemic using materials developed by NCPH.
 - Coordinates and conducts countywide surveillance to identify the initial spread of a pandemic strain into the County. Monitors the spread of pandemic influenza, provides counts for numbers of cases and deaths, and tracks the impact on the County. Maintains communications with State and federal agencies including those responsible for surveillance for animals, poultry and wildlife.
 - Provides ongoing technical support to the health care system regarding current surveillance guidelines, recommendations for clinical case management, infection control measures, and laboratory testing.
 - Provide guidance to the hospital, EMS, and other healthcare providers whose workers have direct contact with influenza patients, regarding options for managing employees who are exposed or who become ill with influenza.
 - Develops local guidance for use of antivirals and for distribution of pre-pandemic and pandemic influenza vaccines; drawing on national protocols and guidance issued by NCPH. CCHD develops systems for estimating the size of these populations, and disseminates these to the hospital and medical providers, and updates them as appropriate.
 - Activates the County SNS Plan to receive vaccines and antivirals from the State or SNS, VMI and to vaccinate priority populations and possibly the public.

- In consultation with NCPH, designs non-medical disease control strategies appropriate to the number of cases, rate of disease spread and severity of illness. Coordinates with local elected officials on the need to declare local states of emergency and implement social distancing measures. Writes orders for quarantine and isolation as needed.

- **Public Health Director**

- Activates the CCHD Pandemic Response Plan and the Public Health Response Center. Requests activation of the County EOC and /or JIC as needed for pandemic influenza response.
- Coordinates with the Emergency Management Director, the Board of Health, and local officials with regard to response priorities, and the potential economic and social impacts of the pandemic and associated disease control measures.
- Communicates with the Emergency Management Director, local officials and the Local Board of Education on recommendation of social distancing, snow days, closures, or other disease control measures.
- Designates responsibilities to CCHD staff for pandemic planning and response. Assigns personnel to County EOC, Public Health Command Center, and JIC as needed.
- Ensure business continuity of critical public health functions during all phases of the pandemic. Delineates the line of succession for key personnel and directs when and how public health services will be suspended or reduced so they can be reassigned to pandemic response. Request all departments identify staff that can be cross-trained to perform pandemic response function.
- Based on recommendations from the State Health Director, initiates isolation of sick persons and quarantine of exposed individuals to control the spread of infection. Writes orders for mandatory isolation and quarantine as necessary. Coordinates with local law enforcement for enforcement of Q&I orders for non-compliant persons.
- Coordinates with the County EOC and local social services agencies for provision of support and essential services to persons in quarantine.

- **CCHD Public Information Officer**

- Activates the CCHD risk communication Plan and coordinates with the County PIO, and the Local Health Information Team (LHIT) to:
 - Provide accurate, timely, and consistent information to the public regarding preparations for a pandemic, the impacts of the outbreak, local response actions, and disease control recommendations.
 - Educate the public on how they can protect themselves from infection or from transmitting the virus to others if they become sick.

- Provide relevant pandemic information to the healthcare system.
 - Develop list of most likely asked questions and the answers for Just in Time Training for information line and call center staff.
 - Pre-identify and contact technical experts for media presentations, and for preparation and content review of material released to the media and public.
 - Advises the Health Director and Preparedness Coordinator on need to open the CCHD Information line. Coordinates with the County PIO and Emergency Services for activation of the County public information line or call center to provide health information to the public, support persons in Q&I, and/or identify un-met health and social service needs. Advise the Emergency Management Director of the need to implement the County automated calling system to monitor large numbers of persons in Q & I.
- **Communicable Disease and Public Health Response Team (EPI Team)**
 - Coordinates surveillance and disease investigation, including implementation of ongoing influenza surveillance, planning for pandemic epidemiological investigation and facilitation of specimen testing with the SLPH.
 - Implements active surveillance to detect the initial outbreak and the onset subsequent pandemic waves.
 - Provides ongoing information on the epidemiology of the pandemic virus, the impact on County, and the effectiveness of disease control measures to limit the spread of infection.
 - Communicates with traditional and non-traditional surveillance partners to ensure a system is in place to receive disease reports. Communicate with the preparedness Coordinator to ensure adequate levels of trained staff are available to accommodate increased reporting and surveillance during a public health emergency.
 - Maintains ongoing communication with hospitals, public health, and medical professionals in Cumberland and adjacent counties. This may be expanded to include animal control, Cooperative Extension and/or veterinarians if the influenza virus can infect animals or birds.
 - Monitors the NC Health Alert Network (HAN) and EpiX Information. Maintains ongoing communication with appropriate divisions within NCPH, CDC, PHRST #3, and NC Department of Agriculture and Consumer Services Regional Veterinarians as appropriate.
 - Communicable disease nurses will receive disease reports on novel cases of influenza, institute disease investigations and trace sources and contacts.

- Drafts guidance for the healthcare system on surveillance, epidemiology of the pandemic, and disease investigation. Disseminates case definitions, recommendations for laboratory testing, and promotes infection control practices for to healthcare providers and facilities.
- Advise Health Director on the need for isolation and quarantine orders, recommendations for graded implementation of social distancing, and implementation of voluntary quarantine and isolation.
- Designs infection control plans for CCHD to protect staff and clients. Recommends Personal Protective Equipment (PPE) for CCHD personnel according to risk of exposure.
- Assist the County and CCHD PIO with the development of public health information and risk communications message to the public.
- Develops protocols for prioritizing limited supplies of antiviral medications and vaccines, based on County response needs and national guidelines.
- Works with clinic staff to open vaccination clinics for pre-pandemic and pandemic vaccine. Identifies priority populations for vaccines based on national guidelines and local response needs.

- **Preparedness Coordinator**

- The CCHD Preparedness Coordinator will direct enhanced surveillance activities during an influenza pandemic. Assistance will be provided by other CCHD staff.
- In conjunction with clinical staff, provides information and training to the public health staff, healthcare providers and support organizations on appropriate PPE for pandemic response. Ensures that CCHD personnel with a need to wear N95 respirators have been fit tested.
- Maintains updated contact lists for notification of community partners, medical groups to update the pandemic plan and revise pandemic response activities as needed.
- Coordinates countywide pandemic planning, education and outreach efforts with response organizations, the hospital, schools, the business community, and community based organization.
- Arranges for or conducts training, orientations, and drills to test readiness of pandemic response. Evaluates exercises and provides follow-up actions.
- Provides Just-in-Time Training for staff assigned to receive increased disease and fatality reports.

- Complies and updates a library of public health information and risk communication resources for pandemic influenza from CDC, American Red Cross, NCPH and other sources.
 - Works with PHRST #3 to develop plans for receiving and redistributing antivirals from the State or SNS to healthcare providers.
 - Notifies County Emergency Services and Community support agencies of the need to activate the County Receiving Site to receive vaccines and/or antivirals from the SNS or the State.
 - Contacts business and industry and distribute information and resources to assist them with the development of a pandemic specific Continuity of Operations Plan (COOP).
- **Clinical Staff**
 - Coordinates vaccination clinics for pre-pandemic and pandemic vaccines according to protocols outlined in the County SNS Plan.
 - Implements infection control plans for CCHD to protect staff and clients. Develops and maintains an inventory of supplies for protection of health department staff during a pandemic.
- **Animal Control**
 - Coordinates pandemic planning and response for domestic populations and pet owners.
 - Assists with surveillance for animal influenza viruses. Maintains contact with the NC Zoological Park, NC department of Agriculture and Consumer Services, Office of the State Veterinarian, and NC Division of Fish and Wildlife for information on zoonotic influenza viruses and their potential impact on the County. Communicates with the County Cooperative Extension Agriculture Agent regarding disease surveillance for livestock or poultry when zoonotic influenza is involved.
 - Maintains updated contact lists of animal control personnel, veterinarian, animal welfare organizations, kennels, boarding facilities and others who would need to be notified when a zoonotic influenza virus has the potential to spread into domestic animal populations.
 - Supplies information to the public, pet owner's veterinarians, animal welfare organizations and the pet industry regarding health recommendations and protective measures for people and animals during a zoonotic influenza outbreak. Coordinate with the County JIC, County and CCHD PIO as needed.
 - Maintains agreements and recruit volunteers for the County Animal Response Team (CART). Updates, as needed the County CART Plan. Notifies the CART Team when their assistance is needed with an animal emergency.

- Serve as a technological advisor to CCHD PIO, County PIO and local decision makers for potential hazards associated with zoonotic influenza that affects domestic animals and pets. Assist county and/or municipal agencies with establishing priorities for local response.
- Should depopulation of domestic animals become necessary to control the spread of disease, Animal Control will assist with euthanasia and disposal of remains of infected animals.
- Issue guidelines for protective measures for pet owners and for control of zoonotic influenza in domestic pets.

E. Cumberland County Emergency Management

- Oversees setup and operation of the County EOC to coordinate countywide response among all involved agencies and jurisdictions. Notifies Command and General Staff of EOC activation and request representation from response agencies as needed.
- Designs alternate means to coordinate countywide response activities when high rates of absenteeism or the need to control infection via social distancing prohibits continuous EOC operations. This could include use of conference calls, internet, or if available, WebEOC.
- Activates the County JIC as needed.
- Maintains communication with NC Emergency Management (NCEM), State EOC, and the Area Emergency Management Coordinator by way of phone, fax, radio, internet and or WebEOC.
- Activates quarantine shelters per County All-hazards EOP. Notifies DSS and CCHD to assist.
- Facilitates communications between Municipalities, the County EOC, Local Boards of Education and CCHD regarding the need to implement social distancing measures.
- Coordinates with the County Medical Examiner and State Medical Examiner's Office regarding establishment of an adequate morgue system for pandemic fatalities. Activates the mass fatality plan and locates resources and equipment needed to provide temporary storage of remains as needed.
- Notifies Critical Incident Stress Management Teams to assist emergency workers, their families, and the public.
- Establishes a local information hotline and develops a plan to staff the call center. Coordinates with CCHD to provide training and resource materials to persons staffing these lines.
- Activates the County automated Calling System for monitoring of people in quarantine and isolation at the request of CCHD.

- Coordinates with CCHD and DSS for Vulnerable Populations Planning for the County. Maintains resource lists and sets up a triage system through the County EOC to ensure persons special medical needs are met. This includes pre-event registration, transportation and emergency sheltering.

F. County Public Information Officer (PIO)

- An Influenza Pandemic has the potential to cause widespread fear among the public. Response involves a variety of agencies at the local, state and regional level, and will require an integrated public information system. The County PIO (or the Health Director) will request that the Emergency Management Director activate the County JIC as needed. The County PIO may also request that the Emergency Management Director open a media area in an appropriate location.
- Communicates and coordinates with the PIO and Public Affairs Officers from all involved local, state, federal agencies.
- Coordinates information released to the media and public, including press releases, informational sheets, press briefings and radio or television interviews. Provides updated information on a regular basis. Ensure that Public Information materials are available in Spanish as well as English.
- Oversees clearance of materials to be released to the public and media. Where possible, a subject expert, the Health Director (or designee) and the PIO should review, check for accuracy and content and sign off on materials distributed for public information or to the media.
- Communicates with the EOC and CCHD on need for technical materials, subject experts, and public spokespersons to address communication needs during a pandemic. In addition, requests support materials needed to provide protective health recommendations for the public and updated information on the impact and status of the pandemic.

G. Local Law Enforcement

- Assures the security of influenza vaccine and antivirals at the County Receiving Site and all Points of Dispensing (POD) set up for administration of vaccine to the public. Oversees security for vaccine and antivirals delivered to hospitals and/or healthcare providers.
- Enforces isolation and quarantine orders written by the State or County Health Director.

H. Cape Fear Valley Medical Center (CFVMC)

- Develops a hospital Pandemic Influenza Response Plan consistent with NC Pandemic Plan, and HRSA guidelines, which addresses medical surge capacity to sustain health care delivery during peak outbreaks when demand for services is high.
- Communicates with CCHD on plans for use of antiviral medications for treatment of ill persons and for prophylaxis of front-line healthcare workers.

- Develops mechanisms to communicate with healthcare providers, CCHD, and the County EOC. Keeps the EOC apprised of bed capacity, locations of any alternate care facilities opened by the hospital, and resource status (personnel, antivirals, and respiratory protective equipment).
- Assures that health care professionals receive relevant communications from CCHD in a timely manner.
- Participates in local influenza surveillance and reporting activities.
- Develops infection control plans to triage and isolate patients and protect staff (hospital and home care) from disease transmission.

I. All Local Response and Support Agencies Will:

- Fulfill applicable emergency support functions, agency responsibilities and notifications for mitigation, preparedness, response, and recovery as assigned under Cumberland County All-Hazards EOP. EOP can be found at: <http://www.co.cumberland.nc.us/emgmt/index.html>
- Operate in accordance with applicable local and county ordinances, NC General Statutes and Administrative Codes and federal laws; including those, which pertain to emergency response, bioterrorist attacks, animal emergencies, and Foreign Animal Disease and disease control measures for humans and animals.
- Comply with requirements set by the National Incident Management System (NIMS), including use of IC, UC and use of a JIC as warranted by the response.
- Maintain records of (your agency's) expenditures and obligations during the emergency.
- Provide an accurate and updated list to CCHD of any employees who qualify for vaccination as part of a designated priority population (pandemic and pre-pandemic).

III. SURVEILLANCE AND REPORTING

The CCHD surveillance system will need to have sufficient sensitivity to detect the initial cases, and be flexible enough to adapt to a rapidly changing environment of a pandemic. For these reasons, surveillance for pandemic influenza in Cumberland County will take a dual approach, and include virologic and disease surveillance.

1. Virologic Surveillance

Virologic Surveillance provides timely recognition of new influenza strains with pandemic potential. In North Carolina, the State Laboratory of Public Health provides virologic surveillance through testing of laboratory samples sent weekly from the 71 sites in the NC Influenza Sentinel Physicians Surveillance Network, which are located throughout the state. SLPH test for novel strains of influenza and looks for mutations in flu viruses, which could indicate the emergence of a pandemic strain. They also track changes in flu viruses over time and monitor for resistance to antivirals.

2. Disease Surveillance

Disease Surveillance is early the warning system used to detect increases in Influenza-like Illness (ILI) and track the impact of a developing outbreak on the County. CCHD has plans to employ both passive and disease surveillance to help identify the first cases of pandemic influenza in the County. Data collected as part of disease surveillance will also be used to monitor the number of hospitalizations and deaths (morbidity and mortality), identify affected populations and age specific attack rates, and help gauge the effectiveness of interventions aimed at limiting the spread of disease (such as vaccinations and social distancing).

