WILSON COUNTY EMERGENCY MANAGEMENT AGENCY

PANDEMIC INFLUENZA OPERATING GUIDE

WILSON COUNTY, TENNESSEE

Version 2
November 1, 2008

Wilson County Emergency Management Pandemic Influenza Guidelines
Change Control Documentation

Changes will be periodically published by the Wilson County Emergency Management Agency (WEMA) and distributed to all guidelines holders registered with WEMA and additional copies will be available for the public at Station 1, located at 110 Oak Street, Lebanon, Tennessee 37087-3332. It is the responsibility of each recipient to make sure that they have the most current copy and to destroy any outdated copies of the guideline. Changes should be communicated to and made available for all personnel to review. Refer questions or ideas to the WEMA Planning Officer at 615-444-8799.

Remove page(s) to be replaced or deleted and then insert new pages.

CHANGE NUMBER	PAGE NUMBER(S)	DATED	PAGE NUMBER(S)	DATED		CHANGE DATE COMPLETED BY

NOTICE OF APPROVAL

The Wilson County Emergency Management Pandemic Influenza Guidelines are intended to be an operational guideline in the event of an outbreak of Pandemic Influenza. The Mayor, by affixing his/her signature hereto, signifies their approval of this document to include the guidelines and responsibilities contained herein.

Original Signed by Robert Dedman

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Robert Dedman
Wilson County Mayor

Original Signed by John Jewell

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John N. Jewell
Director, Wilson County Emergency Management

Wilson County Emergency Management Agency
Pandemic Influenza Guideline

The Wilson County Emergency Management Agency Pandemic Influenza Plan is a derivative of the Tennessee Department of Health Pandemic Influenza Response Plan and addresses specific issues within Wilson County. Information that is not generated at the local level defaults to the planning and guidelines stated in the Tennessee Department of Health Pandemic Influenza Response Plan. Additionally, attachments include the Wilson County Annex to the State Plan, the Pandemic Flu section of the University Medical Center's "Emergency Management Manual," and the *Management of Dead Bodies after Disasters; A Field Manual for First Responders*, published by the Pan American Health Organization.

Comprehensive information about the pandemic flu and plans to address its presence are found in the state's pandemic flu plan and on the official U.S. Government website. The Tennessee Department of Health's Pandemic Flu Plan is available on the state's website at www.health.state.tn.us and the federal website is located at www.pandemicflu.gov .

The use of or reprints of this plan by any other agency or organization is authorized to help individuals, businesses and communities with pandemic preparedness. Assistance in developing a pandemic flu plan is available through the Wilson County Health Department or the Planning Officer for Wilson County Emergency Management Agency.

STATEMENTS AND DISCLAIMERS

The Wilson County Emergency Management Agency Pandemic Influenza Plan is a comprehensive plan that lays the groundwork for operations in the event of an outbreak of pandemic influenza, and can be adapted for other types of pandemic outbreak.

All phases of this guideline are in accordance with the National Incident Management System (NIMS) and guidelines set forth by the Federal Emergency Management Agency (FEMA). Command structures will conform to NIMS standards during emergency operations. Additionally, this plan follows in line with National and State Pandemic Flu guidelines set forth by the Center for Disease Control (CDC), the World Health Organization (WHO) and the Tennessee Department of Health (TDH).

This plan is meant to be a foundational piece upon which will be built the actual operations in the event of an outbreak of pandemic flu. The plan is intended to be updated based upon emerging information and ideas and adaptive based upon the severity of the virus and the virulence of the pandemic.

A copy of this plan is available on the Wilson County Emergency Management Agency web site: www.wilsonema.com. Or, to confirm you have the e most recent copy of this plan call the WEMA Planning Officer, 615-444-8799.

If you have additional ideas that may improve upon this plan please contact WEMA at 615-444-8799. All comments and ideas are welcomed and encouraged.

WEMA does not discriminate based upon race, color, handicap or sexual preference. If you need assistance reading or comprehending any parts of this emergency operations guideline please contact us and we will make every effort to accommodate you.

Wilson County Emergency Management Agency Pandemic Influenza Guideline
November 1, 2008

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Attachments

Attachment 1: Wilson County Health Department Annex to the Tennessee Department of Health Pandemic Flu Plan

Attachment 2: University Medical Center Pandemic Flu Plan

Attachment 3: *Management of Dead Bodies after Disasters: A Field Manual for First Responders* published by the Pan American Health Organization

Wilson County Emergency Management Agency Pandemic Influenza Response Standard Operational Guideline

I. Lead County Agency

The Wilson County Health Department, in cooperation with the Tennessee Department of Health (TDH) Bureau of Health Services Communicable and Environmental Disease Services (CEDS), is the agency responsible for providing public health planning for pandemic influenza in Wilson County. With direction provided by the State Epidemiologist, the Medical Director of the Immunization Program will coordinate the department's preparedness activities at the local level with the Wilson County Health Department.

II. Support Agencies

State Support Agencies and their local/regional divisions which will work with the Wilson County Department of Health in the management of pandemic influenza within Wilson County, Tennessee are listed below:

1. Department of Agriculture
2. Department of Environment and Conservation
3. Department of Military
4. Department of Human Services
5. Department of Commerce and Insurance
6. American Red Cross
7. Department of Mental Health and Developmental Disability
8. Department of Safety
9. Tennessee Emergency Management Agency
10. Tennessee Bureau of Investigation

The federal agency that will provide public health laboratory, epidemiologic and medical support during pandemic influenza is the Department of Health and Human Services (HHS), primarily the Centers for Disease Control and Prevention (CDC). Federal planning resources and information to support local preparation and response for all sectors are publicly available at www.pandemicflu.gov.

III. Purpose

The purpose of this plan is to create an operational guideline for ethical and evidence based emergency operations for the Wilson County Emergency Management Agency in the event of a pandemic influenza outbreak or an influenza strain with pandemic potential. This operations guide will also serve as a resource for other agencies within Wilson County, Tennessee. This plan has been created to act as a local derivative of the Tennessee State Department of Health Core Plan, which will be instituted during a pandemic or

outbreak of a novel influenza virus (or other contagious biological element with pandemic potential). This document will serve as an operational annex for Emergency Support Function 8, Health and Medical Services, which is part of the Wilson County Emergency Management Operations Plan (EOP). The EOP will be implemented during a pandemic.

IV. Situation

Novel influenza viruses periodically emerge to cause global epidemics, known as pandemics, either directly from a mutated animal influenza virus or out of the combination of an animal virus with a circulating human influenza virus. Such viruses circumvent normal immune defenses and cause illness and death at higher rates than seasonal influenza strains. Compared to seasonal influenza, a larger proportion of deaths occur in persons less than 65 years of age.

Novel influenza viruses that cause pandemics are transmitted from person to person in the same manner as seasonal influenza, typically, by mucosal inoculation with large respiratory droplets caused by coughing or sneezing or by touching contaminated environmental surfaces and subsequently touching one's mouth, nose or eyes.

Ten pandemics have occurred in the past 300 years and there is historical evidence of the success or failure of various strategies to contain or control the spread of influenza. With the exceptions of vaccines, antiviral medications, and advanced medical care, many of the strategies used to respond to a modern pandemic are the same as the effective measures of previous generations. For example, although the compulsory restriction of movement in or out of certain regions was not effective in any but the world's most remote island communities, broad community strategies used to reduce dense social contact were effective and the failure to use such strategies was devastating. The key activities to minimize the impact of a pandemic influenza virus are:

1. Surveillance for disease activity for situational awareness and timely activation of response strategies
2. Accurate communication within and among volunteer and professional responding organizations and with the general public
3. Use of social distancing measures to reduce unnecessary close contacts during a pandemic wave
4. Distribution and use of all available medical resources and personnel

A pandemic is defined by the Centers for Disease Control (CDC) as a worldwide outbreak of disease. The world experiences an average of three pandemics each century. Type "A" influenza is the leading cause of pandemics. The influenza virus is a specific disease that targets the respiratory system and subsequently infects other organs throughout the body. Pandemic influenza is caused by a different type of virus from the seasonal influenza, is highly contagious and currently there is no vaccine for pandemic influenza. When pandemics occur, they typically come in waves lasting 6-8 weeks with a morbidity

(sickness) rate of over 50% of the population. Once pandemics begin, they are extremely difficult to stop as influenza is among the fastest mutating of all viruses and hides from the human immune system quite efficiently.

The last three pandemics occurred in 1968, 1957 and 1918, so statistically speaking, the next pandemic is overdue. The deadliest of all the pandemics occurred in 1918. The lessons learned from it are being applied today to help prepare the world for the next pandemic and attempt to mitigate its devastating effects. Some facts from the 1918 pandemic include:

- No one could purchase goods in infected communities as owners closed their businesses because workers were either too sick or afraid of getting sick to work.
- A large percentage of transportation workers were absent, shutting down public transportation.
- Treatment for the virus created shortages in drugs, medical supplies and equipment.
- The virus was so efficient that it spread to nearly every city, town, and home in the world.
- It is estimated that 5% of the world's population died from the 1918 influenza.
- The virus killed enough people in the United States to lower the life expectancy by more than 10 years.

The world has changed dramatically since 1918. The population has increased significantly. The aviation industry has made it possible to travel anywhere or obtain goods from virtually anywhere in the world almost overnight. Based on historical facts from previous pandemics applied to current world conditions, leading researchers have stated the following:

- A massive and early public education campaign is necessary
- Ruthless intervention may interrupt the progress and create occasional firebreaks in a pandemic influenza outbreak.
- No matter how prepared, individual communities will likely be overwhelmed during the peak of the epidemic.
- Each community must rely on its own resources to the extent possible.
- A large percentage (as high as 70% by some estimates with school closures factored into the equation) of workers will be absent from their jobs.
- Transportation industries including airlines, buses, trains, etc., will have a difficult time offering services due to shortages in workers.
- The disruption of the just-in-time delivery system of the US will have a devastating result on food services and the US economy as:
    - Many meals are eaten outside the home
    - A large percentage of food items are perishable
- The US has fewer hospital beds per capita than it did during the last pandemic of 1968.
- The US healthcare system will be easily overwhelmed and the healthcare systems in developing countries will struggle to operate at all.

- Even a mild pandemic similar to that of 1968 will result in catastrophic economic losses and social disruption.

Currently, the governments of the world are paying close attention to the H5N1 virus and taking steps to prevent the virus from becoming transmissible from human to human. Most pandemics of known origin began in Asia. Today the world has the highest combination of people and animals as in all of history thus providing the largest base for the influenza virus to grow and spread.

The likelihood of a pandemic influenza outbreak is higher than that of a terrorist attack on American soil. The Department of Homeland Security, although generally quiet regarding this issue, currently views pandemic influenza as the most lethal and likely of all threats facing the US. Steps must be taken now, before onset, to protect our community against a future pandemic. These steps include:

- A massive public education campaign. The Wilson County Health Department, Wilson County Emergency Management Agency and University Medical Center are working together to protect the citizens of Wilson County and this includes educating citizens on preventative measures. These organizations are available to provide informational sessions to schools, businesses, civic groups, community centers, or any other interested groups.
- Building a stockpile of water and non-perishable food items for every member of the family (including pets) to last at least two weeks or longer.
- Purchasing personal protective equipment (PPE) such as N95 masks, hand sanitizer, and cleaning products
- Schools developing plans to teach via alternative methods such as distance learning in the event of lengthy school closures.
- Businesses developing plans to remain open with a reduced workforce

The better prepared Wilson County is for a pandemic, the safer everyone will be. Pandemic influenza is a viable threat and it will take the efforts of everyone to best prepare Wilson County and mitigate its impact. The estimate by the WHO and CDC is that the pandemic flu will cause up to 150 million deaths worldwide and an economic impact of over 400 trillion dollars**.** To learn more information regarding the potential of pandemic influenza you can contact the Wilson County Health Department. Additionally, these web sites have current information regarding the threat of H5N1: http://www.pandemicflu.gov and http://voanews.com/english/avian_flu.cfm. The book, "The Great Influenza," by John M. Barry is an excellent source of information regarding the 1918 pandemic influenza.. Information for this section was taken from the CDC website and "The Great Influenza" by John M. Barry.