A. Disease Surveillance: Interpandemic Phases 1&2

- CCHD routinely uses passive system of surveillance, whereby medical professionals, schools, daycare centers, and others in the community routinely report communicable diseases and conditions by phone or disease report cards mailed to CCHD.
- The Communicable Disease (CD) Nurse at the Health Department maintains close contact with the Infection Control and Emergency Departments (ED) at CFVMC regarding communicable disease outbreaks. CCHD also receives weekly reports from the Public Health Hospital Epidemiologist at CFVMC, monitors the HAN and CDC's EpiX, and reviews weekly influenza reports from the State Epidemiologist.
- From the end of September through May of each year, during the flu season, CCHD routinely conducts active surveillance for ILI. The CD Nurse (or designee) regularly calls providers, nursing homes, and CFVMC to inquire about their flu status and vaccine availability.
- During WHO Pandemic Phases 1-3, CCHD will maintain their current system of disease surveillance.
- CCHD will disseminate clinical information regarding novel viruses based upon information from CDC and WHO; and updated healthcare providers and medical professionals regarding any local cluster of disease.

B. Pandemic Alert Phase 3 – Enhanced Surveillance for Avian Influenza (Human infection(s) with a new subtype but no human-to-human spread or at most rare instances of spread to close contacts.)

- While it is generally recognized that there is a real threat that the H5N1 Avian Influenza could mutate and cause a global pandemic, it is still primarily a disease of birds, with most of the human cases still caused by direct contact with infected poultry. The H5N1 virus has not yet demonstrated the ability to sustain efficient human-to-human transmission; and the few documented cases of person-to-person spread (Indonesia and Thailand) have not gone beyond second-generation infection.
- During Pandemic Phase 3, (Pandemic Alert phase with a novel influenza virus infecting humans but no or minimal evidence of person-to-person transmission) CCHD will use enhanced surveillance for Avian Influenza as outlined in Appendix B1 of the NCPH

Pandemic Influenza Plan.

http://www.epi.state.nc.us/epi/gcdc/pandemic/AppendixB1_2007.pdf

C. Disease Surveillance Pandemic Alert Phases 4-5

- In Pandemic Phases 4 and 5, CCHD will initiate active surveillance and call urgent care facilities, regional hospitals, City, and County schools to inquire about the number of persons with ILI and monitor rates of absenteeism.
- **Case Investigation.** Potential cases of novel influenza with pandemic potential will be investigated by the CCHD Communicable Disease (CD) Nurse, with the support of the CCHD EPI Team. CCHD already works closely with the Infection Control Department at CFVMC regarding reported clusters or increasing incidence of disease, and will continue follow up with the hospital on disease investigation for pandemic influenza.
- **Sentinel Provider Network.** CCHD will add additional sites to its list for enhanced surveillance in Pandemic Phases 4 and 5. CFVMC is currently the only site participating in the Sentinel Provider Network as a Public Health Epidemiology (PHE).

D. Phase 6- Pandemic Period

- As the pandemic spreads into Cumberland County, CCHD will continue to intensify surveillance to monitor community and health impacts and track increases in morbidity and mortality rates (as staffing capacity allows). The funeral homes in the County will be asked to report deaths attributable to influenza, as will CFVMC, the Medical Examiner, and healthcare providers who have previously reported cases of pandemic influenza.
- The ability to expand surveillance and track mobility and mortality in full-blown pandemic will depend on the overall number of cases in the County and the availability of staff that can be reassigned to support surveillance and data collection. CCHD will follow guidelines issued by the state and/or CDC to the possible.
- The CCHD Preparedness Coordinator will direct enhanced surveillance activities during an influenza pandemic. Assistance will be provided by other CCHD staff (as needed and as available).

F. Scaled-back Surveillance

Enhanced surveillance will be conducted during the introduction, initial spread, and the first wave of a pandemic. Over time, as more persons are exposed, the pandemic strain is likely to become a routinely circulating influenza subtype. When that happens, the surveillance will revert to the frequency and intensity typically seen during inter-pandemic influenza seasons. The return to normal influenza surveillance will occur as soon as feasible, and the change will be communicated to all surveillance partners. <http://www.hhs.gov/pandemicflu/plan/sup1.html#enhsur>

3. Influenza Reporting

A. Mandatory Reporting of Novel Influenza Viruses

- Under NC General Code 10A 41A.0101, novel influenza virus are reportable immediately to the local Health Department/State.
- Case-based reporting could impractical when the number of cases in the County reaches a critical threshold, However, clinician reports will still be needed to detect new waves of the pandemic, track changes in the virus, and note antiviral sensitivity. Throughout the duration of the pandemic, healthcare professionals will be asked to report atypical or unusual cases, as well as breakthrough infections while on prophylaxis.

B. Mandatory Reporting of Pediatrics Deaths

- Any Influenza virus causing death in an individual younger than 18 years of age is reportable within 24 hours.

C. Clinicians Reporting to CCHD

- In the early stages of a pandemic, disease reports for pandemic influenza will be made to CCHD by healthcare providers, laboratories, and others required to report as follows. Reports will be made by phone to CCHD nurses at the following numbers:
 - (910) 433-3791
 - (910) 433-3792
 - (910) 433-3807

D. CCHD Notification to Healthcare Providers, Schools and Daycares centers

- During a pandemic, CCHD will keep healthcare providers informed if there are changes in reporting requirements or the case definition for the pandemic strain of influenza by way of the HAN, phone, fax, or letter.
- Information will be disseminated to the Health Care Providers, School System and Daycares through blast fax or phone calls. If the Cumberland County Emergency Operations Center is activated information will be disseminated according to the Cumberland County Emergency Operations Plan.
- Cumberland County School System has a notification plan in place for all staff and students utilizing an automated phone call-out system.
- Daycare operators make phone contact with staff and parents regarding closures and early dismissals.

E. Reporting to the State by CCHD

- CCHD will report cases of novel influenza to the General Communicable Disease Control Branch (GCDC) of the NC Division of Public Health by phone (Immediately), the CD Nurse will make the call to GCDC at telephone number (919) 733-3419 or Fax:

(919) 733-0490, as directed in pandemic protocols set by GCDC. The initial phone report will be followed up with written report card mailed to GCDC.

- In a full-blown pandemic, when the number of reportable cases is high, CCHD will notify GCDC of the number of cases on a daily basis by phone. General Clinic Staff will be assigned this duty.
- CCHD will also follow any revised guidelines for reporting issued by the state for reporting cases of novel influenza during a full-blown pandemic.

IV. LABORATORY DIAGNOSTICS

1. Human Specimen Testing

- In the early stages of a pandemic, laboratory testing (human) for novel influenza viruses will provide an early warning for presence of a novel influenza virus. Laboratory testing will also be used to verify cases and monitor virus mutations. CCHD will encourage clinicians to test all cases of suspected novel influenza infection during Pandemic Alert Phases 3-5 (prior to or when there are limited numbers of cases reported in the County), in order to accurately document the arrival of the pandemic strain in the County and to detail any antiviral resistance.
- The NC Pandemic Influenza lists considerations and criteria to be used by clinicians when evaluating whether to test a person for avian influenza. These can be found in Appendix B1, Enhanced Surveillance for Avian Influenza of the NC Pandemic Influenza Plan. Which can be accessed at: http://www.epi.state.nc.us/epi/gcdc/pandemic/AppendixB1_2007.pdf
- Testing for novel influenza virus (H5 and H7) is performed by State Laboratory of Public Health (SLPH), located in Raleigh. The NC State Laboratory of Public Health Pandemic Influenza Preparedness and Response Plan, information on testing methods, procedures for testing, how to package and ship specimens, and forms (Laboratory Submission Form NC DHHS 3431 / NC DHHS-3445 and CDC Specimen Submission Form), to be used when submitting samples for testing at the SLPH can be found in Appendix H-1, H-2, H-3, and H-4 at <http://www.epi.state.nc.us/epi/gcdc/pandemic.html>
- To test for novel influenza viruses clinicians will need to call the SLPH and the GCDC branch epidemiologist on-call at (919) 733-3419. An epidemiologist is available 24/7 for consultation regarding testing and management of patients with suspected novel influenza infection.
- Once the presence of a novel strain is well established in the County, clinical case definitions will probably be used rather routine lab testing to document cases. However,

short-term increases in testing of hospitalized patients will still need to occur at the beginning of any new waves of disease to verify the new outbreak and track any subsequent changes in the virus.

- In Pandemic Phases 5 and 6, CCHD will provide guidance to clinicians on when to submit specimens to the SLPH and when not to. This will be communicated via the HAN. Alerts, updates sent by mail, fax, e-mail, or by way of a notice posted on a web site.

2. Poultry and Livestock Testing

- Laboratory testing for avian influenza for poultry or livestock is performed by the North Carolina Veterinary Diagnostic Laboratory (NCVDL) System, a program of the NC Department of Agriculture and Consumer Services. Rollins Laboratory in Raleigh is the Central laboratory and is a satellite laboratory of the National Animal Health Laboratory Network (NAHLN). The Laboratories are opened Monday thru Friday 8:00 am to 5:00 pm, emergency after hours, weekends, and holidays submissions must be arranged by contacting the laboratory. Source: <http://www.ncvdl.com/Vetlababoutthesystem.html>
- Guidelines and forms for poultry and livestock specimens' submittal can be accessed at <http://www.ncvdl.com/VetLabSubmitting.html>

V. VACCINE

1. General

- A. Vaccination is considered the best control measure for the prevention of influenza. However, with a pandemic caused by a novel strain of influenza, vaccine may not be available for the first 4-6 months, while the new strain is selected and vaccine is produced. Even when pandemic vaccine becomes available, there will not initially be enough to vaccinate the entire U.S. Population.
- B. The Number of people who can be vaccinated will depend on manufacturing capacity, the speed at which vaccine is manufactured, and the number of doses of vaccine (and/or quantity of antigen in the vaccine) required to produce an immune response. While current U.S. production capabilities for vaccines are being expanded and new technologies for production are under development, the demand is projected to exceed the supply for some time.
- C. The overarching goal will be to vaccinate the entire population, but this will have to be done in stages, since there will not be enough vaccine for everyone early in the pandemic. The CDC has recommended that state and local public health define priority groups in advance of a pandemic, so that the vaccine can be first administered to healthcare workers and others with jobs critical to maintaining community infrastructure.

2. Pre-Pandemic Vaccine

A. A stockpile of H5N1 vaccine is being established in response to concerns about the avian influenza H5N1 virus currently circulating in Asia. Its purpose is early vaccination of persons critical to maintaining infrastructure. In the absence of a virus specifically matched to the pandemic virus, it is hoped that pre-pandemic H5N1 vaccine will have sufficient cross-reactivity to afford some protection to these groups.

B. The goal is to have sufficient vaccine for 20 million people (at two doses per person). The trigger for using pre-pandemic vaccine has yet to be determined but would likely be evidence that an H5N1 virus had acquired the ability to spread efficiently from person to person. However, because the stockpiled vaccine will eventually lose potency, discussion has also occurred regarding possible administration to selected groups before the onset of a pandemic.

3. Command and Control

The Immunization Branch (IB) of the Division of Public Health will be the lead agency at the state level responsible for acquisition and distribution of vaccine in the event of a pandemic. CCHD will oversee influenza vaccination at the county level for priority population, and for the general population should vaccine be distributed through Local Health Departments and/or the CDC Division of the Strategic National Stockpile (SNS).

4. Vaccine Distribution

A. Vaccine will be distributed according to the federal plan and subsequent guidelines issued by the CDC and/or NC Public Health. CCHD will activate the Cumberland County SNS Plan to receive and distribute vaccines to priority populations, as it becomes available.

B. Vaccination in the context of an influenza pandemic will take place over many months and unfold in stages. Priority populations will be vaccinated first and the vaccination program will expand to include others as more vaccine becomes available.

C. The distribution system may change as the supply of vaccine increases and more of the population is vaccinated. Vaccination plans will be flexible and have contingencies built in for transitioning from a tightly controlled vaccination program administered by the State and CCHD to inclusion of broader array of vaccination partners from the private sector.

D. CCHD will use mass vaccination guidelines outlined in the Cumberland County Strategic National Stockpile Plan for both pre-pandemic and pandemic vaccinations administered by public health. These include protocols for both mass vaccination of the County populations and for smaller restricted vaccination clinics for priority populations.

E. Pandemic vaccine will arrive in lots over several months, and will likely require two doses given several weeks apart, CCHD will assess staffing needs, then reduce or suspend clinic operations accordingly to free up personnel to give vaccinations. They will also develop a system to track vaccine recipients and call them back for the second dose; as well as monitor and report adverse reactions to the vaccine using Vaccine Adverse Events Reporting System (VAERS).

5. Vaccine Storage

- A. Small amounts of vaccine and antivirals will be kept in secure refrigerators currently used for vaccines.
- B. Large amounts of vaccine will most likely be secured in the Local Receiving Site secured by Emergency Management.
- C. *See Annex A (SNS Plan) of the Emergency Operations Plan Attachment #3 of the Strategic National Stockpile Plan.*

6. Priority Populations for Vaccinations

- A. Priority groups for pre-pandemic and pandemic vaccination will be determined at the federal level. Vaccinations will be given according to national priority ranking, although state and local jurisdictions will have some flexibility in defining local priority groups and sub-prioritizing within Tiers. Priority populations will be vaccinated sequentially as vaccine becomes available.
- B. Draft priority groups for pandemic vaccination have been developed by the Advisory Committee on Immunization Practices (ACIP) and the National Vaccine Advisory Committee (NVAC). Groups listed in Table D-1 of the Department of Health and Human Services (HHS) Pandemic Influenza Plan. Appendix D will be priority groups for both pre-pandemic and pandemic vaccine. Table D1 can be found on page D13 of the HHS Plan (<http://www.hhs.gov/pandemicflu/plan/appendixd.html>) *Draft priority populations for HHS and CCHD also included in Attachment 3.*
- C. CCHD has adopted the HHS Draft Priority Populations for distribution of pandemic influenza vaccine, and will continue to adhere to national recommendations should new priority groups be defined (Priority populations may be altered at the time of the event based on the epidemiology of the pandemic virus, the populations at risk, and need to protect critical infrastructure). CCHD may also, if needed, modify and refine national guidelines to meet local response priorities in the County.
- D. It will be necessary for CCHD to communicate the rational guidelines to meet local response priorities in the County.