Pandemic Threat Categories Defined by World Health Organization (WHO):

The duration of each period of phase is unknown, but the emergence of pandemic viruses is considered inevitable.

Pandemic Phases	Public Health Goals
Interpandemic Period	
Phase 1 – No new influenza virus subtypes detected in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk of human infection or disease is considered low.	Strengthen influenza pandemic preparedness at all levels. Closely monitor human and animal surveillance data.
Phase 2 – No new influenza virus subtypes detected in humans. However, a circulating animal influenza virus subtype poses substantial risk of human disease.	Minimize the risk of transmission of animal influenza virus to humans; detect and report such transmission rapidly if it occurs.
Pandemic Alert Period	
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.	Ensure rapid characterization of the new virus subtype and early detection, notification and response to additional cases.
Phase 4 – Small cluster(s) of human infection with limited human-to-human transmission but spread is highly localized suggesting that the virus is not well adapted to humans.	Contain the new virus within limited foci or delay spread to gain time to implement preparedness measures, including vaccine development.
Phase 5 – Larger cluster(s) of human infection but human-to-human spread is localized, suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk).	Maximize efforts to contain or delay spread to possibly avert a pandemic, and to gain time to implement response measures.
Pandemic Period	
Phase 6 – Pandemic is declared. Increased and sustained transmission in the general population.	Implement response measures including social distancing to minimize pandemic impacts

V. Planning

A. Basis of Plan

1. This plan is based upon a pandemic of the severity of the 1918-1919 influenza pandemic and public health inventions described herein represent maximum interventions under those conditions. If the characteristics of the actual event do not reflect planning assumptions, responses will be modified accordingly.

2. While focusing primarily on the response to a pandemic (WHO Phase 6), the plan is also applicable to the response to imported or acquired human infections with a novel influenza virus with pandemic potential (WHO Phases 3-5).

B. Objectives of Pandemic Planning

1. Primary objective is to minimize morbidity (illness) and mortality (death) from disease.

2. Secondary objectives are to preserve social function and minimize economic disruption.

C. Assumptions for State and Local Planning

1. The plan reflects *current* federal, state and local response capacity and will be revised as needed in the light of changes in the various aspects related to a pandemic outbreak.

2. Tennessee state and local pandemic plans should be consistent with each other and with federal guidelines. However, deviations may be necessary to address specific unique situations which may arise locally.

3. Public education and the empowerment of individuals, businesses, and communities to act to protect themselves are primary focuses of state and local planning efforts. The federal and state government capacity to meet the needs of individuals will be limited by the magnitude of disease and scarcity of specific therapeutic and prophylactic interventions and the limited ability of legal measures to control disease spread.

D. Disease Transmission Assumptions

1. Incubation period averages 2 days (range 1-10.) The WHO recommends that, if quarantine is used, it be used up to 7 days following exposure.

2. Sick patients may shed the virus up to 1 day before symptom onset, although transmission of disease before symptoms begin is unusual. The peak infection period is the first 2 days of illness, especially during febrile periods (children and immunocompromised persons shed more virus and for a longer time).

3. Each ill person can cause an average of 2-3 secondary cases if no interventions are implemented.

4. There will be at least two “waves” (local epidemics) of pandemic disease in most communities; they will be more severe if they occur during fall and/or winter.

5. Each wave of pandemic disease in a community will last 6-8 weeks.

6. The entire pandemic period (all waves) will last about two years before the virus becomes a routine seasonal influenza strain.

7. Disease outbreaks may occur in multiple locations simultaneously or in isolated pockets.

E. Clinical Assumptions during the Entire Pandemic Period (from Federal Planning Guidance Issued in November 2005)

1. All persons are susceptible to the virus.

2. Clinical disease attack rate of 30% or greater (range: 40% of school - aged children to 20% of working adults).

3. 50% of clinically-ill (15% of population) will seek outpatient medical care.

4. 2% - 20% of these will be hospitalized, depending on virulence of strain.

5. Overall mortality estimates range from 0.2% to 2% of all clinically ill patients.

6. During an 8-week wave 40% of employees may be absent from work because of fear, illness or to care for a family member (not including absenteeism if schools are closed).

7. Hospitals will see 25% more patients than normal needing hospitalization during the local pandemic wave.

F. Estimates of Burden of Illness in Tennessee (Derived from ational Estimates from 2005 HHS Planning Guidance)

Characteristic	Moderate	Severe
Illness (30%)	1.8 million	1.8 million
Outpatient Care	900,000	900,000
Hospitalization	17,300	198,000
ICU Care	2,575	29,700
Mechanical Ventilation	1,300	14,850
Deaths (Case fatality rate)	4,180 (0.2%)	38,060 (2%)

G. Assumptions about the Pandemic Alert Period (WHO Phases 3-5)

1. During the pandemic alert period, a novel influenza virus causes infection among humans who have direct contact with infected animals and, in some cases, through inefficient transmission from person to person. By definition, during the Pandemic Alert Period, cases are sporadic or limited in number with human-to-human spread not yet highly efficient. Limited clusters of disease during this period can be addressed by aggressive steps to stop its spread and treat infected individuals.
2. Individual case management will be conducted during the Pandemic Alert Phase. Isolation or quarantine, including the use of court orders when necessary, will be employed to help prevent further spread of the virus. Antiviral medications will be used during this time for post-exposure prophylaxis or aggressive early treatment of cases (supplies permitting).
3. Efforts to identify and prevent spread of disease from imported human cases and from human cases resulting from contact with infected animals will continue until community transmission has been established in the United States. Community transmission is defined as transmission from person to person in the United States with a loss of clear epidemiologic links among cases. This may occur some time after the WHO declares that a pandemic has begun (WHO Phase 6).

VI. Concept of Operations

A. WHO Phases 3-5 (Pandemic Alert Period)

The lead agency for addressing influenza disease among animals is the Department of Agriculture (described in EOP ESF 11). The Tennessee Department of Health (TDH) will provide support to the Department of Agriculture in the prevention of human infections and in surveillance and management of human disease as it pertains to contact with infected animals.

The TDH is the lead agency for responding to human influenza disease caused by a novel influenza virus with pandemic potential, whether imported from an area with ongoing disease transmission or acquired directly from an animal in Tennessee. The State Health Operations Center (SHOC) will be set up to address a widespread and lengthy pandemic. Isolation and quarantine guidelines will be implemented during the pandemic alert period and hospitals will have specific guidance for management and investigation of cases during that time. The CDC will provide additional support and leadership regarding human infection management during this period.

The primary activities during this period are surveillance for imported cases or cases contracted from contact with infected animals. Any detected cases will be aggressively investigated by the TDH and contacts are to be identified, quarantined, and treated, as appropriate. The objective is to stop the spread of the virus into the general community.

B. WHO Phase 6 (Pandemic)

The lead agency for the public health response to a pandemic is the Department of Health. The state response will be conducted in collaboration with federal response agencies; primarily, the Department of Health and Human Services (HHS) and Department of Homeland Security (DHS).

The primary activities are surveillance for disease, communication, implementation of general social distancing measures, support of medical care services, appropriate use of available antiviral medications and vaccines, and response workforce support. The TDH is primarily responsible for communication with federal health authorities and creating state-wide pandemic response policies. The implementation of response measures is the responsibility of local communities and local public health authorities. Operational details will be outlined in regional health department pandemic plans.

VII. Section Summaries

Wilson County Emergency Management Agency pandemic response policies are outlined in the attached sections. Federal and/or state pandemic plans provide guidance for these policies. Each section is summarized below.

Section 1. Ethics and Principles for Planning and Response

This section outlines a framework for ethical pandemic planning and decision making during a pandemic. The section provides a context for understanding the principles used to formulate policies regarding allocation of resources and disease control measures in the pandemic plan.

Section 2. Disease Surveillance

This section outlines the use and enhancement of current influenza surveillance strategies to monitor for early human infections caused by a novel influenza virus with pandemic potential and to track and respond to the spread of influenza during a pandemic. A focus of this section is the Sentinel Provider Network, a network of outpatient physicians who report the percentage of their patients seen with influenza-like-illness (ILI) and submit occasional specimens for culture at the state laboratory during influenza season.

Section 3. Wilson County Emergency Management Agency

This section includes the responsibilities of WEMA during pandemic influenza and the structure of the EOC based upon social distancing protocols.

Section 4. Emergency Medical Services Planning and Response

This section addresses the emergency medical services planning and response including personal protective equipment (PPE), the possibility of increased instances of violence, transport policies for influenza patients, decontamination procedures, living quarters, infection control and isolation, absence expectations, station security, station consolidation, mutual aid, triage, annual influenza vaccine, medical and trauma patient designation and alternate forms of patient transportation.

Section 5. Alternate Care Site

This section notes the possible need for an alternate care facility and sets forth that the Wilson County Health Department and the University Medical Center shall work together to identify possible sites and establish guidelines and procedures, including resources, security, transportation and staffing.

Section 6. Fire and Rescue Services Planning and Response

This section covers emergency responders and outlines protocols for response to fires and rescue calls during pandemic influenza.

Section 7. Countywide 911 Dispatch Operations

This section addresses consolidated dispatch operations and a dedicated phone line for influenza-related 911 calls.

Section 8. Hospital Planning

This section guides the reader to the Attachment which displays a copy of University Medical Center's Pandemic Influenza plan.

Section 9. Management of Deceased Persons During a Pandemic

This section notes that the Wilson County Medical Examiner/ Coroner is responsible for the management of dead bodies during a pandemic. The primary guide for the Medical Examiner/Coroner will be the Pan American Health Organization's publication, "Management of Dead Bodies after Disasters: A Field Manual for First Responders," a copy of which is provided in the Attachments.

Section 10. Vaccine Distribution and Use

This section addresses the prioritized distribution of limited supplies of vaccine which may be available early in the pandemic and the possibility of mass inoculations if and when sufficient amounts of vaccine become available.

Section 11. Government and Critical Facilities

This section includes closure policies for governmental offices, schools and other businesses as well as social distancing procedures.

Section 12. Community Interventions

This section includes recommendations for businesses, legal authority, pre-pandemic case management, childcare, colleges and universities and special populations.

Section 13. Public Education

This section outlines possible public education efforts prior to a pandemic event.

Section 14. Media

This section includes information management, use of radio, TV, weather radio bands, daily status briefings, communications to the media, and the creation of a special pandemic PIO team.

Section 15. Identification of Presence of Pandemic in Wilson County

This section discusses the initial reaction of the county to the presence of pandemic flu within the United States and the county.

Section 16. Allocation of Critical Resources

This section includes drinking water, food, electrical power, and fuel include vehicle, propane and natural gas.

VIII. Training

The state pandemic preparedness plan will be used to guide the development of regional and local preparedness plans. Plans will be exercised in partnership with other agencies and organizations, both public and private and revised to correct weaknesses identified through these exercises.

IX. Acronyms

AIIRs	Airborne Infection Isolation Rooms
APHIS	Animal and Plant Health Inspection Service
APHL	Association of Public Health Laboratories
BERT	Biological Emergency Response Team

BMBL	Biosafety in Microbiological and Biomedical Laboratories
BSI	Body Substance Isolation
BSL	Biosafety level
CDC	Centers for Disease Control and Prevention
CEDS	Communicable and Environmental Disease Services
CERT	Community Emergency Response Team
CISM	Critical Incident Stress Management
CNS	Central Nervous System
DEA	Drug Enforcement
DEOC	Director's Emergency Operations Center
DHS	Department of Homeland Security
EMA	Emergency Management Agency
EMT	Emergency Medical Technician
EPA	Environmental Protection Agency
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
ESF	Emergency Support Function
HEPA	High Efficiency Particulate Air (filter)
HHS	Department of Health and Human Services
HPAI	Highly Pathogenic Avian Influenza
IC	Incident Commander
ICU	Intensive Care Unit
IHC	Immunohistochemical
ILI	Influenza-like illness
IT	Information Technology

LEA	Local Educational Authority
LRN	Laboratory Response Network
NIH	National Institutes of Health
OMS	Outbreak Management System
PCR	Polymerase chain reaction
PPE	Personal Protective Equipment
Pre-K	Pre-Kindergarten
PTBMIS	Patient Tracking Billing Management Information System
RT-PCR	Reverse-transcriptase polymerase chain reaction
SARS	Severe Acute Respiratory Syndrome
SHOC	State Health Operations Center
SNS	Strategic National Stockpile
SPN	Sentinel Provider Network
STD	Sexually-transmitted disease
T-HAN	Tennessee Health Alert Network
TB	Tuberculosis
TCA	Tennessee Code Annotated
TDH	Tennessee Department of Health
THA	Tennessee Hospital Association
TPA	Tennessee Pharmacy Association
UMC	University Medical Center
USDA	US Department of Agriculture
WEMA	Wilson County Emergency Management Agency
WHO	World Health Organization

SECTIONS

Section 1. Ethics and Principles for Planning and Response

The ethical and principle guidelines for the Wilson County Pandemic Influenza plan are taken from the State of Tennessee Department of Health Pandemic Influenza Response Plan and are in accordance with the guidelines set forth in the Public Health Emergency Law CDC Foundational Course for Front-Line Practitioners. All decisions are based upon factual data gathered from research conducted on past influenza pandemics. This document is meant only as a guideline as it is impossible to accurately predict the scope and lethality of an influenza pandemic until it begins. All decisions, both planned prior to and that occur during the pandemic, have been and will be made based upon state and federal guidelines and taking into account the best interests of the citizens of Wilson County, Tennessee.

It must be understood that decisions made during a pandemic will be unlike any that must be made by civilians on a routine basis. There are not enough resources available nor is it feasible to stockpile the number of resources during a non-pandemic period that may be utilized in the event of a pandemic. Medical supplies, especially mechanical ventilators, are currently in high demand on a daily basis, with the need often exceeding the supply during regular influenza seasons. As a result, during a pandemic, mechanical ventilators will not be available for all patients who will need them in order to survive. The medical staff at UMC will have the responsibility for determining the criteria for patients to be placed upon, as well as taken off of, mechanical ventilators. These criteria will be established ahead of an actual event (to the extent possible without knowing the particulars of the next pandemic) so as to reduce the chances of personal favor or bias playing a part in deciding which patients have access to mechanical ventilation.

Wilson County EMA has a duty to plan for the worst-case scenario regarding an influenza pandemic. Based upon this worst-case estimate, it is anticipated that nearly all medical supplies (including IV solutions, diabetic medicine, blood thinner, heart medication, etc.) and even food and drinking water may become critical resources if the just-in-time delivery system in the United States breaks down due to the number of employees in manufacturing, transportation and distribution falling sick or remaining away from their jobs. Wilson County Government will work to serve the greater good based on available resources. Local food and water resources may be taken over by the County to help ensure fair and equitable distribution. A public education campaign will ask all citizens to do their part to stockpile supplies of food and water to ensure the best chance of survival during a worst-case pandemic influenza outbreak. The State of Tennessee Pandemic Influenza Core Plan may be referenced to see the guidelines that will be followed by Wilson County Emergency Management Agency in regards to ethics and planning procedures. All decisions, both pre-pandemic and during an outbreak, will be made in the best interests of the citizens of Wilson County regardless of age, race, religious or political affiliation.

Section 2. Disease Surveillance

Wilson County will follow all of the disease surveillance procedures set forth in the State of Tennessee Pandemic Influenza Core Plan. University Medical Center will establish local disease surveillance for Wilson County in cooperation with State and CDC protocols. Surveillance will be especially important during the upcoming influenza seasons as a pandemic outbreak may be masked initially by seasonal influenza symptoms.

Section 3. Wilson County Emergency Management Agency

A. Responsibilities

WEMA's day to day operations include emergency management, emergency medical services, fire suppression, vehicle extrication, water rescue, hazardous materials responses, special rescue and disaster preparedness and responses. . WEMA, in addition to the regular duties aforementioned, will be the lead agency for the management of emergency operations throughout the duration of the pandemic. These duties and responsibilities are provided in this plan and include:

A. Maintaining normal WEMA operations, duties and responsibilities

B. Utilizing the existing Pandemic Influenza Operating Guide to lead Wilson County Emergency Management Agency and help guide other agencies and organizations during the pandemic.

C. Operating the Wilson County Emergency Operations Center (EOC).

D. Assisting the Wilson County Health Department and UMC in the establishing of a (preselected site) alternate care facility if it is determined such a facility is needed and there are sufficient resources available to staff the facility.

E. Assisting in coordinating bus transportation to transport patients and suspected patients to appropriate medical or other facilities.

F. Media relations.

G. Delivery of medical pods to special needs facilities for the Wilson County Health Department if a vaccine or mitigating medication is made available for public use.

H. Coordinating the use of for-profit ambulance services to transport influenza patients within Wilson County.

I. In partnership with Wilson County Health Department and University Medical Center, providing public education for government, businesses and citizens of Wilson County.

B. Emergency Operations Center

The Emergency Operations Center (EOC) is located inside WEMA Station One. During pandemic influenza, because of social distancing protocols and the risk of infection, the normal EOC will be replaced by an electronic EOC. The leaders of Wilson County will communicate by conference call and/or video instead of meeting face to face. A conference call will be set up twice daily at 10 a.m. and 4 p.m. (or as deemed necessary).

Section 4. Emergency Medical Services Planning and Response

Wilson County Emergency Management Agency is responsible for the primary emergency medical response for all of Wilson County, Tennessee. As of October, 2008 WEMA possessed 11 ambulances and employed 103 personnel to cover three shifts and administration for emergency management, fire, rescue and emergency medical services.. Additionally, WEMA has approximately 50 volunteers who range in training from the minimum level of Community Emergency Response Team (CERT) up through the firefighter and paramedic level.

A. Personal Protective Equipment

Personal protective equipment (PPE) has been found to reduce the chances of infection from disease. Currently there is not a proven vaccine against H5N1 or any of the newer, evolving strains of pandemic influenza. The best chance to reduce the possibility of contracting pandemic influenza is to wear PPE. WEMA will furnish full PPE for all of its personnel during the influenza pandemic. In addition to the PPE against infectious disease, precautions must be taken for the potential increase in acts of violence during a pandemic.

PPE for Influenza

All WEMA personnel will be issued ten of the N95 respirator masks for the duration of the pandemic. The masks are intended to be used for wear during each day of the week (example wear the same mask each Monday, different one each Tuesday, etc.). The influenza virus has proven to survive on hard surfaces for up to 48 hours. By wearing the mask one day and leaving it for six, any influenza virus on the exterior of the mask should be dead before the employee dons the mask again. The three additional masks will be available to account for wear and tear or blood/fluid contamination. Personnel will also be issued a PPE jumpsuit to don over shorts and a t-shirt (due to heat from the enclosed suit, regular uniform protocols will be waived when wearing the PPE suit). This suit includes built-in footies and a hood and is highly water resistant. Goggles will be work for eye protection to protect both from exposure to airborne fluids from patients sneezing or vomiting and from personnel accidentally touching their eyes in the course of their duty. A surgical mask with a plastic barrier shield may also be worn over the N95 respirator and goggles to reduce the chance of infection. Per standard

body substance isolation (BSI) guidelines, nitrile gloves will be worn for every patient contact.

There is a one to two day period in which a person may be infected and contagious with the pandemic influenza virus, but not symptomatic. Therefore, once a case of pandemic influenza is detected in the United States, the WEMA director in coordination with the Wilson County Health Department and the Tennessee Department of Health will decide when it will become mandatory for all WEMA personnel to implement full Pandemic Influenza BSI precautions on all patients, including wearing full PPE. These precautions will remain in effect until the pandemic has run its course.

Potential for Pandemic Related Violence

The potential for increased instances of violence in general and against healthcare workers will exist during a pandemic period. Previous pandemics have shown that the influenza strain infects every organ in the human body, including the brain, altering the cognitive capabilities of some patients. As a result, suicide and acts of violence increased significantly.

Law enforcement capabilities will be limited and it is possible that there may not be law enforcement available to respond to an EMS crew when a call turns violent or becomes threatening in nature. It will be the responsibility of each responding unit and crew member to be especially vigilant and cautious, taking steps to prevent becoming exposed to violence initiated by ill persons or any others at emergency scenes. The first priority in these situations will be crew safety.

B. Transport Policy for Influenza Patients

Research by the Tennessee State Department of Health (July, 2006) suggests that Wilson County may experience an average increase of 500 patients per week during pandemic influenza, equating to 71 potential patient transports per day for influenza alone. The numbers may be higher or lower depending on the strength of the virus. A significant increase in call volume, coupled with the estimate of a significantly increased absentee rate among employees will make the continuation of EMS services difficult in Wilson County. Two plans for EMS transportation exist, one incorporating the assistance of private ambulance services, and the second plan if the private ambulance services cannot assist Wilson County.

Plan A: Utilization of Private Ambulance Services as Mutual Aid

Private ambulance services will be responsible for the response to and transportation of suspected or known influenza patients. This will allow WEMA to focus on responding to the "normal" daily medical emergencies and result in less cross-contamination of ambulances.

Plan B: No Mutual Aid EMS is Available

If private ambulance services are not available during pandemic influenza WEMA will then designate 25% of its ambulance crews for known influenza patient response and transport duty. A minimum of one ambulance per shift will be available for pandemic influenza calls.

An outbreak of pandemic influenza will severely tax emergency resources unlike nearly any other type of emergency, and for a long period of time. Changes to normal response criteria and capabilities will be made based upon the changing situation. The following are means Wilson County may utilize to handle the increased call volume in addition to the two plans mentioned above:

Pandemic Influenza Transportation Hotline

A special telephone number will be set up for citizens to call for transportation to the hospital when they suspect influenza during the pandemic period (it will be difficult to distinguish between seasonal influenza and pandemic influenza if both occur simultaneously, therefore any sign or symptom will be treated as pandemic in nature in the pre-hospital setting). Caller information will be taken and transportation provided to those needing transport to a medical facility. 911 calls related to influenza that do not present as initially life-threatening will be transferred to the influenza transportation hotline. Patients will be encouraged to utilize their personal vehicles for transportation whenever possible.

Utilization of Buses for Patient Transport

Buses will be utilized to transport non-emergency influenza patients to a medical facility. This will lessen the load placed upon the ambulance service and allow faster and more efficient transportation of stable patients. Personnel staffing the buses will wear full PPE and all patients will be given surgical masks to wear for the duration of their transport. Buses will be decontaminated in accordance with specified decontamination procedures prior to returning to service. The buses will operate only in areas from which calls for transport have been received to mitigate the unintentional spread of the virus from one neighborhood to another.

Types of Patient Transport

Only those patients whose initial symptoms are described as meeting critical criteria will be transported by ambulances. If possible, all other patients will be transported by bus to reduce the strain placed upon the ambulance service and allow them to be available for emergency calls. Critical transport criteria will be developed and modified, as required, by the Wilson County Health Department in

coordination with University Medical Center and Wilson County Emergency Management Agency and provided to the Emergency Medical Services call screeners/dispatchers

C. Decontamination Procedures

All emergency vehicles, including adjunct vehicles used for patient transport during pandemic influenza, will be decontaminated after each call, regardless of the nature (trauma, medical, rescue, hazmat, etc.). Special decontamination devices will be used for these procedures. A mix of bleach and water will be used in aerosol sprayers to mist down all emergency vehicles inside and out prior to being placed back in service. This decontamination mix will help mitigate the cross contamination of the influenza virus among patients and reduce the chances of infecting patients needing transport who do not have the influenza virus. Because of the latent period between initial exposure and the onset of symptoms, every patient will be treated as having pandemic influenza and full BSI for emergency service personnel, patients, and full decontamination procedures will apply for everyone, regardless of the nature of the call. In addition, when not in service, all emergency vehicles will be placed in sunlight and aired out to the extent possible based upon security and weather conditions at that time. If the PPE suits are proven to withstand the bleach solution, then personnel may also be decontaminated between calls.