VI. ANTIVIRALS

1. General

- Four antiviral agents are currently for prophylaxis (preventative or post exposure care) or treatment for influenza A. Amantadine and Rimantadine are chemically related drugs called adamantanes that interfere with the replication of influenza viruses. Oseltamivir (Tami flu ®) and Zanamivir (Relenza ®) are neuraminidase inhibitors that

interfere with the release of viral particles from infected cells. All the antiviral medications have been shown to modestly reduce the severity and duration of influenza A symptoms when administered within 48 hours of symptom onset.

- Studies have shown these drugs to be approximately 60%-90% effective in preventing illnesses caused by influenza A strains in both children and adults. Most experts believe that similar levels of efficacy can be achieved with novel influenza strains. However, given the unpredictable nature of influenza viruses and their proclivity to mutation, there is no way to accurately predict how effective an antiviral will be against a particular virus, or to know if a novel strain will have resistance to one or more of these drugs.
- In advance of a influenza pandemic, the federal government and the states are planning to acquire sufficient quantities of antiviral drugs (oseltamivir and zanamivir) to treat 25% of the U.S. population. This assumes a pandemic will follow historical patterns and have around a 25% attack rate. Of the approximately 81 million regimens to be purchased, 50 million regimens will be held in the SNS, with the remaining 31 million regimens available for subsidized purchase by individual states (up to 25% of their population). North Carolina will be eligible to purchase around 884,000 regimens.
- A regimen of Tami flu is 10 pills. Current treatment guidelines for influenza call for one pill 2 times a day for 5 days. Post-exposure prophylaxis with Tami flu requires one pill daily for 10 days; prophylaxis requires one pill daily for the duration of flu activity (may be 6-8 weeks).

2. Assumptions

- Appropriate use of antivirals for treatment of pandemic influenza will reduce morbidity and mortality and diminish the overwhelming demands that will be placed on the healthcare system. Antiviral may be used during Pandemic Alert Phases 4 and 5 to contain small disease clusters and slow the spread of the novel influenza strain.
- U.S. Production capability for antivirals is limited and demand could quickly surpass supply during a pandemic. Antiviral use will be limited to the number of doses available through the public and private sectors. Personal stockpiling of antivirals is likely to occur, which could further deplete limited resources.
- How useful antivirals will be in a pandemic will depend on how susceptible or resistant the pandemic influenza strain is to available antiviral medications, and how effective these drugs are in preventing infection, reducing the duration of illness, lessening the severity of symptoms.
- The pandemic influenza virus could evolve and develop resistance to one or more of the available antiviral drugs. For example Amantadine has little or no effectiveness against the H5N1 avian influenza virus currently circulating in Asia.
- Not everyone can take influenza antiviral medications. Adverse effects, which range from mild gastrointestinal discomfort to significant neurological signs and symptoms, are not uncommon.

- HHS will develop national guidance on use of antivirals during a pandemic, including identification of priority groups for antiviral drug treatment and prophylaxis.

3. Treatment with Antivirals

- Antiviral drugs will be distributed to hospitals for treatment of persons infected with a pandemic strain of influenza. Treatment should occur within 48 hours after onset of symptoms, as antiviral drugs are not effective if given more than 48 hours after illness occurs. Rapid diagnosis and delivery of antivirals is essential.
- The state may deliver antivirals directly to hospitals, or they could be shipped as part of the SNS to a Local Receiving Site. It would then be up to the County to deliver the antiviral drugs to the hospital, or the hospital could pick up the drugs from the Local Receiving Site.
- Stocks of antivirals will be supplied to healthcare providers for treatment of ill persons and prophylaxis of exposed healthcare workers (as available). Due to the large number of medical officers and clinics in the state, these medications are likely to be shipped to the Local Receiving Site. Antiviral drugs could then be redistributed by the County medical providers, or they could be asked to pick them up at the Local Receiving Site.
- Patients with suspected cases of avian influenza A (H5N1) or another novel strain of influenza will be isolated and treated with appropriate antivirals in accordance with current treatment and dosage guidelines.

4. Antiviral Chemoprophylaxis

- While antivirals may be useful in reducing morbidity and mortality during a pandemic, post exposure and preventative use of antivirals will not be considered primary disease control measures for pandemic Influenza. Other interventions aimed at limiting the spread of disease (e.g., social distancing, travel restrictions, isolation of ill persons, quarantine of those with exposure, and implementation of infection control measures) will be more widely used to control pandemic influenza. Limited stocks of antivirals will be reserved for treatment of ill persons and chemoprophylaxis of priority populations.
- Chemoprophylaxis with antivirals will not substitute for an influenza vaccination. However, since there will be no vaccine for the first 4-6 months of a pandemic, prophylaxis with antivirals may be used during the early stages of a pandemic to protect those persons at high risk of exposure who are also deemed indispensable to carry out public health, clinical and public safety-related functions. Antiviral prophylaxis could also be considered for persons with an immune deficiency and others at high risk of developing complications should they become ill. Chemoprophylaxis for all these groups will be dependent on availability.

- Effective prophylaxis requires ongoing antiviral use for the entire period of potential exposure, which could be as long as 6 to 8 weeks. Prophylaxis use of antivirals would have to be continued through subsequent pandemic waves until vaccine is available.
- If a pandemic overlaps with the regular influenza season, healthcare workers (who may also care for persons with seasonal influenza) will be vaccinated against seasonal influenza to reduce the possible risk of co-infection and re-assortment of seasonal influenza and novel strains.
- Early in a pandemic (phase 4 and 5, when outbreaks are localized) CCHD may use targeted antiviral prophylaxis for containment of small outbreaks or clusters of novel strains of influenza. Antivirals would be used to quench the initial cases in well-defined populations (e.g. workers in a particular workplace or those exposed on a plane with known cases). However, once a pandemic is underway and infection is widespread, such a strategy would not represent an efficient use of limited antiviral supplies.
- As the pandemic progresses and the number of cases grow, CCHD will consult with NCPH and/or CDC with regards to whether it is necessary or feasible to trace close contacts of ill persons and provide them with post-exposure antivirals prophylaxis.

5. Pandemic Phases 1 – 3 CCHD will:

- Develop and disseminate guidelines for medical providers for the use of antivirals. These will be based upon current guidance issued by the CDC, the WHO, and NC Public Health. The health department will also review existing recommendations for priority groups, and estimate numbers of persons in priority categories in the County.
- Develop public information messages for medical providers and the public to explain: the role of antivirals in responding to pandemic influenza, the need to prioritize the use of limited supplies of antivirals for treatment and limited chemoprophylaxis, and the rationale for their use by priority groups. Message will also stress the risks of antivirals and the importance of appropriate use (i.e., using the drug as prescribed and for the full number of days recommended) to minimize drug resistance.
- Review and modify Cumberland County's SNS Plan with regards to receiving, storing, staging antiviral medications from the state or the CDC Division of the SNS.

6. Pandemic Phases 4 – 5 CCHD will:

- Obtain from CDC and/or NCPH the most current recommendations for dosages and duration of therapy for antiviral treatment and chemoprophylaxis, and disseminate this information to hospitals and healthcare providers.
- Obtain and distribute updated information on the epidemiology of the pandemic strain, antiviral efficacy, and patterns of resistance.
- Review and update plans for requesting and receiving antivirals from the SNS.

- Review and if needed, modify recommendations for priority groups. Recalculate numbers of persons in these categories based on current County demographics.

7. Pandemic Phase 6

When transmission of pandemic influenza has become widespread, the goal for antiviral use will be to treat those at highest risk of severe illness and death and to preserve the delivery of healthcare and other essential critical services with targeted prophylaxis.

After a vaccine becomes available, antiviral drugs may be used to protect persons who have contraindications to the vaccine or who are immune compromised (e.g., the elderly or those with an underlying immunosuppressive disease).

A. During phase 6 CCHD will:

- Notify healthcare workers of any new recommendations for the use of antivirals, and update them on how effective or resistance antivirals are for treatment and prophylaxis of the pandemic strain.
- Activate the Cumberland County SNS Plan to receive antivirals, and coordinate with NC Public Health regarding delivery of State or SNS supplied drugs to the County Local Receiving Site. Healthcare workers, the hospital, and clinics will be apprised of County plans for re-distribution or pick-up of antivirals from the Local Receiving Site.
- Review available safety data from CDC and FDA and communicate relevant information to hospitals, healthcare providers and the public.
- Increase surveillance for resistance associated with treatment or chemoprophylaxis. Surveillance for antiviral resistance may be particularly important during the later stages of the pandemic, since widespread use can promote resistance. The detection of widespread resistance might require a re-evaluation of priorities for prophylaxis and treatment.
- CCHD will encourage hospitals and healthcare providers to obtain specimens (for testing by the SLPH) from patients who develop severe disease while receiving treatment or chemoprophylaxis.
- Implement measures to monitor adverse reactions and notify healthcare workers to monitor patients for side effects from antivirals.

8. Antiviral Priority Populations

- Priority groups for antivirals will be determined at the national level. Priority groups for antivirals have been developed by National Vaccine Advisory Committee (NAVAC) for both treatment and prophylaxis during a pandemic. These are listed in the Pandemic Influenza Plan developed by Department of Health and Human Services (HHS).

Groups listed in the HHS Plan are currently designated as priority for pandemic use of antivirals at: <http://www.hhs.gov/pandemicflu/plan/appendixd.html>.

- CCHD has adopted the HHS Priority Populations for antiviral use and will continue to adhere to national recommendations should new priority groups be defined. CCHD may, as needed, modify and refine national guidelines to meet local response priorities in the County.
- It will be necessary for CCHD to communicate the rationale for priority use of antivirals and the populations slated to receive them to health providers and the general public prior to and during all phases of an influenza pandemic.

9. Cumberland County Priority Groups for Antiviral Medications during a Pandemic

If antiviral supplies are limited, pandemic treatment and prophylaxis with antiviral medications will be prioritized that can be found *in Attachment 5*.

VII. DISEASE CONTAINMENT

1. Influenza Information

A. How Influenza is Spread

Influenza is primarily transmitted from person to person via large virus-laden droplets (particles $> 5 \mu\text{m}$ {micrometer} in diameter) that are generated when infected persons in close proximity (e.g., within 3 feet) when they settle on the mucous membranes of their upper respiratory tracts. Transmission of influenza viruses also occurs through direct person-to-person contact (hand to hand) and indirect contact with respiratory secretions deposited on inanimate surfaces. A person who touches the infected surface, and then touches their eyes, nose or mouth can become infected with influenza. www.cdc.gov/flu/professionals/infectioncontrol/pdf/longtermcare.pdf

B. Incubation Period

The typical incubation period for influenza is 1-4 days, with an average of 2 days. Adults can be infectious from the day before symptoms begin through approximately 5 days after illness onset. Children can be infectious for ≥ 10 days after the onset of symptoms, and young children also can shed virus before the illness onset. Severely immunocompromised persons can shed virus for weeks or months. www.cdc.gov/flu/professionals/diagnosis/

2. Quarantine and Isolation (Q&I)

Q&I have been long used by public health to limit the spread of infectious disease to uninfected persons or populations. Q&I can be voluntary disease control measure; whereby ill or exposed persons choose to stay home until they no longer are at risk of passing the disease to another person, or they can be mandatory restrictions ordered by Cumberland County Health Director (for Cumberland County only), the State Health Director (anywhere in NC) or the U.S. Surgeon General (at entry points to the U.S. and between states)

A. Isolation

Isolation refers to the separation of people that have a contagious illness from healthy people in order to stop the spread of infection. People may be isolated in a hospital, their homes, or other designated healthcare facility. Hospitals routinely isolate patients with certain infectious disease such as tuberculosis or Severe Acute Respiratory Syndrome (SARS) in restricted areas.

B. Quarantine

Quarantine, in contrast, applies to the separation of people (or Animals) who have been exposed to an infectious disease but are not showing symptoms, and who could still possibly be contagious. Quarantined individuals may be confined in their homes, in a designated quarantine facility, or have their freedom of movement or action restricted (e.g., not able to fly or leave the County until the incubation period for the disease has passed without symptoms, or be prohibited from working in a food established if they have been exposed to a food borne disease).
Sample orders for Q&I during an influenza pandemic can be found in Attachment #4

NC QUARANTINE AND ISOLATION LAWS

§ 130A-145. Quarantine and isolation authority.

(a) The State Health Director and a local health director are empowered to exercise quarantine and isolation authority. Quarantine and isolation authority shall be exercised only when and so long as the public health is endangered, all other reasonable means for correcting the problem have been exhausted, and no less restrictive alternative exists.

(b) No person other than a person authorized by the State Health Director or local health director shall enter quarantine or isolation premises. Nothing in this subsection shall be construed to restrict the access of authorized health care, law enforcement, or emergency medical services personnel to quarantine or isolation premises as necessary in conducting their duties.

(c) Before applying quarantine or isolation authority to livestock or poultry for the purpose of preventing the direct or indirect conveyance of an infectious agent to persons, the State Health Director or a local health director shall consult with the State Veterinarian in the Department of Agriculture and Consumer Services.

(d) When quarantine or isolation limits the freedom of movement of a person or animal or of access to a person or animal whose freedom of movement is limited, the period of limited freedom of movement or access shall not exceed 30 calendar days. Any person substantially affected by that limitation may institute in superior court in Wake County or in the county in which the limitation is imposed an action to review that limitation. The official who exercises the quarantine or isolation authority shall give the persons known by the official to be substantially affected by the limitation reasonable notice under the circumstances of the right to institute an action to review the limitation. If a person or a person's representative requests a hearing, the hearing shall be held within 72 hours of the filing of that request, excluding Saturdays and Sundays. The person substantially affected by that limitation is entitled to be represented by counsel of the person's own choice or if the person is indigent, the person shall be represented by counsel appointed in accordance with Article 36 of Chapter 7A of the General Statutes and the rules adopted by the Office of Indigent Defense Services. The court shall reduce or terminate the limitation unless it determines, by the preponderance of the evidence, that the limitation is reasonably necessary to prevent or limit the conveyance of a communicable disease or condition to others.