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D. Living Quarters

Data collected from previous pandemic influenza outbreaks indicate that social distancing helps to mitigate the spread of the virus and that personnel placed in confined areas and sharing the same air are at a high risk of infecting each other easily. WEMA operates around the clock and, as a result, the buildings housing personnel are in use constantly. The potential exists for a worker who has the virus, but has not shown symptoms, to spread the virus among personnel and on surfaces within the building and contaminate others. No current tests exist to identify personnel who are asymptomatic. Shift personnel will be moved out of their normal sleeping quarters and all beds will be placed throughout the building with at least 10 feet of space between beds of sleeping areas (cots, mats and sleeping bags may be utilized instead of apparatus bays).

E. Infection Control and Social Isolation

Personnel will be asked to remain at least 10 feet apart at all times when not responding to emergencies. (The recommended distance is 6 feet, so by asking 10 the 6 feet is more likely to be recognized as people will tend to work closer to each other than recommended).

Personnel will be asked to wear masks, protective goggles and gloves while on shift to reduce the chances of cross-contaminating each other with the result of more emergency workers becoming ill.

Personnel will be asked not to smoke while on shift. The act of touching the cigarettes and placing the cigarette in their mouth is a very viable way to pass the infection from a surface, to the cigarette and then into the mouth of the worker resulting in viral infection. The same rule will apply to any tobacco products.

Disposable cups, plates and plastic wear will be utilized during the course of the pandemic to reduce cross-contamination among personnel. Personnel will be asked to drink from sealed bottles of water or cola and not to touch the top of the container except to drink from it once the top has been removed to reduce the chances of infection from touching a surface, the container, and then the person's mouth. Meals-ready-to-eat (MREs) and other types of sealed food packages will be utilized to feed personnel to again reduce the chances of contamination from others or from surfaces within the building.

Personnel will be asked to wear PPE, at minimum mask, gloves and eyewear, while on shift. Every effort will be made to keep personnel healthy and able to respond throughout the course of the pandemic.

F. Absentee Expectations

The Tennessee State Department of Health projects a possible 70% absentee rate among workers once schools and daycares close and the pandemic becomes present in local areas. All numbers are subject to change based upon the severity of the pandemic and the response of the citizens of Wilson County. The projected numbers will equate to WEMA operating with 30 full-time employees instead of the usual 100. On this basis an estimated 10 people per shift will be available to handle all EMS, fire, rescue, hazmat and other emergency operations for Wilson County. The number of volunteers and part-time personnel available will vary based upon their primary occupations and personal obligations. It is anticipated that there will be a critical shortage of personnel available to cover emergencies within Wilson County. The other emergency services as well as all businesses in Wilson County are projected to also have a 70% absentee rate.

G. Station Consolidations

The estimates of 10 personnel available per shift for WEMA will result in station consolidations. The expected order of station closure based upon personnel shortages will be, from first closed to last closed: Station 8, Station 6, Station 4, Station 5, Station 2, and Station 3. If the shortage of personnel is severe enough, Station 1 will remain as the only operating EMS station for WEMA. The assignment of personnel will be at the discretion of the Battalion Chiefs, and in their absence, the Director of WEMA. Station closures may vary based upon the areas of the county hardest hit by the pandemic and availability of private ambulance services to assist WEMA.

H. Station Security

All stations, upon notification of the presence of pandemic influenza within the continental United States, and at the discretion of the WEMA Director, will go on lockdown. Signs will be posted for any visitors to call the station telephone number to speak with station staff members. All personnel who are not directly employed by WEMA or Wilson County (police, maintenance, etc.) will be prohibited from entering the building. This is anticipated to help mitigate the start or spread of infection, among WEMA shift personnel. Signs posted will include the influenza hotline number to call if they have questions or are in need of obtaining transportation to the hospital. All exterior doors are to remain locked and the doors on emergency vehicles shall be locked when out of the station and not manned. Personnel will be asked to decontaminate their station prior to the beginning of the oncoming shift.

I. Utilization of Mutual Aid Resources

Private ambulance services will be utilized for transportation of influenza patients whenever possible. These services will be required to furnish and wear full PPE. The same rules for usage of PPE will apply to any private or outside agencies providing mutual aid for emergency services within Wilson County throughout the course of the pandemic influenza.

J. Criteria for Triage During Pandemics

Patients requesting an ambulance due to experiencing signs and symptoms indicative of influenza but who are not experiencing difficulty breathing or changes in consciousness will be placed on a triage list to be transported when ambulances and/or buses become available. Patients with emergencies unrelated to influenza, or patients with influenza symptoms that are experiencing difficulty breathing or altered states of consciousness will be considered priority patients and an ambulance dispatched to their location as soon as possible based on ambulance availability (considering shortages in personnel and high call volumes expected for the EMS system). Whenever feasible, patients will be asked to transport themselves to an appropriate medical facility.

K. Annual Influenza Vaccine

WEMA will offer the seasonal influenza vaccine to all paid and volunteer personnel. Similar to the Hepatitis-B vaccinations, WEMA personnel will have a choice in receiving or not receiving the vaccination. However, those opting to not receive the vaccination will be required to sign a refusal form indicating their non-acceptance. All personnel will be strongly encouraged to receive the annual influenza vaccination. This will provide two benefits: 1) Personnel will experience fewer sick days during the “regular” influenza season and reduce the spread of that virus among shift personnel and, 2) In the event of pandemic influenza, it will provide a buffer against the seasonal influenza and possibly

allow for more personnel to be available to work in the event that the pandemic coincides with a seasonal influenza outbreak.

Section 5. Alternate Care Site

Based on the severity of the pandemic and the loads on existing medical facilities one or more alternate care facilities may be established. The Wilson County Health Department and the University Medical Center, working together, have the responsibility for evaluating available sites throughout the county and, prior to pandemic onset, identifying locations which may be used. Considering the limited staff and supplies anticipated to be available during a pandemic the primary function of an alternate care site may be as a shelter for the terminally ill.

Section 6. Fire and Rescue Services Planning and Response

Wilson County Emergency Management Agency, the Lebanon Fire Department, and the Watertown Volunteer Fire Department will continue to respond to fire and rescue emergencies during the pandemic event. With an estimated absentee rate among the workforce of 70%, fire service operations will be modified to account for fewer responders.

Pandemic Protocols for Fires

Wilson County Emergency Management Agency, the Lebanon Fire Department, and the Watertown Volunteer Fire Department will face a shortage of personnel who can be utilized for fire operations during a pandemic influenza. It will probably be necessary to combine the operations of these three agencies for the duration of the pandemic. If WEMA is down to 4 or fewer firefighters, these personnel will operate out of station 3 and cover the west end of the county and Lebanon Fire Department will operate out of their station(s) (depending on available personnel) and be asked to cover fires for the eastern half of Wilson County. Watertown Volunteer Fire Department staff will be utilized on an as needed and as available basis.

During a pandemic, unless there is a direct threat to life safety (i.e., confirmed victim trapped inside), all structure fires shall be fought defensively. Efforts will be made to protect surrounding structures, but the structure on fire may be fought only an exterior attack basis. There is usually not a way for reduced staff to safely conduct interior operations with the lack of sufficient backup and support expected during a pandemic event. If there is a direct threat to life safety, fire ground tactics will be decided by the Incident Commander (IC).

It will be the responsibility of the first unit on the scene to establish incident command and also to direct any person(s) on the scene to evacuate a safe distance (more than 25 feet) from the arriving personnel to reduce the chances of contacting pandemic influenza from the general population. Fire line tape may be utilized to create a visible barrier between the general public and all firefighting operations. Any breach of this barrier could result in the contamination/infection of firefighting personnel and a further reduction of

emergency personnel during the pandemic. If rescue or medical operations are necessary, personnel shall wear full PPE and go through decontamination after coming in contact with other persons. All vehicles and equipment shall go through decontamination procedures prior to returning to service. Decontamination procedures will take place prior to units and personnel entering their assigned stations.

Grass and vehicle fires shall be fought at the discretion of the incident commander. When insufficient personnel exist to carry out safe operations, or the operation may exhaust personnel and render them unfit to respond to additional emergency calls, the fire shall be fought with emphasis on protecting life and undamaged structures.

Pandemic Protocols for Rescue Operations

WEMA personnel will don full PPE against pandemic influenza prior to responding to any rescue operation (vehicle extrication, lost persons, collapse rescue, water rescue, high angle rescue, etc.). Additional PPE shall be worn over the influenza PPE for protection against the elements (glass, metal, etc.). Where applicable, additional layers of gloves shall be worn on top of the rescue PPE. These can be easily disposed of in the event they come in contact with the pandemic influenza virus. (i.e. layered with medical gloves, extrication gloves, medical gloves).

Once a human case has been confirmed within the United States and at the discretion of the WEMA Director, all calls shall be treated as if the pandemic influenza virus is present. This shall include any response to transportation incidents such as collisions and water rescues. Incidents occurring on the interstates and related to any type of travel will have the highest potential for infection and full decontamination procedures and PPE shall apply for these events throughout the duration of any confirmed case of pandemic influenza inside the United States.

Section 7. Countywide Emergency Services Dispatch (E-911) Operations During Pandemic Influenza

Dispatch operations throughout Wilson County are estimated to have a 70% absentee rate during pandemic influenza. The number of 911 emergency as well as non-emergency calls will increase significantly. It may be impossible for 911 to maintain operations with depleted personnel and increased call volume. Similar situations are expected to arise at all dispatch points within the county (including Lebanon Central Dispatch, Wilson County Sheriff, Mt. Juliet Police, Watertown Fire and Police and Wilson County Emergency Management).

Representatives of the several agencies involved will determine, based on the availability of trained staff and call loads, if one or more dispatch operations should be combined for the duration of the pandemic. Considering that the E911 Center is the focus for reporting all emergencies within the county it is anticipated that operation will have to be staffed and consolidations, if needed, occur among

other agencies. Other agencies may find it necessary to provide staff to E911 to ensure its operation and viability.

Dedicated Line for Influenza 911 Calls

Non-emergency lines will be established and personnel will be available to answer them as citizens call with concerns, questions or reports regarding the pandemic influenza in Wilson County. Once the pandemic is present within Wilson County, a telephone number will be established for citizens to call for non-emergency types of assistance or information. If available, a person with medical training will be selected to assist dispatch with triaging calls that come into the non-emergency number...

Section 8. Hospital Planning

See Attachment 2 for a copy of University Medical Center's pandemic influenza plan.

Section 9. Management of Dead Persons During a Pandemic

The influenza strain of H5N1, as of August 9, 2006, had a high mortality rate. It is unknown what the mortality rate will be in the next pandemic, however, the pandemic influenza of 1918 killed more than 5% of the world's population, which would equate to nearly 350 million deaths worldwide today. If the next pandemic influenza outbreak is similar to the 1918 outbreak, the dead will overwhelm the resources of local funeral homes and, due to the nature of the pandemic, funeral homes will likely be closed. This places the burden on collection, identification (photography and DNA if possible), storage and burial of the dead on local public/governmental services. The possibility of mass graves exists and the victims will need to be recorded prior to mass burial so that relatives and friends may have closure once the pandemic is over.