If the State Health Director or the local health director determines that a 30-calendar-day limitation on freedom of movement or access is not adequate to protect the public health, the State Health

Director or local health director must institute in superior court in the county in which the limitation is imposed an action to obtain an order extending the period of limitation of freedom of movement or access. If the person substantially affected by the limitation has already instituted an action in superior court in Wake County, the State Health Director must institute the action in superior court in Wake County or as a counterclaim in the pending case. Except as provided below for persons with tuberculosis, the court shall continue the limitation for a period not to exceed 30 days if it determines, by the preponderance of the evidence, that the limitation is reasonably necessary to prevent or limit the conveyance of a communicable disease or condition to others. The court order shall specify the period of time the limitation is to be continued and shall provide for automatic termination of the order upon written determination by the State Health Director or local health director that the quarantine or isolation is no longer necessary to protect the public health. In addition, where the petitioner can prove by a preponderance of the evidence that quarantine or isolation was not or is no longer needed for protection of the public health, the person quarantined or isolated may move the trial court to reconsider its order extending quarantine or isolation before the time for the order otherwise expires and may seek immediate or expedited termination of the order. Before the expiration of an order issued under this section, the State Health Director or local health director may move to continue the order for additional periods not to exceed 30 days each. If the person whose freedom of movement has been limited has tuberculosis, the court shall continue the limitation for a period not to exceed one calendar year if it determines, by a preponderance of the evidence, that the limitation is reasonably necessary to prevent or limit the conveyance of tuberculosis to others. The court order shall specify the period of time the limitation is to be continued and shall provide for automatic termination of the order upon written determination by the State Health Director or local health director that the quarantine or isolation is no longer necessary to protect the public health. In addition, where the petitioner can prove by a preponderance of the evidence that quarantine or isolation was not or is no longer needed for protection of the public health, the person quarantined or isolated may move the trial court to reconsider its order extending quarantine or isolation before the time for the order otherwise expires and may seek immediate or expedited termination of the order. Before the expiration of an order limiting the freedom of movement of a person with tuberculosis, the State Health Director or local health director may move to continue the order for additional periods not to exceed one calendar year each. (1957, c. 1357, s. 1; 1983, c. 891, s. 2; 1987, c. 782, s. 15; 2002-179, s. 5; 2004-80, s. 2.)

§ 130A-2. Definitions.

The following definitions shall apply throughout this Chapter unless otherwise specified:

(3a) "Isolation authority" means the authority to issue an order to limit the freedom of movement or action of persons or animals that are infected or reasonably suspected to be infected with a communicable disease or communicable condition for the period of communicability to prevent the direct or indirect conveyance of the infectious agent from the person or animal to other persons or animals who are susceptible or who may spread the agent to others.

(7a) "Quarantine authority" means the authority to issue an order to limit the freedom of movement or action of persons or animals which have been exposed to or are reasonably suspected of having been exposed to a communicable disease or communicable condition for a period of time as may be necessary to prevent the spread of that disease. Quarantine authority also means the authority to issue an order to limit access by any person or animal to an area or facility that may be contaminated with an infectious agent. The term also means the authority to issue an order to limit the freedom of movement or action of persons who have not received immunizations against a communicable disease when the State Health Director or a local health director determines that the immunizations are required

to control an outbreak of that disease.

C. Use of Q&I During an Influenza Pandemic

Because influenza pandemics have the potential for large numbers of cases and exposed contacts, voluntary Q&I are preferred over mandatory orders, and will be encouraged by CCHD during all phases of a pandemic.

Mandatory Q&I may be used if a person (s) will not comply with voluntary Q&I, and actions are determined to endanger public health. Decisions on the need for mandatory orders will be made by the CCHD Health Director (with support from the Public Health Response Team {PHRST}). The Health Director will assess the threat to public health, evaluate potential consequence based on established criteria and guidance from NC Public Health and /or CDC, and then determine whether compulsory quarantine or isolation is warranted.

- **Isolation Use in a Pandemic**

- Separating the sick from the well is a good practice during all phases of a pandemic. Persons with influenza symptoms will be directed to remain in isolation in their homes, a hospital, or other healthcare setting while they are sick, so they will not infect others.
- Hospitals, correctional institutions, nursing homes and other care facilities will be instructed to implement isolation protocols for patients suspected of being infected with pandemic influenza. CCHD will coordinate closely with clinicians and health care facilities to help them achieve voluntary compliance with isolation of ill or exposed persons in their care.

- **Use of Quarantine in a Pandemic**

- While quarantine has been shown to be effective in protecting the public from some diseases, it may be of limited use for pandemic influenza due to the projected large numbers of cases, the ease of transmission, and short incubation period for influenza viruses.
- Quarantine of contacts of influenza cases will be most beneficial in the early phases of a pandemic, when there are limited numbers of cases in the County. It could also be efficiently spread person to person.

D. Monitoring and Support for Persons in Q&I

- **Ordered Quarantine and Isolation**

- Studies have shown that people are more likely to remain in home Q&I if they receive regular communication to make sure their basic needs are taken care of. Effective Q&I will require that CCHD monitor and address essential services for persons ordered to stay in their homes because of illness or exposure to the pandemic influenza virus. This could include ensuring access to food and water, clothing, shelter, medicines, communications with family members, mental health

and psychological support, transportation to medical treatment, eldercare, daycare and other supportive services.

- During the early stages of a pandemic, when the number of cases in the County is low, individuals in home Q&I will be monitored by CCHD personnel by phone. A healthcare or public health worker will call and evaluate the person on a regular basis (at least daily) for signs and symptoms suggestive of disease and to check for unmet needs.
 - CCHD will coordinate with the American Red Cross, DSS, local non-profit agencies, and local businesses to provide Q&I support services to persons in ordered Q&I.
 - Once the number of persons in Q&I exceeds the capacity of CCHD, monitoring will be coordinated through the County EOC using the County automated calling system. Calls in English and Spanish will be placed daily to those on a list provided by CCHD. The automated system will be programmed to provide options for indicating the need to speak with a healthcare professional or receive other assistance or support. Callers who indicate they need additional services will have their calls routed to the CCHD or triage group in the EOC.
 - Persons under mandatory quarantine orders will be confined to their homes for the duration of the incubation period. There may be times when home quarantine is not feasible, because either the person who has been exposed is homeless, is traveling, or the person cannot be safely confined in their home. In these instances, CCHD will coordinate with DSS, who will set-up a quarantine shelter with assistance from Emergency Management. Shelter sites will be selected from the list of certified shelter sites in the County. CCHD will assign a nurse to monitor the health of those confined to this shelter and to implement control measures to limit the spread of infection among staff and shelter residents.
- Voluntary Quarantine and Isolation
 - During peak periods of a pandemic outbreak, large numbers of people will choose to stay at home because they are either ill or have been exposed to the flu virus. Voluntary quarantine or isolation may be recommended by a healthcare professional or public health personnel, or persons may choose to self-shield and remain in their homes (and fall outside any monitoring system).
 - Passive monitoring for symptoms will be encouraged for persons in voluntary quarantine. CCHD will advise contacts of ill persons to perform self-assessment for symptoms daily and to contact a healthcare professional immediately if they develop respiratory symptoms or a fever.
 - Persons in voluntary isolation will be encouraged to contact a healthcare professional or go to the Emergency Room at CFVMC (or other Urgent Care site) if their symptoms worsen.

- CCHD and the County will both open public information lines during a pandemic, and one or both of these numbers could be designated to take calls from persons in voluntary quarantine. The LHIT, the media, members of the planning group, and healthcare professionals will be used to publicize these numbers to the public and special populations.
 - Guidance for persons caring for ill persons in their home will be publicized through the same venues. Resource materials to assist individuals and families with home care for someone with influenza have already been developed by American Red Cross. These are available from the Highlands Chapter of Fayetteville or by download at: www.nwnc-redcross.org/Pandemichomecare.pdf.
 - As capacity allows, the County automated dialing system will be used to make monitoring calls to individuals in voluntary home Q&I, when their location and phone number are known. Local social services agencies may also assist with telephone reassurance and phone monitoring of clients confined to their homes.
 - Local social service and home-care agencies will undoubtedly receive requests for assistance from persons in voluntary Q&I. When an agency is unable to meet a request, their contact information will be directed to the triage group in the EOC. During peak pandemic periods, request for help could overstretch available resources, especially if community support organizations and home-care agencies have high rates of absenteeism among employees and/or volunteers.
- Vulnerable Populations Support for Quarantine and Isolation
 - Additional outreach to vulnerable populations will be necessary to promote compliance with voluntary Q&I during a pandemic, as well as ensure they receive needed services and information on how to care for sick relatives at home. Message maps will be developed in Spanish as well as English, and agencies on the Vulnerable Populations Resource List will be contacted to provide outreach and culturally appropriate information to vulnerable groups. These organizations will also be directed to contact the EOC triage group when they identify unmet needs among their clients.
 - Some agencies in the Planning Group will also contact clients by phone and/or perform regular phone reassurance for the populations they serve.

3. Social Distancing and Community Containment Measures

Social distancing is another non-medical intervention aimed at controlling the spread of disease within communities. The goal of social distancing is to reduce person-to-person transmission by preventing or discouraging people from coming into close contact with each other. This can involve voluntary measures to minimize social interaction such as self-shielding, work at home policies, and “snow days” to encourage people to stay home where they are less likely to be exposed. It can also include mandated cancellation of events, bans on public gatherings, closing of schools and private universities, travel restrictions and/or other measures imposed under a locally declared state of emergency.

A. General

- Once a pandemic has progressed beyond a few cases, social distancing is considered more effective than quarantine at reducing the spread of pandemic influenza in a community.
- Studies show that the most common routes of transmission in a flu pandemic will be children transmitting the flu virus to other children and adults infecting adults. This suggests that limiting social mixing in schools, workplaces, and public gatherings could substantially decrease the spread of disease. The efficacy of social distancing as relates to pandemic flu has not been documented, so it remains to be seen how effective it will actually be in preventing new cases of pandemic influenza. There is also no way to know to what extent the public will adhere to social distancing. There is also no way to know to what extent the public will adhere to social distancing recommendations, and whether there will be enough compliance for it to succeed in controlling a flu pandemic.
- Implementation of social distancing strategies will have a negative impact on the economy of the County as events are cancelled and business temporarily shut their doors and employment is reduced. They will also create social disruption as schools and daycare centers close, church and faith services are suspended and personal and family events are postponed.
- The Public Health Director will review current epidemiology data during each pandemic phase, and make recommendations to the Emergency Management Director, the County Commissioners, Municipals Mayors, and Local School Boards regarding the need to enact social distancing measures to limit the spread of disease.
- The Decision to dismiss school early prior to a state of emergency is in place will be according to the Local School Board Plan for Emergency Response. Cumberland County Schools Closing policy can be found at:
<http://www.ccsboardpolicy.ccs.k12.nc.us/afc.pdf>

B. Pandemic Phases 1-4 (no cases in the County)

- CCHD will focus on preparedness planning and promote education to local elected officials who have authority to enact local states of emergency and/or implement social distancing measures (County and Executives and the Local School Board).
- The CCHD preparedness will provide outreach to local business and industry, response partners, and local social service agencies to promote social distancing and educate about potential economic and social impacts.

C. Pandemic Phases 5-6 (cases in the County)

- The Public Health Director will coordinate with elected officials regarding decision making and implementing of social distancing.

- The Health Director will recommend actions and timing for social distancing measures based on current epidemiology, numbers of cases, and the projected impact of the pandemic on the County. Additional input may be sought from NC Public Health, NC emergency Management, local health departments in neighboring counties, and/or the PHRST 3.
- County and Municipal officials will declare local states of emergency as warranted by the number of case and the projected impact on the County.
- Emergency Management Director will activate the County EOC for pandemic response. CCHD, County and Municipal Executives and Local School Boards will coordinate
- A JIC will be opened in the EOC or in a location to be determined by the Emergency Management Director, to coordinate the release, timing, and content of messages concerning implantation of social distancing. The JIC will also be used to promote the rational behind distancing strategies and encourage public compliance. The County PIO (or designee) will oversee release of information to the public and media. Members of the LHIT will assist as required.
- The Health Director will monitor the progression of the pandemic and the effectiveness of social distancing strategies. Local decision makers will be advised (by the Health Director) when social distancing measures should be suspended or relaxed.
- Facilities with less mobile or immobile populations (long-term care facilities, nursing homes, prisons) will be advised by CCHD to restrict access to prevent exposure and protect residents.

4. Infection

A. General

- Emphasizing measures individuals and healthcare workers can take to reduce their personal risk of infection may be one of the most effective ways to control the spread of disease during a pandemic.
- Infection control strategies such as proper hand washing, respiratory hygiene, and cough etiquette will be promoted to clinicians and the public during all phases of a pandemic.
- Persons ill with influenza or with respiratory symptoms will be urged to wear surgical masks, (when they have to be out of their homes to visit doctor's offices or other healthcare settings) so they are less likely to infect others as they cough or sneeze. Masks may also be important as an extra layer of protection for persons at high risk for complications of influenza. Education will need to be provided on proper use and removal of masks for those strategies to be effective.
- It is expected that the general public may hoard masks for personal use, which could lead to shortages if demand is grater than available supplies.

- CCHD will disseminate information to healthcare professionals regarding the use of personal protective equipment such as masks and respirators, gowns, and gloves during a pandemic. Guidance will be based on recommendations from HHS, CDC and/or NC Public Health.
- Interim guidance from the CDC on the use of surgical masks and respirators during a pandemic can be found at: www.pandemicflu.gov/plan/healthcare/maskguidancechc.html

B. CCHD Plans for Use of Masks and Respirators

- CCHD will use respirators to protect staff that could be potentially exposed to pandemic influenza through their work. At present, CCHD has 300 N95 respirators in stock. The Health Department will continually evaluate the need for additional masks and may order more based on availability of funds, the Pandemic Phase, and guidance from CDC.

C. Infection Control Recourses

- The NC and CDC have published recommendations for infection control in healthcare settings. These can be found at: www.unc.edu/depts/spice/ and www.cdc.gov/ncidod/dhqp/index.html

VIII. EMERGENCY RESPONSE

1. General

- A. Response to an influenza pandemic will occur at the local level. A coordinated effort by local public health, CFVMC, County and Municipal partners, and community non-profit organizations will be needed, but who is involved and their level of participation will vary depending on the particular flu virus and the extent to which the outbreak affects the County.
- B. Due to the potential magnitude of a pandemic, state and federal resources are likely to be stretched beyond capacity. Mutual aid and outside assistance, guidance, and coordination of vaccine and antiviral distribution (when available).

2. Public Health

- A. **The Role of Public Health** during an influenza pandemic will be to detect and contain outbreaks of the influenza virus. Response will be guided by current Pandemic Phase as defined by the WHO, and May be further categorized according to whether the County is affected or not and/or the number of cases in the County.
- B. Public Health pandemic response will include:

- Disease surveillance and investigation: to detect cases and persons with likely exposure.
- Epidemiology: to track trends in the disease, monitor changes in the virus and assess effectiveness of interventions.
- Implementation of disease controls: to contain the out break and limit the spread of infection. This could include writing of quarantine and isolation orders, direction to Municipal and County officials, the school system and private business on cancellations, closures and other non-pharmaceutical interventions for disease control, guidance on Personal Protection Equipment (PPE) for healthcare workers and others with occupational risk, and self protection measures for the public.
- Vaccine distribution and guidance on use of antivirals including treatment and/or chemoprophylaxis.
- Risk Communication and Public Information: including pandemic Preparedness, outbreak status, guidance to healthcare professionals and preventative and personal protection measures for the public and medical community.

3. Emergency Response

A. Medical Treatment and Surge Capacity

- CFVMC, acute care clinics, and private healthcare professionals will have primary responsibility for diagnosis, triage, and treatment of persons infected with influenza in the County. Additional medical treatment may be provided by in-home care agencies and adult and child care facilities (with medical Staffing).
- CFVMC is currently in the process of planning for a potential pandemic. Preliminary plans for medical surge will expend the capacity of the hospital from the current 657 beds to 1,057. The hospital is looking at alternative sites for influenza patients, most likely be another portion of the hospital that they can clear out, but their plan is still in development.
- The capacity to extend the numbers of hospital beds in a pandemic will depend on the availability of medical personnel to staff them. However, even with an expansion to 1,057 beds, demand for hospital beds could easily outstrip supply during peak pandemic periods.

Estimated Numbers of Hospitalizations for a Moderate Influenza Pandemic Using FluAid Software

Gross Attack Rate	15%	25%	35%
TOTAL: Most Likely	557	928	1,299
Total: Minimum	184	307	430
Total: Maximum	748	1,247	1,746

- The Demand for in-home care services will also escalate during a pandemic, and there is limited surge capacity to dedicate to the needs of persons ill with influenza. With anticipated rates of absenteeism, in-home care agencies may struggle to care for existing caseloads of homebound individuals with chronic conditions or injuries. Unmet needs for in-home care will be triaged through the County EOC, although it is estimated that demand will exceed capacity during peak pandemic periods.

B. Security and Public Safety

- During a moderate to severe influenza pandemic, it is projected that security and public safety needs will be high, due to the demand for limited services and possible disruptions of both public and privately owned critical infrastructure, including transportation, commerce, utilities, food distribution, and communications.
- Local law enforcement (LE) personnel (sheriff and Municipal Police) available for pandemic response are limited, and their numbers may be further reduced by high rates of absenteeism during peak outbreak periods. It is anticipated for this plan that Mutual aid would not be available to supplement local resources.
- High demand for health and medical services, and the probable rationing of limited hospital beds, ventilators, vaccines and antivirals will also tax LE. LE could be called upon to provide additional security for these valuable resources, as well as control any civil disorder, which erupts because of pandemic shortages.
- LE may also be called upon to enforce Q&I orders issued by Public Health Director or curfews and closures, cancellations and restrictions on movement implemented under locally proclaimed states of emergency or disaster.
- Should the Local Receiving Site be opened for receipt of vaccines or antivirals in the County, LE could also be called upon to secure the site.
- Public safety response will be coordinated through the County EOC and follow the responsibilities for the County Sheriff (and LE) as listed under the Cumberland County EOP.

C. Mass Fatality

Influenza pandemics have the potential to cause large numbers of deaths in short periods of time. According to FluAid projections, Cumberland County could see over 421 deaths during a severe pandemic (35% attack rate).

Estimated Numbers of Deaths for a Moderate Influenza Pandemic Using FluAid Software

Gross Attack Rate	15%	25%	35%
TOTAL: Most Likely	101	168	235
Total: Minimum	47	78	109
Total: Maximum	180	301	421

- There are only 18 funeral homes in Cumberland County, and they could be easily overwhelmed during peak pandemic periods, when morbidity and mortality rates are high. Personnel to assist with preparation and burial may also be affected by higher than normal absenteeism, which could further limit the ability to handle remains in a timely manner. Embalming supplies could also be limited due to supply chain interruptions and increased in demand.
- During a pandemic, it may not be possible for families of deceased individuals to arrange cremation, burial and/or funeral services immediately after death. If a ban on public gathering is in effect, funerals would need to be postponed until the ban is lifted.
- Temporary morgues may have to be set up by the County until bodies can be buried or cremated. Available grave property may also be insufficient for the anticipated number of deaths, and new cemetery property or areas for temporary interment may have to be identified. Alternative sites for cremations may also have to be considered.
- “Green Burials” (burials without embalming or casket) are an alternative method of burial, which could be employed during a pandemic to reduce the number of bodies in temporary storage. Since green burials can be preformed with minimal assistance from funeral professions, they could be used by rural County residents (landowners) who wish to establish or use existing family cemeteries, rather than postpone funerals or temporarily store remains. Interest in green burials will require public education on necessary procedures for interment and selection for graves.
- The Cumberland County Emergency Management Director will activate the Mass Fatality, of the Cumberland County EOP to respond to a large number of deaths in the County. Response will be organized by EMS and Medical Examiner, who will coordinate use of refrigerated trucks or set-up of temporary morgues to temporarily store remains.
- It is assumed for the purpose of this plan that assistance from the Federal Disaster Mortuary Team (DMORT) will not be available due to the widespread nature of a pandemic. However, if this is not the case, assistance from DMORT will be requested through the County EOC.

D. Psychosocial Support

- The prolonged nature of a pandemic, in conjunction with the potential for widespread illness and death affects all sectors of society differently between an influenza pandemic and other disasters. Pandemic outbreaks can occur in waves that affect the County for 6 – 8 weeks at a time, and which could recur periodically for up to two years. The lingering threat and ongoing response will inevitably lead to unprecedented stresses on the general public, healthcare workers and other essential personnel. Stress from a pandemic will be cumulative, and the personal and professional toll will be high. Cumberland County will see the need for psychosocial support increase dramatically, as people struggle to cope with the collective impact of this long drawn out disaster.
- A pandemic will be especially hard on workers who face occupational exposure, have family members vulnerable to contracting the disease, or who have to juggle

professional responsibilities with increased personal and family trauma (which could include illness or death of a family member). If workers do not receive adequate psychosocial support, it could impact job performance and contribute to higher rates of absenteeism.

- Individuals with pre-existing health and mental health conditions will also have increased needs during a pandemic.
- Psychosocial support during a pandemic will be managed through the County EOC. The Mental Health Coordinator or Department of Social Services (DSS) Representative will direct emergency mental health operations with assistance from DSS and CCHD as specified in the County All-hazards EOP.
- The following recourses provide mental health services in Cumberland County and will be contacted to distribute information, provide direct support, or coordinate services during a pandemic.
 - The Cumberland County Mental Health Association has programs to provide community education on mental health issues, a hotline to help families of school age children who are coping with emotional problems, and community services such as self help groups.
 - Hospice of Cumberland County has counselors who provide bereavement counseling and support groups, which would be invaluable during response and recovery periods of a pandemic.

4. Vulnerable Populations

A. Definition of Vulnerable Populations

- Vulnerable populations are defined as people who need extra support to be prepared for an emergency or disaster, as well as those who need community support (e.g., resources and /or care) to successfully respond and recover when disasters or emergencies strike. Persons in these groups may be unable or unwilling to fully utilize preparedness, response, and recovery services, or follow emergency instructions. *The Vulnerable Populations Resource List is in Attachment 6.*
- With regard to an influenza pandemic, vulnerable populations also include people who will be hard to reach through normal communications channels, and who will need alternative methods of communication beyond what is normally used to deliver information and recommendations to the general public.
- Cumberland County has identified the following as vulnerable populations for pandemic influenza planning:
 - Physical Disabled
 - Blind and visually impaired
 - Deaf and hard of hearing
 - Senior Citizens and Frail Elderly
 - Homebound

- Homeless and shelter dependent
- Impoverished
- Mentally disabled
- Incarcerated
- Child and Adult facility Residents
- Limited or non- English Speaking
- Immune Compromised (cancer and HIV/AIDS)

IX. COMMUNICATIONS

1. Risk Communications and Public Information

- A. CCHD will serve as the local resource for public health information and updates during all pandemic phases.
- B. Coordination of information released to the public and media will be necessary. All involved agencies will speak with one consistent voice throughout the pandemic. It is vital that everyone delivers the same message and recommendations, so the public does not hear conflicting information or advice from different sources.
- C. The County JIC will be used (as needed) to promote coordination of emergency public information and risk communication among all involved agencies involved in pandemic response.
- D. Media participation is a key component of risk communication and public information, and they will be considered an essential partner in the dissemination of information, public health recommendations, and updates to the public.
- E. A LHIT has been established in the County to ensure coordination of information during public health emergencies. The LHIT includes but is not limited to the following:
 - County PIO
 - CFVMC PIO
 - CCHD Preparedness Coordinator
 - CCHD Health Educator/PIO
 - County EMS
 - Municipal Representatives
 - Ft Bragg and Pope Air Force Public Affairs Officers
 - Public Works Commission (PWC)
 - Red Cross
 - Sherriff's Department PIO
- F. The County LHIT is responsible for assessing the information needs of the public, clinicians, vulnerable populations and local stakeholders. The CCHD Public Health Response Team will assist with determining healthcare providers' knowledge about critical issues such as:
 - Surveillance and Reporting
 - Diagnostics

- Transmission
- Exposure Management
- Self-protection
- Use of Quarantine and Isolation

2. Fact Sheets and Public Information Materials

- A. The CCHD Preparedness Coordinator and Health Educator will compile a library of pandemic preparedness and response information for other sources to be used during influenza pandemic. These documents will be reviewed annually by the Preparedness Coordinator and updated as new materials become available.
- B. Storage Locations: All pre-prepared documents will be stored electronically on the County server, allowing immediate access from any County government equipped computer. The Preparedness Coordinator will have back-up documents on Compact Disc and hard drive.

3. State Communications Assistance

- A. Should the demand for Risk Communication and/or Public Information exceed local capacity, the Public Health Director or County JIC may request assistance from the State [NC Division of Public Health (DPH), Public Health Preparedness and Response (PHP&R), Department of Health and Human Services (DHHS)]. The County and CCHD PIO's will coordinate with Public Affairs Officers from relevant state agencies through the local JIC via Landline, Cell Phone, fax, e-mail, and State Radio.
- B. PHP&R created the Intrastate Communication Enhancement Network (ICCE Net) to ensure regular and consistent communications between state and local public health communications personnel. During a flu pandemic, ICCE Net will be activated to coordinate across the state, and CCHD and the County JIC will regularly monitor their communications.

4. News Inquires

- A. Prior to the activation of the County EOC, news inquires will be directed to the public Health Director or CCHD PIO.
- B. Once the County EOC is activated, all media inquires (including requests for interviews or participation on radio and television talk shows), will be directed to the County PIO, or designee.

5. Release of Information to the Media

- A. To reduce the spread of misinformation and minimize public anxiety, timely, accurate, and comprehensive information will be made available as soon as possible. Updated information will be released on a regular basis.

- B. To the extent possible, media and public information materials will be pre-developed so accurate information can be disseminated to the media and key partners. Where applicable, they will be pre-reviewed and given prior clearance.
- C. Subject matter and technical experts will (where possible) be pre-identified, contacted and trained.
- D. In addition to the information released through the media, websites will be used as a secondary source to disseminate information and recommendations to the public. The CCHD web site will need to be updated regularly, and information distributed on a timely basis to the community partners who can also post information on their web sites.

6. Dissemination of Information to Healthcare Professionals

- A. Letters sent by Postal Service, fax, e-mail, HAN notices or landline phones will be used to disseminate information to healthcare providers, laboratories, area hospitals.
- B. Relevant information (or links to) may also be posted on the CCHD web site.

7. Communications with Vulnerable Populations

- A. In the event of a public health emergency, one of the greatest challenges will be to communicate effectively with Cumberland County's Vulnerable Populations. A broad-based, multi-faceted strategy will be implemented to address the specific information needs of these groups or individuals.
- B. Vulnerable populations have been pre-identified and communication strategies designed to address their specific needs.
- C. Informational materials, translated into Spanish, will be available from the CDC and NCPH. CCHD will maintain contact with NCPH Public Affairs regarding state supplied pandemic materials. Where appropriate, community partners will assist with dissemination of information to vulnerable populations.
- D. Communication strategies for vulnerable populations will include but are not limited to the following activities:
 - As needed, enlist assistance for agencies who have agreed to help with vulnerable populations.
 - Deliver communication materials to key stakeholders/partners organizations, including community organizations, churches, home-health care agencies, schools etc. so they can assist with distribution to target populations or communities.
 - Encourage the general public, via the media, to adopt the buddy system or Neighborhood Watch (check on elderly/homebound neighbors, church members, and friends).
 - Make every attempt to communicate information in a culturally sensitive fashion.

- When possible, encourage respected leaders of particular communities to be spokespersons for delivery of important messages.
- Deliver emergency broadcast messages in Spanish in addition to English and other languages if resources are available.

8. Communications

A. Communications Networks

- CCHD maintains Communications networks and back-up systems to support command and control. There are 800 MHz radios and a mobile Pack Radio. The systems frequencies in use for Emergency Management are found in *Annex A of the Cumberland County EOP, Attachment #12 of the Cumberland County SNS Plan*
- To ensure rapid maintenance and repair of communication system during a public emergency, CCHD will County Emergency Management Services.

B. Internal Communications – CCHD

- Internal Communication systems that CCHD will use during a pandemic include land-line Phones, Cell Phones, Radios, Fax Machines, Runners, Signage, Public Announcement System, email, bullhorn, and 2-way Radios.
- Government Emergency Telecommunications Service (GETS) is designed to be used during an emergency and when normal calling methods are unsuccessful due to network congestion.