The Wilson County Medical Examiner/Coroner is responsible for the management and disposition of dead bodies in Wilson County. This office will utilize the practices and procedures provided in the *Management of Dead Bodies After Disasters: A Field Manual for First Responders* published by the Pan American Health Organization.

A copy of the *Management of Dead Bodies After Disaster: a Field Manual for First Responders* is provided as Attachment 3.

A. Notification of the Presence of Dead Persons

The Wilson County Medical Examiner will have the responsibility for the management of all deceased individuals.

The public will notify the Medical Examiner of a dead person(s) though the public Pandemic Hotline which will be established. The public should not use the 911 emergency lines to provide this information.

B. Collection of Dead

Upon notice of a dead person(s), the Medical Examiner will compile a list of the locations of the dead. Representatives of the Medical Examiner will go to the locations with appropriate vehicles to collect the deceased. Appropriate guidelines will be followed to handle the dead in a respectful manner together with the completion of necessary forms to identify and track the deceased through the final disposition of the body

C. Neighborhoods and Homes

During previous pandemics the number if persons dying at home was high. Due to the shortage of healthcare facilities during a pandemic, people will be asked to take care of the sick at home if possible. As a result, the number of persons who will die at home will be significant. As aforementioned, persons can notify the Medical Examiner of a deceased person by calling the pandemic hotline. Additionally, the residents may place a note in their mail box, to be picked up when the mail is delivered, advising their name and address (clearly printed in the note) and the fact that a person at that location is deceased. The person delivering mail will collect the notes when mail is delivered and bring them to the post office where the Medical Examiner will pick them up on a daily basis and make arrangements to remove the deceased. Care will be taken to pick up the deceased as soon as possible for to decrease the amount of mental anguish placed upon survivors having a deceased family member of friend in their home...

D. Hospitals and Alternate Care Facilities

Hospitals and Alternate Care Facilities will follow the procedures as stated in the University Medical Center Pandemic Flu Plan

Section 10. Vaccine Distribution and Use

Wilson County's vaccine policies will be established in accordance with the Tennessee Department of Health's Pandemic Influenza Plan, Section 5: Vaccine Policies and Procedures. The state plan provides in depth guidance in the administration of a vaccine program and the prioritization of recipients of vaccines. It will be followed on a local basis. The state pandemic plan is based upon estimates of production, time, capacity and vaccine efficacy at the time the state plan was written. Policies and procedures will be revised to reflect changes in theses factors as they become a reality.

Should mass inoculations become a viable option, the county will utilize plans established by the Wilson County Health Department. It is expected these plans will closely mirror the County's plans for anthrax and small pox vaccinations.

Section 11. Government and Critical Facilities

It is vital that county government and critical facilities continue to function during a pandemic. Social order can only be maintained if the governmental process is uninterrupted, and if leadership is present to provide effective direction throughout the pandemic period. Wilson County must react immediately and take proactive steps to reduce the rate of infection and impact on local business to the fullest extent possible to ensure the safety and well being of residents.

Closure Policies

It will become necessary to close governmental offices, schools and some businesses to help mitigate the spread of the virus.

Government Offices

Once a pandemic is confirmed by the WHO and CDC and, under the guidance of the Tennessee Department of Health, it is anticipated that all Wilson County government offices will close to the public. This includes all judicial hearings, traffic court, courthouse, etc. Once the pandemic reaches the United States government leadership will be asked to remain distanced from the public and communicate electronically via video teleconferencing, email, text messaging, or telephone. Face to face meetings will only occur if deemed necessary by the Mayor, the Director of WEMA and the Director of the Wilson County Health Department. If a government leader becomes ill, they will be replaced according to their existing chain of command and this replacement will be made public to all residents of Wilson County.

Schools

Once a pandemic virus is confirmed present in the United States, spread throughout the country is expected to be inevitable and rapid. It is also possible that illness caused by the pandemic strain could occur sporadically for weeks before the beginning of a pandemic wave. Interventions to protect school children will be initiated in a stepwise fashion as soon as the virus is present in the United States.

Decisions to implement all social distancing measures, such as school closure will be reviewed and revised based upon the virulence of a particular wave and evidence of the effectiveness of disease control strategies.

The Tennessee Commissioner of Health or his designee will declare when child care facilities and public and private schools (pre-kindergarten through twelfth grade) in a county should be closed. This will be based on advice by the State Epidemiologist that criteria for the closure of schools have been met. This will be implemented through the Wilson County Health Department.

The criteria for school closure by the TDH are:

1. The pandemic virus causes morbidity and mortality in excess of routine seasonal influenza, and
2. Laboratory confirmation of the pandemic virus in the county or a surrounding county, and
3. Epidemiologic evidence from a state surveillance System indicating community spread of the pandemic virus in the county or a surrounding county.

Colleges and universities are affected by state policies concerning non-essential public gatherings and not by specific school closure requirements. College students are older and have less continuous group contact than school-aged children. Closing dormitories or suspending classes at a college or university will be considered on a case by case basis. Colleges and universities are expected to develop campus plans and to collaborate with local and regional planning. For recommendations for college and university pandemic planning see the Tennessee Department of Health Pandemic Influenza Response Plan, Section 7, Supplement 3, Attachment A.

Regardless of the state pandemic influenza policy local educational authorities may choose to close daycare, schools and universities should they deem to do so for the public good to prevent spread of the disease, to protect life, to reduce illnesses or to address such issues as high absenteeism.

Local school officials should plan ahead for the pandemic flu and develop alternative methods of instruction which may include remote/electronic classrooms and instruction, social distancing in education or other innovative techniques.

Schools and child care facilities may be reopened when state surveillance systems indicate the pandemic wave has subsided.

Other Businesses

Businesses aside from government and schools are considered “other businesses” for the purpose of this section. A public education campaign is necessary to alert businesses in Wilson County of the dangers of pandemic flu and to help them prepare its effects on their specific operations. Businesses need to be ready to implement the safest means to continue operating and protect their workers during a pandemic. Businesses must prepare for the potential of 70% absentee rate. It is critical that businesses plan ahead and create a plan to continue operations during a pandemic, especially businesses that supply fuel, food, water, and healthcare to the residents of Wilson County. The inability of a substantial number of businesses to continue operation will adversely affect the health and social well being and, ultimately the infrastructure of Wilson County will be threatened.

Section 12. Community Interventions

Community interventions will be an integral part of the successful implementation of the pandemic emergency plan for Wilson County. The Wilson County Health Department, WEMA, UMC and other emergency services cannot support Wilson County alone. It will take a complete community effort of preplanning, actions and cooperation to best prepare for and endure a pandemic in Wilson County.

The public will be asked to form neighborhood communities, such as the Neighborhood Watch programs, in the event of a pandemic. Within each neighborhood they will designate leaders who will assist in looking out and coordinating aid among members of the neighborhood. Each neighborhood will be responsible for assisting with food and water needs of each other and also for assisting in notifying the Medical Examiner of deceased persons or to advise of critically ill persons within the neighborhood. Should it appear that a pandemic event is imminent the Wilson County Health Department will conduct a pandemic awareness campaign to educate the citizens of the county as to the dangers of the pandemic and how the citizens can best address its issues. Once the pandemic is present in the county training will be provided via radio, television or other appropriate means. Neighbors will be asked to assist neighbors, especially those who are alone, elderly, ill or who have small children and to notify the proper authorities when assistance beyond the neighborhood level is required.

Business Recommendations

Businesses should have a pandemic plan in place that is understood by all employees prior to an outbreak. The plans must be flexible to account for a potential 70% absentee rate and also plan to safeguard the employees while they are at work with proper PPE, hand washing and social distancing. Community education is available to make all residents aware of the potential of a pandemic flu outbreak. A multi-page educational insert was distributed via a local newspaper in October, 2006. However, re-education will be necessary to remind businesses of the effect pandemic flu can have on their operations.

Legal Issues

All legal issues that arise during a pandemic will be novel to the current global/ world situation. Issues will develop that cannot be foreseen. As issues develop legal professionals representing Wilson County and healthcare and other organizations and businesses will be consulted. All decisions will be made with the best intention to preserve life without discrimination based on age, color, sex, religion, handicap or any other differentiating characteristic. It must be understood by all that resources may be critically short, resulting in decisions being made that can only occur in extraordinary circumstances. There must be fair and equitable distribution of resources and personnel to address the issues of the pandemic. Steps will be taken to work out ethical issues on a beforehand basis whenever possible.

Pre-Pandemic Case Management

Prior to a pandemic, ethical issues should be addressed to plan for the types of scenarios that may arise, including shortages in staff and medical supplies, and the types of decisions that will have to be made regarding the care and treatment of critically ill patients based upon limited resources.

Childcare

All childcare services will close at the time that schools close. This will place a burden upon the business community as workers may have to stay home to provide care for their children. It is intended that community pandemic watch programs can assist at this point by neighbors who normally stay at home helping to watch children in their neighborhood so that the parents can continue to go to work. Keeping daycare facilities open poses far too great a risk to infecting large numbers of children at the same time with pandemic influenza. They will be safer at home or in the care of a neighbor.

Special Populations

Churches fall under the category of special populations. Wilson County Government may request that any assembly of 10 or more persons be suspended until the pandemic is over. Churches should make plans to enable continued support of their congregations while adhering, as closely as possible, to measures to prevent spread and infection during a pandemic flu epidemic. Undoubtedly churches will perform important and meaningful tasks during a pandemic and serve as a bulwark from social and mental perspectives. Regardless, churches will be asked to modify their operations to best serve their members and the community at large.

Prisons are also considered special populations. The need for security with the potential for a 70% absentee rate among guards is critical. The housing and protection of inmates is at the discretion of the Sheriff and his administration. A suggested method will be to isolate and house new inmates in a separate area for a minimum of 48 hours to prevent persons carrying the virus from coming in contact with and infecting other prisoners or prison staff before they show symptoms of the virus. Visitation by outside persons should be suspended during the pandemic period. Any prisoners falling ill should be treated in an isolated area inside the prison. Transportation of sick prisoners will be minimized to the extent possible. Air purification systems are available and could be installed to help reduce the incidence of influenza in the prison facility.

Nursing Homes and other long term residential health and mental health facilities are responsible for preparing their own pandemic flu plans. These agencies should contact the Tennessee Health Care Association and/or the Tennessee Department of Health for assistance and guidance in accordance with the latest available information pertaining to their residents and operations. These facilities should designate staff to coordinate pandemic preparedness and response and work with state and local authorities to help ensure they can best serve their staff and resident populations.

Section 13. Public Education

Public education is critical to pandemic preparations. It will take a unified community effort by all residents within Wilson County to have the best chance of survival during a pandemic. A multi-page educational insert was distributed by a local newspaper to all residents of Wilson County in October, 2006. The Wilson County Health Department, in cooperation with WEMA, will provide speakers to address pandemic influenza issues. However, the lack of local or even national presence of the pandemic influenza presents a sense of security such that available education is often ignored. Once pandemic influenza is confirmed and receives impetus in the news media, Wilson County officials must be ready to provide, on a large scale, education and training for the many groups and individuals who will then seek guidance.

Section 14. Media

Current and accurate public information will be critical during the pandemic. A community of trust will be imperative to creating unity and teamwork among all residents of Wilson County during a pandemic.

Information Management

Truthful, accurate, and current information regarding developments during a pandemic are of paramount importance. Incorrect information and rumors can inflate public fear and panic and must be avoided. The media is a vital link in disseminating information to the public via television, radio, and newspapers.

The internet provides an opportunity for citizens to find information while in the relatively safe confines of their homes. There currently exists a website, www.PandemicFlu.gov, where citizens can find how to prepare for and respond to influenza and the latest data on all aspects of influenza throughout the world. As the pandemic develops a web site will be set up and updated daily to keep Wilson County citizens informed. In a similar vein citizens will be urged to communicate electronically, by internet and telephone, rather than face to face, to help prevent the spread of influenza.