C. External Communications – With the State

- CCHD communicates with the state and other local health departments through the HAN and EpiX. In the event of a public pandemic, CCHD will maintain communications with the state via land-line phones or through VHF/UHF Pack Radio. WebEOC may also be available to be used to communicate with NCPH and PHP&R.

9. Media

Current Media Lists will be maintained by the County PIO, with copies kept on file in the County EOC.

X. CONTINUITY OF OPERATIONS

1. County

The Cumberland County All-hazards EOP requires each County Department to develop plans for continuity of operations during disasters. County Department COOP delineates the line of succession for key management and includes procedures for preservation of essential records to ensure operational

capabilities. CCHD has developed a COOP to meet the county requirements and is being kept at Emergency Management Office until finalized.

2. Local Businesses and Industry

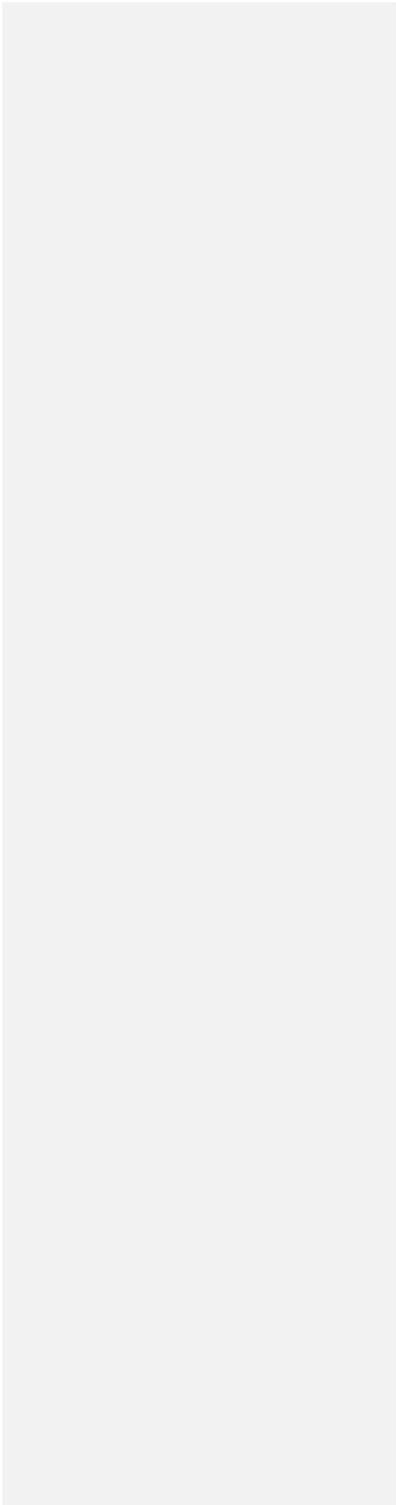
CCHD recognizes that it is important to educate Municipalities, community support agencies, and local business and industry about the need to have continuity plans; since they are critical to maintenance of essential services during a pandemic. The Emergency Management is responsible for contacting business and distributing resources to assist them with the development of a COOP. CCHD will also encourage local business, municipalities, and industry to participate in a regional or state pandemic summit if one is made available through NCPH and PHP&R. Sample Business Continuity Plan can be found at: <http://www.ready.gov/business/downloads/sampleplan.pdf>

XI. PLAN MAINTENANCE AND DISTRIBUTION

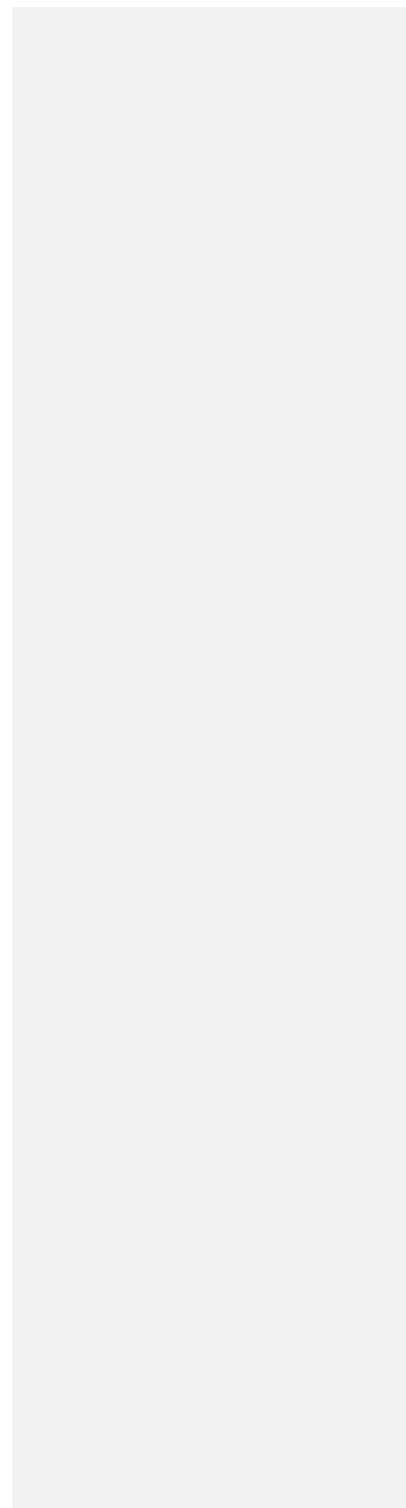
This plan will be reviewed once a year or reviewed and modified as needed. It will be updated by the CCHD Preparedness Coordinator based on deficiencies identified during actual emergencies, exercises, or training. It will also be changed when there are changes in information, legal authorities, resources, or response capabilities of the organization tasked in this plan. CCHD will distribute all revised or updated planning documents to all departments, agencies, and individuals tasked in this document. All revisions will be recorded on the Record of changes and revision page of this document.

XI. REFERENCES

1. North Carolina Public Health's N.C. Pandemic Influenza Plan, January 2007 at: www.epi.state.nc.us/epi/gcdc/pandemic.html
2. Cumberland County Emergency Operations Plan, February 2006 at: <http://intranet/>
3. World Health Organization, WHO Global Influenza Preparedness Plan, 2005 at: www.who.int/csr/resources/publications/influenza/GIP_2005_5Eweb.pdf
4. U.S. Department of Health and Human Services, HHS Pandemic Influenza Plan, November 2005 at: www.hhs.gov/pandemicflu/plan/pdf/HHSPandemicInfluenzaPlan.pdf
5. PandemicFlu.gov / AvianFlu.gov web site at: www.pandemicflu.gov/index.html
6. Center for Disease Control and Prevention, CDC Influenza Pandemic OPLAN, December 2006 at: www.cdc.gov/flu/pandemic/pdf/cdc_oplan_122006.pdf



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ATTACHMENT 1

PANDEMIC INFLUENZA PLANNING COMMITTEE

NAME	ORGANIZATION	PHONE #	E-MAIL
Michael Williams	CCHD Preparedness Coordinator	(910) 433-3885	mwilliams@co.cumberland.nc.us
Cynthia Miller	CCHD Communicable Disease Supervisor	(910) 433-3792	cmiller@co.cumberland.nc.us
Wanda Tart	CCHD Nursing Supervisor	(910) 433-3821	wtart@co.cumberland.nc.us
Jack Hales	Red Cross	(910) 867-8151	chapter@highlandsarc.org
Carolyn Smith	Carolina Collaborative Community Care	(910) 485-1250 Ext 223	csmith@carolinacc.com
Marsha Lunt	WOMAC, Ft Bragg	(910) 907-6688	marsha.a.lunt@us.army.mil
Dan Watkins	VA Medical Center	(910) 482-5168	Dan.watkins@med.va.gov
Kenny Currie	Emergency Management	(910) 321-6735	kcurrie@co.cumberland.nc.us
Bruce Morrison	Cumberland County Schools Safety	(910) 679-7006	brucemorrison@ccs.k12.nc.us
Bill Duke	Department of Social Services	(910)	001@ccdsnc.com
Mike Costa	Fayetteville Emergency Management	(910) 433-1431	mcosta@ci.fay.nc.us
Bonnie Wilson	Dupont Medical		Bonnie.g.wilson@usa.dupont.com
Jean Kiker	NC State Vetrans Home	(910) 482-4131 Ext 7218	Quality_nca@uhs-pruitt.com
Ike Copeland	Public Works Commission	(910)	Ike.copeland@faypwc.com
Robert Dicke	Cumberland County Sheriff Office	(910) 877-5426	rdicke@ccsowc.org
Phyllis McLymore	CCHD Public Information Officer	(910) 433-3894	pmclymore@co.cumberland.nc.us
Ben Major	Fire/EM Battalion Commander	(910) 433-1429	bmajor@ci.fay.nc.us

ATTACHMENT 2

SAMPLE BUSINESS CONTINUITY AND DISASTER PREPAREDNESS PLAN

PLAN TO STAY IN BUSINESS

Business Name

Address

City, State

Telephone Number

❖ If this location is not accessible we will operate from location below:

Business Name

Address

City, State

Telephone Number

❖ The following person is our primary crisis manager and will serve as the company spokesperson in an emergency.

Primary Emergency Contact

Telephone Number

Alternative Number

E-mail

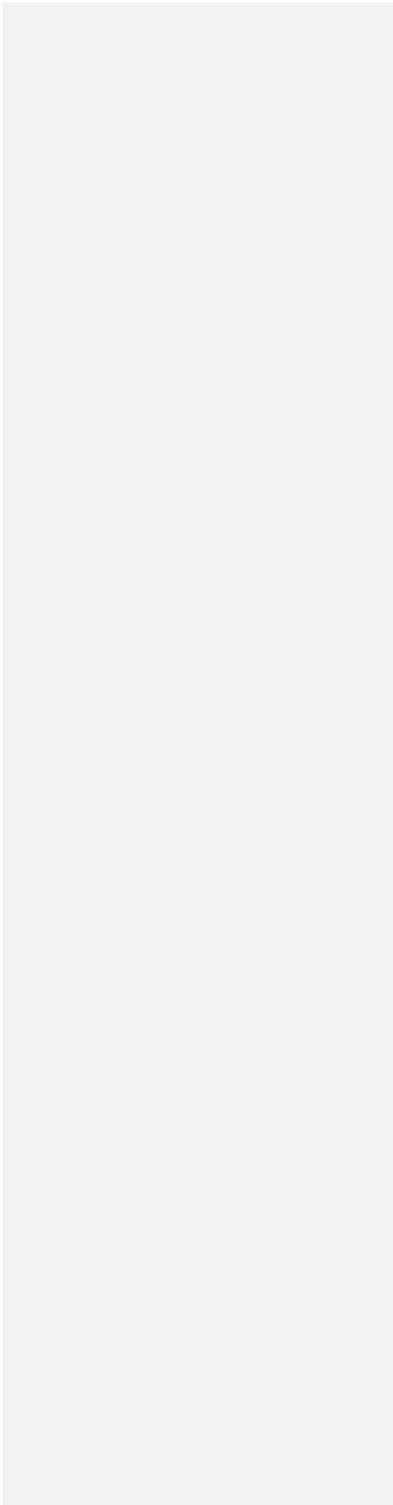
❖ If the person is unable to manage the crisis, the person below will succeed in management:

Secondary Emergency Contact

Telephone Number

Alternative Number

E-mail



EMERGENCY CONTACT INFORMATION

Dial 9-1-1 in an Emergency _____
Non-Emergency Police/Fire _____
Insurance Provider _____

BE INFORMED

❖ The following natural and man-made disasters could impact our business.

- _____
- _____
- _____
- _____

EMERGENCY PLANNING TEAM

❖ The following people will participate in emergency planning and crisis management.

- _____
- _____
- _____
- _____
- _____

WE PLAN TO COORDINATE WITH OTHERS

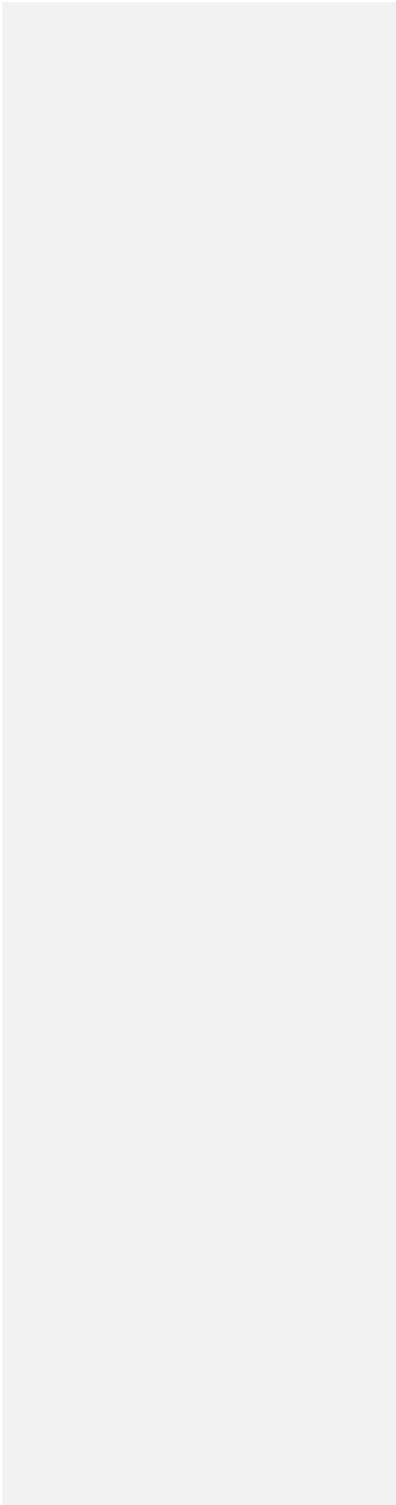
❖ The following people from neighboring businesses and our building management will participate on our emergency planning team.

- _____
- _____
- _____
- _____
- _____

OUR CRITICAL OPERATIONS

The following is a prioritized list of our critical operations, staff and procedures we need to recover from a disaster.

Operation	Staff in Charge	Action Plan
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____



SUPPLIERS AND CONTRACTORS

Company Name: _____
Street Address: _____
City: _____ State: _____ Zip Code: _____
Phone: _____ Fax: _____ E-Mail: _____
Contact Name: _____ Account Number: _____
Materials/Service Provided: _____

❖ If this company experiences a disaster, we will obtain supplies/materials from the following:

Company Name: _____
Street Address: _____
City: _____ State: _____ Zip Code: _____
Phone: _____ Fax: _____ E-Mail: _____
Contact Name: _____ Account Number: _____
Materials/Service Provided: _____

❖ If this company experiences a disaster, we will obtain supplies/materials from the following:

Company Name: _____
Street Address: _____
City: _____ State: _____ Zip Code: _____
Phone: _____ Fax: _____ E-Mail: _____
Contact Name: _____ Account Number: _____
Materials/Service Provided: _____

EVACUATION PLAN FOR _____ LOCATION

(Insert address)

- We have developed these plans in collaboration with neighboring businesses and building owners to avoid confusion or gridlock.
- We have located, copied and posted building and site maps.
- Exits are clearly marked.
- We will practice evacuation procedures ____ times a year.

If we must leave the workplace quickly:

1. Warning System: _____
We will test the warning system and record results ____ times a year.
2. Assembly Site: _____
3. Assembly Site Manager & Alternate: _____
 - a. Responsibilities Include _____

4. Shut Down Manager & Alternate: _____

b. Responsibilities Include:

5. _____ is responsible for issuing all clear.

SHELTER-IN-PLACE PLAN FOR _____ LOCATION

(Insert address)

- We have talked to co-workers about which emergency supplies, if any, the company will provide in the shelter location and which supplies individuals might consider keeping in a portable kit personalized for individual needs.
- We will practice shelter procedures ____ times a year.

If we must take shelter quickly:

1. Warning System: _____

We will test the warning system and record results ____ times a year.

2. Storm Shelter Location: _____

3. "Seal the Room" Shelter Location: _____

4. Shelter Manager & Alternate:

a. Responsibilities Include: _____

5. Shut Down Manager & Alternate:

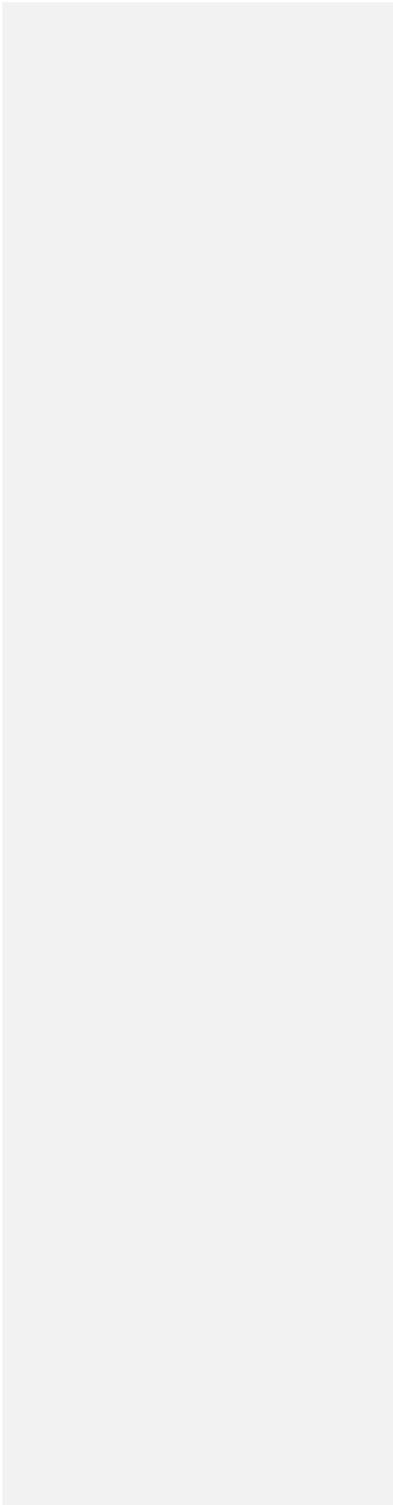
a. Responsibilities Include: _____

6. _____ is responsible for issuing all clear.

COMMUNICATIONS

❖ We will communicate our emergency plans with co-workers in the following way:

❖ In the event of a disaster we will communicate with employees in the following way:



CYBER SECURITY

❖ To protect our computer hardware, we will:

❖ To protect our computer software, we will:

❖ If our computers are destroyed, we will use back-up computers at the following location:

RECORDS BACK-UP

❖ _____ is responsible for backing up our critical records including payroll and accounting systems.

❖ Back-up records including a copy of this plan, site maps, insurance policies, bank account records and computer back ups are stored onsite _____.

❖ Another set of back-up records is stored at the following off-site location:

❖ If our accounting and payroll records are destroyed, we will provide for continuity in the following ways:

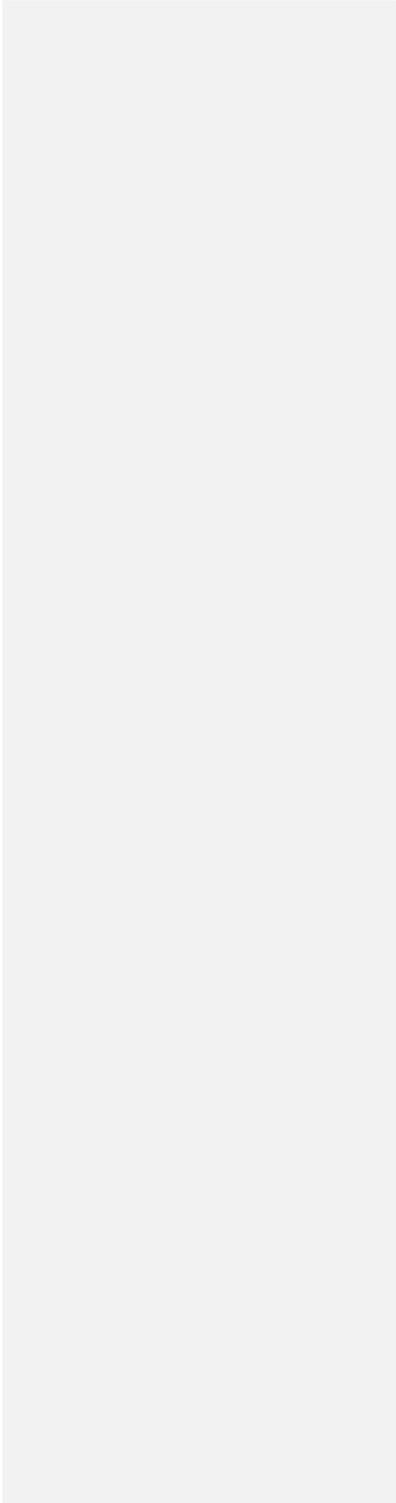
EMPLOYEE EMERGENCY CONTACT INFORMATION

The following is a list of our co-workers and their individual emergency contact information:

NAME	ADDRESS	PHONE
_____	_____	_____
_____	_____	_____
_____	_____	_____

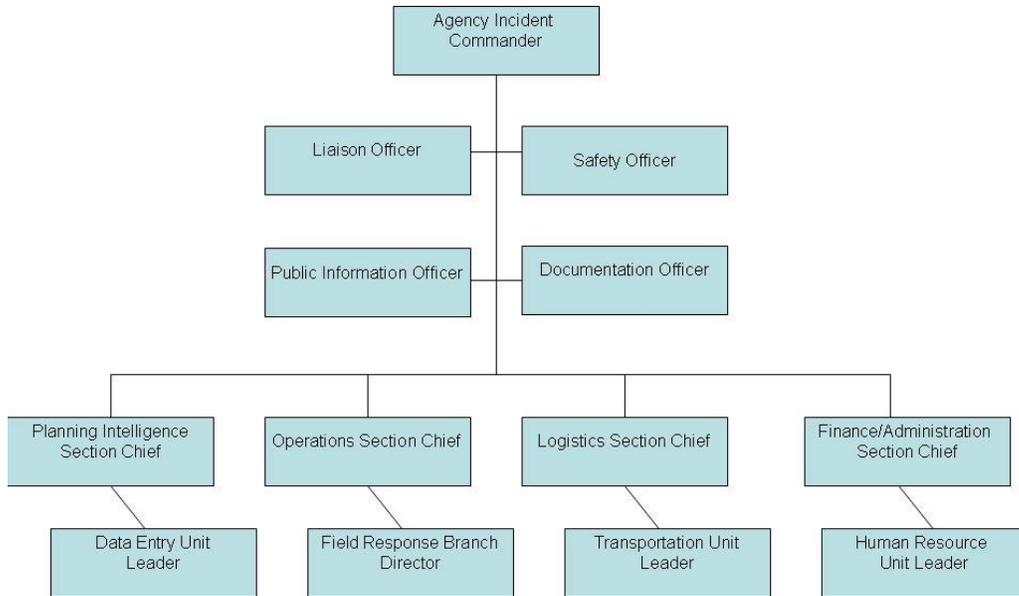
ANNUAL REVIEW

❖ We will review and update this business continuity and disaster plan in _____.



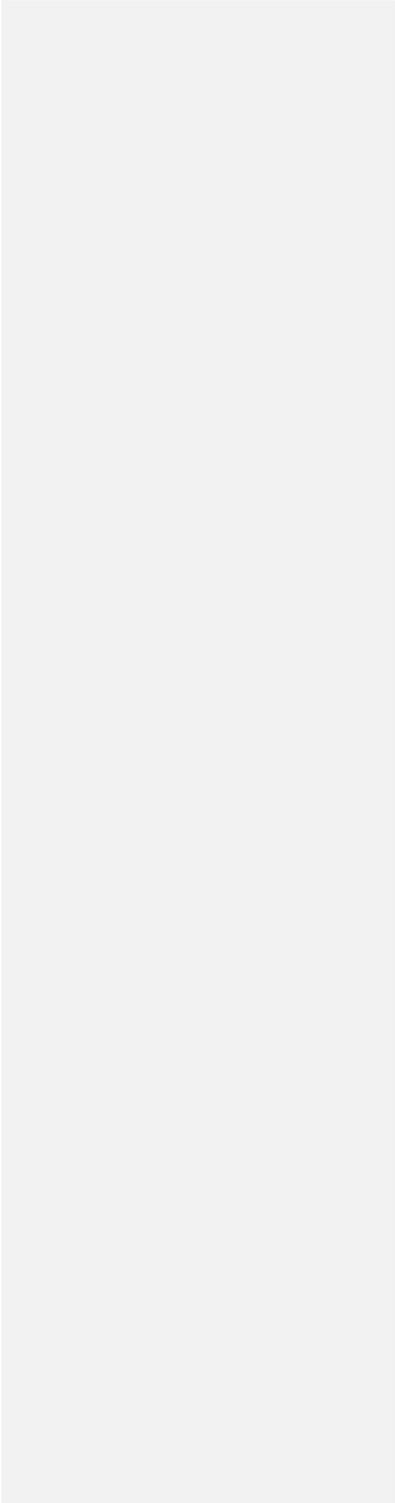
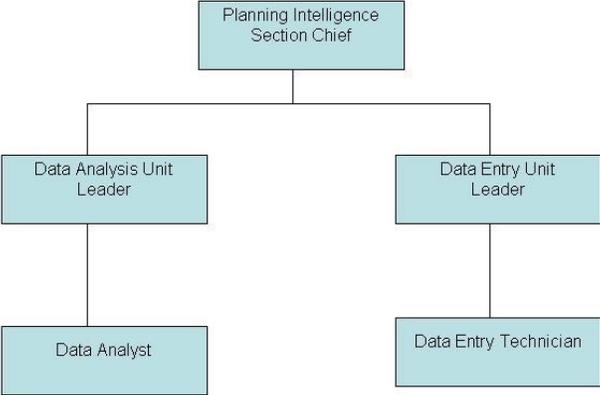
ATTACHMENT 3
Public Health Emergency Response ICS Organization Tree

Command Level



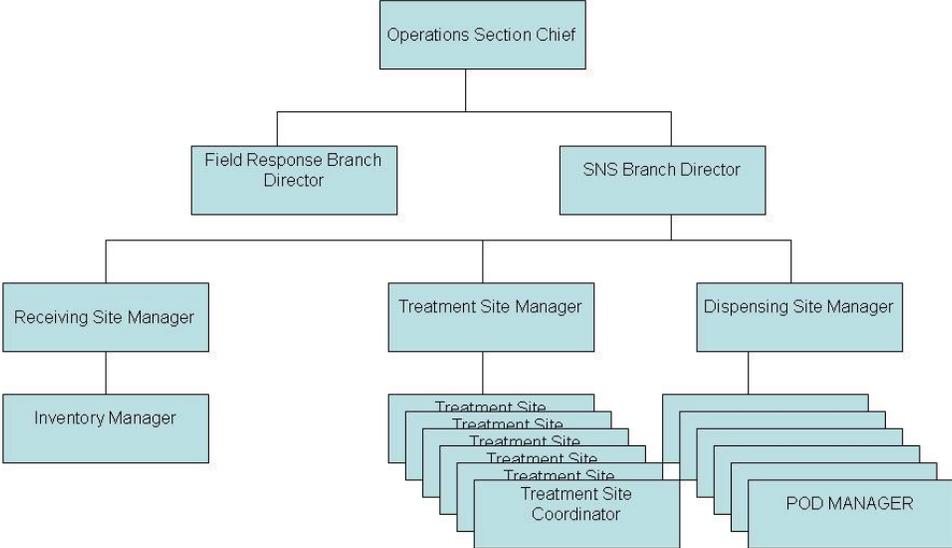
Public Health Emergency Response ICS Organization Tree