Use of Radio, TV, Weather Radios

All available media outlets will be utilized during the pandemic to provide an up-to-date source of truthful information. WEMA will regularly provide information to the local radio station and other radio and television stations in the area for dissemination to citizens. In the event of an emergency WEMA can broadcast over local radio station WANT from the Emergency Operations Center. Weather radios are an excellent method of communications, especially to provide emergency notifications, and all citizens are encouraged to obtain weather radios

Status Briefing

The county will provide a regular status briefing. Based on the extent of the epidemic the briefing may be at a meeting site or, alternatively, conducted using electronic means such as a conference call or by using the internet on an interactive basis.

Creation of Special PIO Pandemic Team

The Wilson County Health Department, University Medical Center, and Wilson County Emergency Management Agency will create a joint public information team. No single agency will provide public information without the concurrence of the others. This technique will help ensure only accurate and current information is made available to all information outlets.

Section 15. Identification of Presence of Pandemic in Wilson County

Once pandemic flu is confirmed in the United States, Wilson County will work closely with the state of Tennessee Department of Health and respond in a logical, organized manner. County leaders will meet, evaluate situations as they change and make decisions designed to mitigate the impact of the epidemic on the county. It is imperative that the response be proactive with prevention a main goal. This may require immediate radical steps, such as closures of all schools, government offices and restrictions on public gatherings.

The Wilson County Pandemic Influenza Plan, in conjunction with the State of Tennessee Plan will be implemented and steps taken as appropriate. The situation will be constantly changing such that these plans will provide guidelines for county leaders as they address the issues as they unfold. Throughout the pandemic the Wilson County Health Department will be the lead agency for evaluating conditions, current and anticipated, within the county and take the lead in decision making. The citizens of Wilson County will be kept informed of the extent of the disease within the county, steps they can take to help mitigate the extent and severity, and how to best respond to the various situations as they unfold.

Section 16. Allocation of Critical Resources

The “just-in-time” delivery system used in the United States may create shortages of critical supplies such as food and water if the pandemic causes absences at or closures of businesses that produce, transport, or sell these products. As a result, Wilson County may experience a shortage of food and/or water during the pandemic. The guidelines for managing existing supplies of critical items are as follows.

Drinking Water

Water will be allocated in order of Emergency Services, Hospitals, Governmental Leaders, General Public.

Food

Food will be allocated in order of Emergency Services, Hospitals, Governmental Leaders, General Public.

Electrical Power

Electrical Power will be allocated in order of Emergency Services, Hospitals, Governmental Leaders, General Public.

Fuel

Fuel will be allocated in order of Emergency Services, Hospitals, Governmental Leaders, General Public.

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Attachments

1. Wilson County Health Department Annex to the Tennessee Department of Health Pandemic Flu Plan.

2. University Medical Center Pandemic Flu Plan

3. *Management of Dead Bodies after Disasters: A Field Manual for First Responders* published by the Pan American Health Organization

Attachment 1

Wilson County Annex to the Tennessee Department of Health Pandemic Flu Plan

COUNTY ANNEX

WILSON COUNTY

Section 1: Continuity of Operations

Refer to State/Regional Plan

Section 2: Disease Surveillance

Syndromic surveillance, as well as reporting from local medical providers, will be used as part of disease surveillance. In addition, enhanced surveillance will be conducted as requested by the state health department.

Section 3: Laboratory

Laboratory testing will be performed at the state/regional level. The state laboratory will be responsible for communicating safety, testing protocols, and other laboratory information to clinical laboratories licensed in Tennessee.

Section 4: Healthcare Planning

Refer to State/Regional Plan

Section 5: Vaccine

Refer to State/Regional Plan for vaccine sites.

If there is a vaccination site in Wilson County, security will be provided by one of the following: the Wilson County Sheriff's Office, the Lebanon Police Department, the Mt. Juliet Police Department, or the Watertown Police Department.

The regional office will inform the Wilson County Health Department who is to receive the vaccine.

Section 6: Antiviral

Refer to State/Regional Plan

Section 7: Community Interventions

<u>Schools</u>
School closing policy
Please see attached information list.

Social Distancing

Refer to State/Regional Plan

Community Education

Governments

Industry

Information will be sent to the Chambers of Commerce in Wilson County on Pandemic Flu Planning and Preparation. Businesses that employ large groups of people include, but are not limited to the following:

Regional Mortuary Services

Refer to State/Regional Plan

Section 8: Communication

Local News Outlets

In the event of a pandemic flu outbreak, local cable channels will begin running prepositioned messages on social distancing.

Section 9: Workforce and Psychological Support

Refer to State/Regional Plan

EMERGENCY SUPPORT FUNCITON 8

HEALTH AND MEDICAL SERVICES FOR WILSON COUNTY

PANDEMIC RESPONSE

SUBFUNCTION 4

I. **Lead Agency:** **Wilson County Health Department**
Director Carla Valdez (615) 444-5325
carla.valdez@state.tn.us

II. **Support Agencies:** **Wilson County Emergency Management Agency**
Director John Jewell (615 444-8799

Wilson County Sheriff's Office
Sheriff Terry Ashe (615) 444-1412 (Dispatch)

MAYORS:

Wilson County Mayor
Robert Dedman (615) 444-1383

City of Lebanon Mayor
Don Fox (615) 443-2839

City of Mt. Juliet Mayor
Linda Elam (615) 758-0285

City of Watertown Mayor
Mike Jennings (615) 237-3326

HOSPITAL:

University Medical Center
(615) 8263

POLICE DEPARTMENTS:

City of Lebanon Police Department
Chief Scott Bowen (615) 453-4333

POLICE DEPARTMENTS: (continued)

City of Mt. Juliet Police Department
Chief Andy Garrett (615) 754-2550

City of Watertown Police Department
Chief Joe Hall (615) 237-3326

SCHOOLS:

Wilson County Schools
Mike Davis (615) 453-7297

City of Lebanon Special School District
Dr. Sharon Roberts (615) 449-6060

Friendship Christian School
Jon Shoulders, President (615) 449-1573

Mt. Juliet Christian Academy
Greg Scheck, Head Master (615) 758-2427

Cumberland University
Dr. Harvill C. Eaton, President (615) 444-2562

CHAMBER OF COMMERCE

City of Mt. Juliet – West Wilson
Mark Hinesley (615) 758-3478

Lebanon – Wilson County
Sue Vanatta (615) 444-5503

MEDIA:

WANT FM/WCOR AM
615-444-3699

The Lebanon Democrat
Joseph Adams (615) 444-3952

MEDIA: (continued)

The Wilson Post
Zach Owensby (615) 444-6008

The Watertown Gazette
Lounita Howard (615) 237-9325

The Mt. Juliet Chronicle
Joe Fleenor (615) 754-6111

OTHER:

Tennessee Emergency Management Agency
Kelly Zadakaus, Regional Coordinator (615) 741-0495
Chris Johnson, Area Coordinator (615) 969-6692

Attachment 2

University Medical Center Pandemic Flu Plan

UNIVERSITY MEDICAL CENTER
POLICY/PROCEDURE

Department:	INFECTION CONTROL	Policy Number:	
Subject:	PANDEMIC FLU PLAN	Effective Date:	
Approval:_____		Reviewed/Revised Date(s):	

PURPOSE: Because antiviral medication and vaccine supplies are likely to be very scarce during a pandemic and may not be available at times, hospitals must rely upon infection control measures to reduce transmission of novel/pandemic influenza virus to other patients, staff and visitors. In addition, infection control is necessary to prevent other hospital-acquired infections that would pose competing demands on scarce resources such as ventilator and critical care beds.

POLICY: It is the policy of University Medical Center to provide safe care to patients and provide safe working conditions.

PERSONNEL: All staff

PROCEDURE:

ASSUMPTIONS:

1. Incubation period for seasonal flu is 24 hours to 5 days; estimates for novel/pandemic flu virus range from 24 hours to 10 days.

2. Some persons may have seasonal virus for 24 hours before they develop symptoms; it is unclear how much transmission occurs within that timeframe. However, transmission is lost likely after development of symptoms.

3. In the absence of antiviral therapy, viral shedding of seasonal flu is greatest during the first 2 days of symptoms, and continues until 5 days after onset of illness, but can continue for more than 7 days, especially in children and immunocompromised hosts.

4. Transmission occurs when infectious particles are deposited directly or via contaminated hands on mucosal surfaces (i.e., eyes, nose, and respiratory mucosa).

5. Droplets (rather than droplet nuclei) are believed to be the predominant mode of transmission for seasonal influenza. Droplets may disperse for 3-6 feet. Surgical masks are considered adequate to prevent transmission via droplets.

6. Airborne transmission is not common. However, aerosols (that reach the alveoli) are 10-100 times more infectious than droplets that deposited in the nasopharynx.

7. Aerosol-generating procedures include endotracheal intubation, suctioning, and nebulizer treatments. Surgical masks do not provide adequate protection against aerosols. N95 respirators should be used for aerosol-generating procedures.

8. Seasonal (H3N2) flu virus may survive 48 hours on hard non-porous surfaces (e.g., stainless steel), 8-12 hours on cloth, paper and tissue, and 5 minutes on hands at 35-49% humidity and a temperature of 82.4° F (28° C). Survival is enhanced under conditions of cool temperatures and low humidity (typically the winter months). Virus can be transferred from nonporous surfaces to hands for 24 hours and from paper tissues to hands for 15 minutes.

9. Influenza viruses are susceptible to all EPA registered disinfectants.

10. Novel influenza viruses may cause symptoms or be detected in tissues atypical of seasonal influenza; for example, although diarrhea is a prominent symptom in patients with H5N1, and active replication of H5N1 has occurred in human gastrointestinal mucosa, there has been no evidence to date that it can be transmitted from person-to-person via the fecal-oral route.

11. Novel/pandemic influenza viruses may behave differently (e.g, amount/duration/peak of viral shedding) from seasonal influenza virus.

12. As more is known about a novel or pandemic influenza virus, these assumptions and recommendations may change.

13. During a pandemic, it is highly likely that there will be alternate standards of care (see Surge Capacity section).

14. Patients should be admitted to the hospital for care only if hospital services are deemed necessary and beneficial.

15. Some recommendations may not be feasible during a pandemic. In recognition of this, IC recommendations are subdivided into measures applicable to Pandemic Alert Period (Phases 3,4,5) and Pandemic Period (Phase 6). At time of writing of this plan, we are in the alert period (Phase 3). Implementation of activities pertaining to this phase will be begun as soon as possible. Plans for implementation of activities for the Pandemic Period (Phase 6) will be prepared to use if necessary.