Planning Section



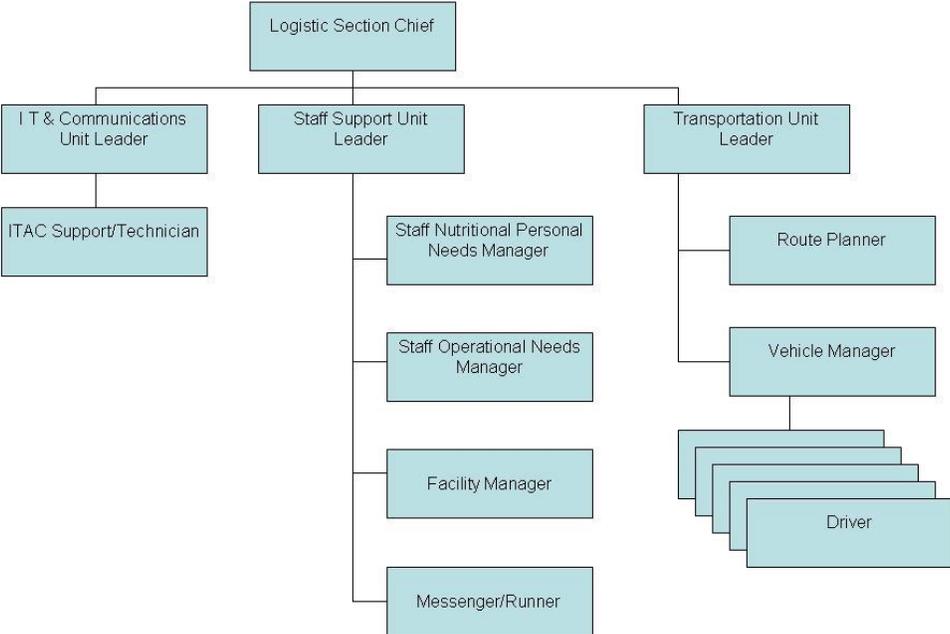
Public Health Emergency Response ICS Organization Tree

Operations Section



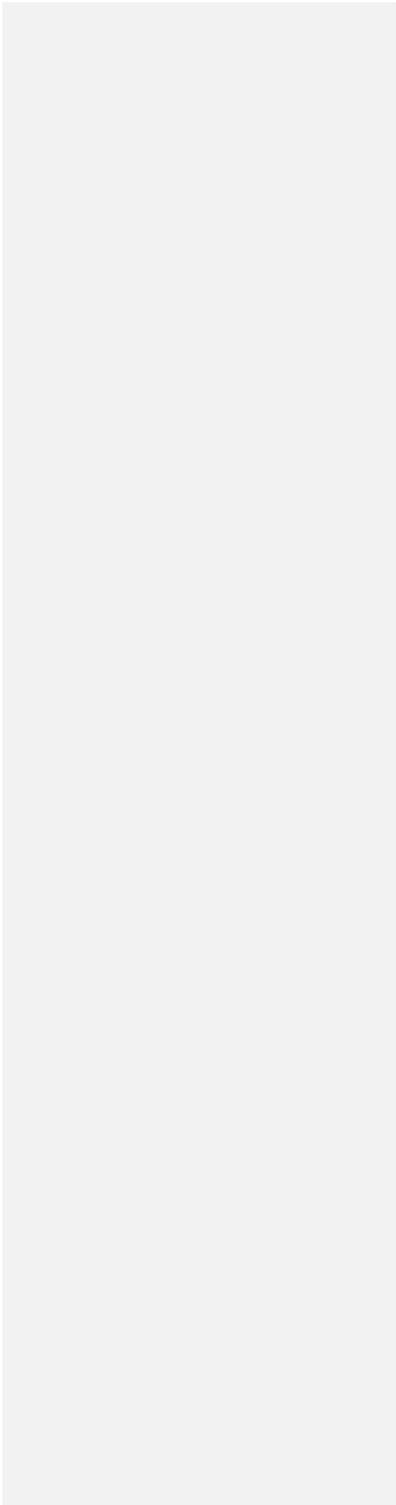
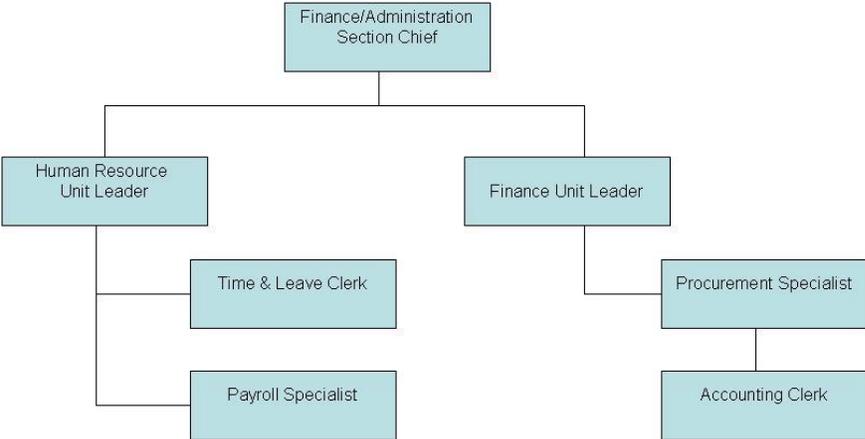
Public Health Emergency Response ICS Organization Tree

Logistic Section



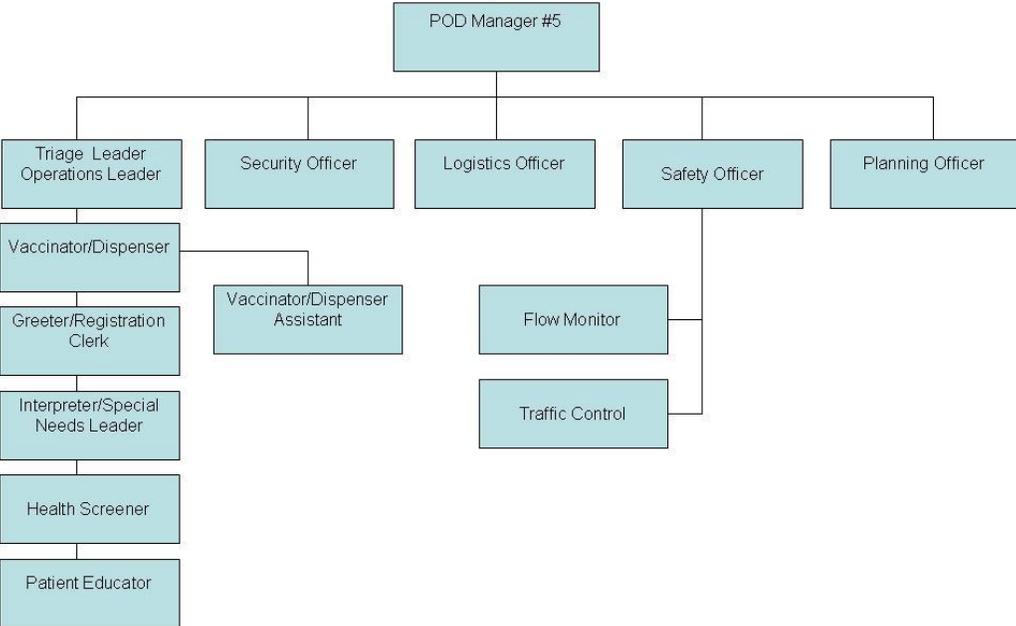
Public Health Emergency Response ICS Organization Tree

Finance/Administration Section



Public Health Emergency Response ICS Organization Tree

POD Operations



ATTACHMENT 4

ISOLATION ORDER
Pandemic _____ Influenza

You may have been exposed or are reasonably suspected of being exposed to pandemic _____ influenza and have developed some symptoms of pandemic _____ influenza. Pandemic _____ influenza is highly contagious and is spread person to person mostly by coughing or sneezing. If pandemic _____ influenza spreads in the community, it will have severe public health consequences. Your illness requires that you be isolated and requires further public health investigation and monitoring.

I, [name of health director] of [name of agency], pursuant to authority vested in me by North Carolina General Statute (NCGS) 130A-145; issue this ISOLATION ORDER to [name of person].

You are required to remain at the following location [_____] for the time specified in this ISOLATION ORDER: _____. [Length of time from symptom to onset/ Exposure]

You are required to:

- o Follow these instructions for the duration of this order.
- o Contact the health department if, during the duration of this order, your symptoms become worse, or you develop any new symptom such as fever, headache, muscle aches or respiratory difficulties, including sore throat, cough or breathing difficulties.
- o Comply with other requirements based on individual circumstances of the isolation or the disease: _____
- o Comply with advisory for _____ given to you at the time you received this order.

If you fail to comply with this **ISOLATION ORDER**, you will be subject to prosecution pursuant to **NCGS 130A-25**, which provides for imprisonment for up to two (2) years, as well as pretrial detention without bail under **NCGS 15A-534.5**.

The staff of this Health Department is available to provide assistance and counseling to you concerning your pandemic _____ influenza and compliance with this **ISOLATION ORDER**.

The authority of this **ISOLATION ORDER** to restrict your freedom of movement expires in 30 days from the date of this order unless extended or modified by a court pursuant to **NCGS 130A-145**. You may petition the Superior Court for review of the restriction of your freedom of movement contained in this **ISOLATION ORDER** pursuant to **NCGS 130A-145(d)**.

Health Director	Date	Time

Issued by: _____ I have received the original copy of this order:

Patient Signature Date

ATTACHMENT 5

VACCINE PRIORITY GROUP RECOMMENDATIONS

Tier	Subtier	Population	Rationale
1	A	<ul style="list-style-type: none"> Vaccine and antiviral manufacturers and others essential to manufacturing and critical support (~40,000) Medical workers and public health workers who are involved in direct patient contact, other support services essential for direct patient care, and vaccinators (8-9 million) 	<ul style="list-style-type: none"> Need to assure maximum production of vaccine and antiviral drugs Healthcare workers are required for quality medical care (studies show outcome is associated with staff-to-patient ratios). There is little surge capacity among healthcare sector personnel to meet increased demand
	B	<ul style="list-style-type: none"> Persons > 65 years with 1 or more influenza high-risk conditions, not including essential hypertension (approximately 18.2 million) Persons 6 months to 64 years with 2 or more influenza high-risk conditions, not including essential hypertension (approximately 6.9 million) Persons 6 months or older with history of hospitalization for pneumonia or influenza or other influenza high-risk condition in the past year (740,000) 	<ul style="list-style-type: none"> These groups are at high risk of hospitalization and death. Excludes elderly in nursing homes and those who are immunocompromised and would not likely be protected by vaccination
	C	<ul style="list-style-type: none"> Pregnant women (approximately 3.0 million) Household contacts of severely immunocompromised persons who would not be vaccinated due to likely poor response to vaccine (1.95 million with transplants, AIDS, and incident cancer x 1.4 household contacts per person = 2.7 million persons) Household contacts of children <6 month olds (5.0 million) 	<ul style="list-style-type: none"> In past pandemics and for annual influenza, pregnant women have been at high risk; vaccination will also protect the infant who cannot receive vaccine. Vaccination of household contacts of immunocompromised and young infants will decrease risk of exposure and infection among those who cannot be directly protected by vaccination
	D	<ul style="list-style-type: none"> Public health emergency response workers critical to pandemic response (assumed one-third of estimated public health workforce=150,000) Key government leaders 	<ul style="list-style-type: none"> Critical to implement pandemic response such as providing vaccinations and managing/monitoring response activities Preserving decision-making capacity also critical for managing and implementing a response

	A	<ul style="list-style-type: none"> • Healthy 65 years and older (17.7 million) • 6 months to 64 years with 1 high-risk condition (35.8 million) • 6-23 months old, healthy (5.6 million) 	<ul style="list-style-type: none"> • Groups that are also at increased risk but not as high risk as population in Tier 1B
2	B	<ul style="list-style-type: none"> • Other public health emergency responders (300,000 = remaining two-thirds of public health work force) • Public safety workers including police, fire, 911 dispatchers, and correctional facility staff (2.99 million) • Utility workers essential for maintenance of power, water, and sewage system functioning (364,000) • Transportation workers transporting fuel, water, food, and medical supplies as well as public ground public transportation (3.8 million) • Telecommunications/IT for essential network operations and maintenance (1.08 million) 	<ul style="list-style-type: none"> • Includes critical infrastructure groups that have impact on maintaining health (e.g., public safety or transportation of medical supplies and food); implementing a pandemic response; and on maintaining societal functions
3		<ul style="list-style-type: none"> • Other key government health decision-makers (estimated number not yet determined) • Funeral directors/embalmers (62,000) 	<ul style="list-style-type: none"> • Other important societal groups for a pandemic response but of lower priority
4		<ul style="list-style-type: none"> • Healthy persons 2-64 years not included in above categories (179.3 million) 	<ul style="list-style-type: none"> • All persons not included in other groups based on objective to vaccinate all those who want protection

Antiviral Drug Priority Group Recommendations

	Group	Rationale
1	Patients admitted to hospital	Consistent with medical practice and ethics to treat those with serious illness and who are most likely to die
2	Health care workers with direct patient contact and emergency medical service (EMS) providers	Healthcare workers are required for quality medical care. There is little surge capacity among healthcare sector personnel to meet increased demand
3	Highest risk outpatients—immunocompromised persons and pregnant women	Groups at greatest risk of hospitalization and death; immunocompromised cannot be protected by vaccination
4	Pandemic health responders (public health, vaccinators, vaccine and antiviral manufacturers), public safety (police, fire, corrections), and government decision-makers	Groups are critical for an effective public health response to a pandemic.
5	Increased risk outpatients—young children 12–23 months old, persons >65 yrs old, and persons with underlying medical conditions	Groups are at high risk for hospitalization and death.
6	Outbreak responses in nursing homes and other residential settings	Treatment of patients and prophylaxis of contacts is effective in stopping outbreaks; vaccination priorities do not include nursing home residents.
7	Health Care Workers in emergency departments, intensive care units, dialysis centers, and EMS providers	These groups are most critical to an effective healthcare response and have limited surge capacity. Prophylaxis will best prevent absenteeism.
8	Pandemic societal responders (e.g., critical infrastructure groups as defined in the vaccine priorities) and HCW without direct patient contact	Infrastructure groups that have impact on maintaining health, implementing a pandemic response, and maintaining societal functions
9	Other outpatients	Includes others who develop influenza and do not fall within the above groups
10	Highest risk outpatients	Prevents illness in the highest risk groups for hospitalization and death
11	Other Health Care Workers with direct patient contact	Prevention would best reduce absenteeism and preserve optimal function.

ATTACHMENT 6

VULNERABLE POPULATION RESOURCE LIST

Department of Social Services	323-1540
Mental Health Center	323-0601
Developmental Disabilities	822-5066
Psycho Social Rehabilitation	484-1212
Senior Aides	678-7644
Veterans Services	677-2972
County Jail	672-5630
NC State Veterans Home	482-4131
American Red Cross	867-8151
Cape Fear Valley Hospice	609-6741
Carolina Collaborative Community Care Inc	485-1250
Advantage Hospice & Homecare	689-0360
Home Health Services of Cumberland County	860-4764
Carolina Rehab Center of Cumberland	429-1690
Firm Foundation	862-9800