Index of Infection Control Recommendations:

	Pandemic Alert Period Phases 3,4,5	Pandemic Period Phase 6
Implement respiratory etiquette	X	X
Implement surveillance and triage	X	Modified
Implement isolation precautions	X	Modified
Implement transport protocols	X	Modified
Implement patient placement isolation, and cohorting protocols	X	Modified
Implement engineering and environment controls	X	Modified
Ensure staff are fit-tested and can use PPE	X	X
Report individual suspect cases to health department	X	N/A
Considering purchasing antivirals for use in staff	X	X Antivirals not likely available for purchase
Implement exposure reporting and evaluation	X	Modified
Ensure protocols in place to prevent transmission from diagnostic specimens	X	Modified
Ensure infection control has sufficient resources	X	Modified

✓ PANDEMIC ALERT PERIOD (PHASES 3,4, AND 5) INFECTION CONTROL MEASURES

- Implement Respiratory Etiquette Education

  a. Reduce the spread of illnesses (including influenza) spread via respiratory droplets in area such as waiting rooms of Emergency Departments.
  b. All patients or visitors with fever and cough or fever and rash should be provided with a surgical mask. (Rash in NOT a major symptom of influenza, however, the combination with fever may indicate another communicable disease (e.g., meningococcus, measles,

c. chickenpox, smallpox), where droplet and/or airborne precautions are needed.

d. Provide instructions on proper use and disposal of masks. (Refer to attached educational posters)
e. For patients who cannot wear a surgical mask, provide tissues and instructions on when to use them (i.e., when coughing, sneezing, or controlling nasal secretions), how and where to dispose of them and the importance of hand hygiene after handling this material.
f. Provide hand hygiene materials in waiting room areas and encourage patients with respiratory symptoms to perform hand hygiene. Alcohol concentrations of alcohol-based hand sanitizers should be between 60 and 95%. Designate an area in the waiting room where patients with respiratory symptoms can be segregated (ideally by at least 3 feet) from other patients who do not have respiratory symptoms.
g. Place patients with respiratory symptoms in a private ED room as soon as possible.
h. Implement use of surgical masks by healthcare personnel during the evaluation of patients with respiratory symptoms.
i. Instruct registration and triage staff to remain at least 3 feet from unmasked patients and to consider wearing surgical masks during respiratory infection season (October-May) and once novel/pandemic influenza virus cases have been identified in the US or Pandemic Phase (Level 6). If staff are in an area where aerosol-generating procedures are perform, N95 respirators should be used.
j. Continue to use droplet precautions to manage patients with respiratory symptoms until it is determined that the cause of symptoms is not an infectious agent that requires precautions beyond Standard Precautions.

- Implement Surveillance and Triage (Phases 3,4,5)
  a. Implementation will help to detect cases infected with a novel influenza strain (with pandemic potential) and prevent transmission to staff, visitors and other patients.
  b. Screening questions are likely to change over time depending on the geographic spread of a novel or pandemic influenza virus. These screening questions involve clinical and epidemiologic criteria. Examples of clinical criteria (e.g., fever, cough myalgia) and epidemiologic (e.g., travel to certain locations, exposure to certain activities (e.g., contact with sick poultry) or occupations (e.g., healthcare workers, laboratory workers). The Tennessee Department of Health Communicable and Environmental Disease Services Section

(CEDS) will communicate the up-to-date screening questions to the Pandemic Flu Coordinator.

c. The Pandemic Flu Coordinator will update hospital staff on the appropriate screening questions and the status of a novel/pandemic virus locally, nationally and globally.
d. Ensure staff can use PPE effectively, are trained and updated regularly.
e. The date, time and location of patient, when patient was provided with surgical mask and when staff implemented use of personal protective equipment (PPE) (including type of PPE used: e.g., N95 or surgical mask) should be part of the triage notes.
f. Triage staff will be trained on how to assess risks for a novel or pandemic influenza virus and use any applicable tools (thermometers, respiratory signs/symptoms checklist) to screen patients.
g. Patients who meet the screening criteria will be placed in Negative Pressure Rooms or under portable Negative Pressure System.
h. Utilization of N95 masks during aerosol-generating procedures is necessary during Phase 3,4, and 5 when positive screening criteria has been met.

- Implement Isolation Precautions (Phases 3,4,5)
  a. It is important to use isolation precaution to minimize exposure of patients, staff and visitors to novel influenza virus.
  b. Staff will be reminded of the importance of strict adherence to and proper use of standard infection control, especially hand hygiene and isolation.
  c. All patients with suspected novel/pandemic influenza virus seen in the ED will be placed in a private room meeting airborne isolation (AII) requirements (negative pressure), if available, otherwise, they will be placed in a private room, and portable isolation unit will be used. A surgical mask will be placed on the patient.
  d. Plant Ops will perform the necessary tests to ensure negative pressure before placing patient into the isolation room. The test will be performed daily thereafter and documented.
  e. All patients with suspected novel/pandemic influenza will be placed on Droplet and Contact Precautions. All persons entering the room will wear a Particulate Respirator (N95), if unavilable then a surgical mask, will be worn upon entry.
  f. If aerosol-generating procedures are likely, if possible, place

those patients in negative airflow room and use airborne precautions (e.g., an N95 respirator).

g. Airborne Precautions include the use of N95 respirator, gloves, gown, protective eyewear (for splashes and to prevent self-inoculation) and goggles for aerosol-generating procedures.
h. N95 mask is to be used for a single patient encounter only and not throughout the shift.
i. Remove gloves by peeling off inside-out. Dispose of gloves in trash.
j. Remove goggles or face shield by handling the head band or ear pieces.
k. Remove gown by unfastening the back and then remove with inside outward (touching inside of gown only). Dispose of gown in trash.
l. Exit room, close the door.
    1. Clean hands with alcohol based hand rub.
    2. Remove N95 respirator and discard in trash.
    3. Perform hand hygiene with antiseptic soap and water immediately after removing all PPE.
    4. Put on clean exam gloves and decontaminate goggles by wiping exterior surface with alcohol or EPA approved disinfectant.
    5. Remove gloves and perform hand hygiene with antiseptic soap or alcohol-based hand rub.
m. A log will be maintained of all persons entering the room of patients with a suspect or probable novel/pandemic influenza virus.
n. Aerosol-generating procedures (e.g, sputum induction, airway suctioning, aerosol medication therapy, bronchoscopy, endotracheal intubation, BiPAP, CPAP):
o. Airborne/Contact Precautions (including eye protection for all patients) will be used for performing all procedures that generate aerosols.
p. The use of aerosol-generating procedures will be limited to those that are deemed medically necessary.
q. Treatments will be performed in an AII (negative airflow) room, if available.
r. The number of healthcare workers will be kept to a minimum, if possible.
s. Healthcare workers will be fit tested prior to being assigned to patients on Airborne Precautions.
t. Ambu bags will be equipped with small-volume heat and moisture exchange filter.
u. Bacterial/viral filters will be used on exhalation valves of mechanical ventilators.

v. Eye protection will consist of goggles that fit snugly around the eyes.

w. A face shield may be worn over goggles to protect exposed areas of the face, but will not be used as a primary form of eye protection for these procedures.

- Implement Transport Protocols (Phases 3,4,5)

  a. It is very important to minimize exposure of patients, staff and visitors to novel influenza during transporting patients.
  b. Minimize intra-hospital transport of patients with suspected novel influenza virus.
  c. Patients being transported for essential diagnostic tests or from ED to hospital room will wear a surgical mask.
  d. Envelope-wrap or drape the patient in a clean sheet prior to transport.
  e. Transportation by stretcher will be arranged so that the patient can quickly have the procedure/testing done and immediately be transported back to their room using the same stretcher.
  f. The receiving department will be notified prior to patient transport.
  g. Ventilators used in patient transport will use bacterial/viral filters on the exhalation valve.
  h. The healthcare workers transporting the patient should wear particulate (N95) masks, gloves, gown and eye protection.
  i. Clean the stretcher immediately after use with a disinfectant wipe or an EPA registered disinfectant.
  j. When available the negative airflow transport tent should be used.

- Implement Patient Placement, Isolation and Cohorting Protocols (Phase 3,4,5)

  a. It is very important to minimize exposure of patients, staff and visitors to novel influenza virus by proper patient placement, isolation and cohorting, when necessary.
  b. Patients with suspect or probable novel/pandemic influenza virus should be admitted only if admission is medically indicated.
  c. Patients requiring hospitalization should ideally be admitted to a room meeting airborne infection isolation criteria.
  d. The number of staff allowed to enter the room should be minimized to only essential personnel.
  e. A lack of AII (negative airflow) rooms and/or need to concentrate infection control efforts and resources may lead to:
     1. Cohorting patients in individual rooms.

2. Converting private AII (negative airflow) rooms to double rooms to accommodate more patients requiring airborne isolation. This would only be implemented following a recommendation from CEDS at the TDH.
3. Whenever possible, hospitalized pandemic influenza patients should have procedures/tests done in their own rooms, rather than transporting to other areas.

- Implement Engineering and Environmental Controls (Phases 3,4,5)

a. Minimize exposure of patients, staff and visitors to novel/pandemic influenza by implementation of engineering and environmental controls.
b. Plant Operations will be responsible for ensuring the AII (negative airflow) rooms are functioning properly by testing prior to placing patients on Airborne Precautions and daily thereafter.
c. Plant Operations will be responsible for documentation of the test results performed to ensure the AII (negative airflow) rooms are operating properly.
d. If all AII (negative airflow) rooms are occupied, non-AII rooms will be identified to be modified to achieve appropriate airflow direction and/or air exchanges. Possibilities include mounting a small fan in the window.
e. Preference for AII (negative airfow) rooms during the pre-pandemic period will be:
    1. Patients who meet the novel influenza case definition.
    2. Patients who are exposed and symptomatic but do not meet the novel influenza case definition.
    3. A hospital epidemiologist at TDH should be consulted if there are other patients requiring airborne isolation (e.g., tuberculosis, measles, chickenpox), so that AII room use is prioritized according to risk to other patients, visitors and staff.
f. If the patient must temporarily leave the AII (negative airflow) room, the door should be kept closed for a minimum of 30 minutes prior to anyone entering without wearing a respiratory protection device. Likewise, the door should remain closed for a minimum of 30 minutes when patients are discharged from an AII room. The 30 minute time period will allow the room ventilation system to remove any droplets/droplet nuclei.
g. Environmental disinfection:
    1. Frequently touched surfaces will be cleaned frequently with an EPA-approved disinfectant-detergent or 1:10 dilution of

bleach and water.

2. Following discharge, hospital rooms housing novel/pandemic influenza patients will be terminally cleaned and disinfected using the hospital's policy. Housekeeping personnel will wear gloves, gown, N95/surgical mask and eye protection (i.e., goggles or face shield) until cleaning is complete.
3. In procedure areas (e.g., Radiology), all equipment (e.g., stretchers) having direct or close contact with patients with suspected novel/pandemic influenza cases must be disinfected immediately after use with an EPA-approved disinfectant-detergent or 1:10 dilution of bleach and water.
4. These environmental guidelines may be revised by the TDH as additional information becomes available.

- Ensure staff are fitted for N95 Respirators and can use PPE correctly (Phases 3,4,5)

  a. It is important to protect staff from becoming infected with communicable infectious diseases, including novel influenza virus.
  b. Staff that may be taking care of patients infected with communicable infectious diseases including novel influenza virus and/or likely to be exposed to aerosol-generating procedures should be trained on proper use of PPE and N95 respirator application. These include staff in the ED, ICU, medical-surgical floor, respiratory therapy, radiology, support and environmental services.
  c. Crash Carts will not have N95 respirators, face shields or goggles on them, but these items are available on the units.

- Ensure mechanisms are in place to track movement of patients, staff and visitors throughout the hospital. (Phase 3,4,5)

  a. It is important to rapidly identify contacts of possible novel influenza cases and to identify and quarantine asymptomatic contacts or isolate contacts with symptoms (fever, cough, shortness of breath)
  b. This section is applicable only until community transmission is occurring in the United States and there are no longer clear epidemiologic links among cases.
     1. Incubation period for influenza can be as short as 24 hours.

2. Restrict visitors to novel influenza patients or to all inpatients (except for pediatric patients) to reduce the burden of contact tracing.

3. The local/regional heal department will be contacted to assist in the identification and monitoring of contacts of potential cases infected with a novel influenza virus.
4. Begin log of coming into contact with patient(s)

- Report suspect cases to the Health Department.

a. This ensures that cases and contacts of patients with novel influenza virus get access to the appropriate diagnostic tests.
b. Appropriate infection control precautions and/or isolation and/or quarantine measures (if appropriate) will be communicated in order to reduce transmission to others.
c. This ensures the latest information on clinical management/treatment of novel influenza viruses is communicated to hospital staff.
d. Individual suspect cases will be reported by phone to the health department immediately.
e. As of March, 2006, diagnostic tests (RT-PCR) for H5 and H7 novel influenza viruses are available through the State Public Health Laboratory. The laboratory will not test any samples for novel influenza viruses without approval by a physician from CEDS. Assistance on the interpretation of diagnostic tests will be provided by CEDS.
f. Hospital staff will be expected to assist public health staff to obtain the clinical and epidemiologic information necessary for disease control. This may include information such as potential sources of infection (e.g., travel itinerary), contacts during the incubation period and in the infectious period (from 24 hours before onset of symptoms onwards), details of when the patient was provided with a surgical mask, locations of the patient within the hospital setting (date/time in/out, what PPE staff and visitors were required to wear). Details will be provided by the TDH to the Pandemic Flu Coordinator. Follow-up clinical information is also

expected (e.g., results of chest x-ray, admission to ICU, deaths, alternate diagnoses). The hospital will designate who will be responsible for reporting

the case, communicating initial information and follow-up information to the Health Department. The specific information required will be based upon the epidemiology at the time.

- Consider the purchase of antiviral medications for use in staff (Phase 3,4,5)

    a. Use of antiviral medication by staff may reduce illness and death from novel/pandemic influenza in patients and staff.
    b. There is limited data on the benefit of using antiviral (e.g., oseltamivir) in reducing illness and death. It is unclear whether the novel/pandemic influenza virus will be susceptible to oseltamivir.
    c. The current treatment course may need to be modified to treat a novel/pandemic influenza virus (e.g., increase the dose and/or duration of treatment).
    d. There are limited supplies of antivirals stockpiled in the U.S. in the Strategic National Stockpile (SNS). As of March 2006, 5.1 million standard treatment courses of antivirals have been stockpiled. The state of Tennessee does not have a separate stockpile at this time.
    e. There will be strict restrictions of the use of antivirals from the federal stockpile; the TDH will follow federal guidance. In specific situations before a pandemic begins, the State Epidemiologist or their designee at the TDH may authorize prophylactic use to respond to pre-pandemic outbreaks of a novel influenza virus. Prophylaxis of heathcare providers using state or federal stockpiled antiviral medications will not be done during a pandemic; the limited supplies will be reserved to treatment of ill patients only.
    f. HRSA funds are available for purchasing a stockpile of antivirals for use by hospital staff.
        1. The supplies of antivirals held by the hospital purchased with HRSA funds are for staff use and cannot be used to treat patients. There are different restrictions according to the funding source

(i.e., federal, HRSA funds or hospital funds).

g. Antivirals may be designated as a controlled substance to ensure accountability and security. Instructions on use of

DEA numbers for antiviral prescriptions will be provided by the TDH.

h. Ensure that antiviral supplies are physically secure in the hospital pharmacy because of the risk of theft or misuse.
i. For standard human influenza (H3N2), oseltamivir is most effective if started within 12 hours of onset of symptoms, although some benefit is derived if taken up to 48 hours after onset of symptoms. It is recommended to assess staff and provide them with oseltamivir within 12 hours of onset of symptoms.

- Implement exposure reporting and evaluation protocols (Phase 3,4,5)

a. It is important to minimize exposure of patients, staff and visitors to novel influenza before a pandemic begins
b. By providing assessment and treatment (if available) it will help to minimize staffing disruptions.
c. Occupational exposure consists of providing care to a novel influenza patient or being in the same room of a person with suspected novel influenza without proper PPE.
d. All occupational exposures must be reported to the Employee Health Nurse. The Employee Health Nurse will notify the local/regional health department of all employee exposures, as part of the follow-up on suspect cases and their contacts. Details to be provided include date (s) of exposure, duration of exposure, what PPE staff was wearing, whether the suspect case-patient was wearing a surgical mask and whether aerosol-generating procedures were performed. Any change in clinical status of the exposed staff member will be communicated to the health department.
   1. Any employee with respiratory symptoms should report to the Employee Health Nurse for evaluation at such time when the Pandemic Flu Coordinator is notified by the State Epidemiologist or their designee at the TDH to implement the policy for reporting.
   2. Management of asymptomatic healthcare workers exposed to novel influenza:
   3. Persons who have been exposed to novel influenza will

notify the Employee Health nurse.

e. Symptoms to be alerted to are: Fever or respiratory symptoms following exposure for 10 days (or the time-period provided by CEDS at such time). Those who develop fever or respiratory symptoms should limit interactions outside the home and not report for work, school, out-of-home child care, worship services, or other public areas. Exposed unprotected healthcare workers who are asymptomatic, depending upon the disease, may be placed on sick leave at the discretion of the Medical Director during the incubation period of the disease.

f. Exposed, unprotected healthcare workers who are asymptomatic and who are allowed to work must be evaluated prior to work each day by the Employee Health Nurse or their designee.

g. These examinations will be performed for a time period (as provided by CEDS, based on the latest available information) following the last unprotected exposure. In addition, exposed asymptomatic healthcare workers should take their own temperature 2 times per day. If they feel febrile and/or have a fever of >100.4°F (38.0°C) they will report these findings to the Employee Health Nurse or designee.

h. Healthcare workers with respiratory symptoms will be required to undergo rapid testing for Influenza A, Influenza B and RSV. Depending on the negative predictive value (NPV) of the diagnostic test available at the time, healthcare workers who test negative may be allowed to continue to work, while wearing a mask and practicing good hand hygiene. CEDS will provide guidance on the NPV of specific diagnostic tests for novel influenza available at the time.

- Management of symptomatic healthcare workers exposed to novel influenza:
    a. Exposed healthcare workers who develop fever and/or respiratory tract symptoms should not report to work. They should immediately report by phone the development of fever and/or respiratory tract symptoms.
    b. The healthcare worker may be provided with antiviral therapy, if available, that was purchased with the federal, HRSA or hospital funds.

c. The healthcare worker needs to be aware of the importance of rapidly (preferably within 12 hours of onset of symptoms) beginning antiviral treatment as recommended by CEDS

d. If symptoms do not progress to meet the suspect novel influenza case definition within the specified time period (as provided by CED, based on the latest available information) the person may be allowed to return to work, school, out-of home child-care, worship or other public areas, and infection control precautions can be discontinued.

e. Healthcare workers will be prioritized for diagnostic testing for novel influenza virus. Following recovery, these healthcare workers will be immune. They may not required future vaccination (if the virus has not changed) and they could provide care in high-risk settings.

- Management of asymptomatic healthcare workers with high-risk exposure to a novel influenza:

  a. To manage an unprotected high-risk exposure of a worker (e.g., the worker is in the same room as probable novel influenza patient during a high-risk aerosol-generating procedure and infection control precautions are either absent or breached) who is asymptomatic, the worker:

     1. Should be excluded from work for a time period (as provided by CEDS, based on the latest available information) follow the date of the last high-risk exposure.
     2. May be required by the Department of Health to limit activities outside the healthcare setting.
     3. Should undergo and document/record active surveillance for the development of fever or respiratory symptoms

- Implement measures to prevent transmission from diagnostic specimens (Phases 3,4,5)

  a. It is necessary to minimize exposure of patients, staff and visitors to novel influenza during the collection, transportation and processing of specimens.
  b. If possible, obtain diagnostic specimens through less risky methods rather than aerosol-generating (e.g., induced sputum, bronchoscopy) methods.

c. If aerosol-generating procedures are performed, all staff in the room must use the appropriate PPE (N95 respirator).
d. Alert the lab of suspect novel influenza cases for any respiratory specimens, so that appropriate precautions can be taken.

e. Viral culture should not be performed in clinical laboratories on suspect novel/pandemic influenza cases because of risk to lab personnel.

- Ensure Infection Control has adequate resources (Phases 3,4,5)
  a. This will help to minimize nosocomial transmission of novel influenza virus to staff and reduce absenteeism from illness and fear of illness.
  b. Infection Control personnel will be needed to formally monitor and reinforce compliance with PPE measures and policies.
  c. Continued attention to infection prevention/control measures (e.g., for central line insertions, prevention of ventilator-associated pneumonia) will prevent hospital acquired infections which would significantly increase hospital stays and impact the availability of scare resources such as mechanical ventilators and critical care beds.
  d. Infection control is essential to the provision of safe medical care. With poor infection control measures, it could possibly be more hazardous to be hospitalized than to be treated at home, if the patient does not require life-saving interventions in a hospital setting.
  e. Attention to basic infection control (e.g., availability and use of hand-hygiene supplies) must be reinforced, especially in response to increased patient care demands, reduced staffing and scarce resources.
  f. Consider stockpiling essential PPE equipment.
  g. Ensure that access to hand-hygiene supplies, environmental disinfectants and other essential supplies for infection prevention will be maintained during a pandemic; consider stockpiling.

✓ <u>PANDEMIC PERIOD (PHASE 6) INFECTION CONTROL MEASURES</u>

i. Implement Respiratory Etiquette Education
ii. Reduce the spread of illnesses (including influenza) spread via respiratory droplets in area such as waiting rooms of Emergency Departments.

iii. All patients or visitors with fever and cough or fever and rash should be provided with a surgical mask. (Rash in NOT a major symptom of influenza, however, the combination with fever may indicate another communicable disease (e.g., meningococcus, measles, chickenpox, smallpox), where droplet and/or airborne precautions are needed.

iv. Provide instructions on proper use and disposal of masks. (Refer to attached educational posters)

v. For patients who cannot wear a surgical mask, provide tissues and instructions on when to use them (i.e., when coughing, sneezing, or controlling nasal secretions), how and where to dispose of them and the importance of hand hygiene after handling this material.

vi. Provide hand hygiene materials in waiting room areas and encourage patients with respiratory symptoms to perform hand hygiene. Alcohol concentrations of alcohol-based hand sanitizers should be between 60 and 95%. Designate an area in the waiting room where patients with respiratory symptoms can be segregated (ideally by at least 3 feet) from other patients who do not have respiratory symptoms.

vii. Place patients with respiratory symptoms in a private ED room as soon as possible.

viii. Implement use of surgical masks by healthcare personnel during the evaluation of patients with respiratory symptoms.

ix. Instruct registration and triage staff to remain at least 3 feet from unmasked patients and to consider wearing surgical masks during respiratory infection season (October-May) and once novel/pandemic influenza virus cases have been identified in the US or Pandemic Phase (Level 6). If staff are in an area where aerosol-generating procedures are performed N95 respirators should be used.

- Implement Surveillance and Triage (Phase 6)

a. Implementation will help to detect cases infected with a novel influenza strain (with pandemic potential) and prevent transmission to staff, visitors and other patients.

b. Screening questions are likely to change over time depending on the geographic spread of a novel or pandemic influenza virus. These screening questions involve clinical and epidemiologic criteria. Examples of clinical criteria (e.g., fever, cough myalgia) and epidemiologic (e.g., travel to

certain locations, exposure to certain activities (e.g., contact with sick poultry) or occupations (e.g., healthcare workers, laboratory workers). The Tennessee Department of Health Communicable and Environmental Disease Services Section (CEDS) will communicate the up-to-date screening questions to the Pandemic Flu Coordinator.

c. The Pandemic Flu Coordinator will update hospital staff on the appropriate screening questions and the status of a novel/pandemic virus locally, nationally and globally.
d. Ensure staff can use PPE effectively, are trained and updated regularly.
e. The date, time and location of patient, when patient was provided with surgical mask and when staff implemented use of personal protective equipment (PPE) (including type of PPE used: e.g., N95 or surgical mask) should be part of the triage notes.
f. Triage staff will be trained on how to assess risks for a novel or pandemic influenza virus and use any applicable tools (thermometers, respiratory signs/symptoms checklist) to screen patients.
g. Patients who meet the screening criteria will be placed in either Room 4 or 5 (Negative Pressure Rooms).
h. Utilization of N95 masks during aerosol-generating procedures is necessary when positive screening criteria has been met.

- Implement Isolation Precautions (Phase 6)

a. It is important to use isolation precaution to minimize exposure of patients, staff and visitors to novel influenza virus.
b. Staff will be reminded of the importance of strict adherence to and proper use of standard infection control, especially hand hygiene and isolation.
c. All patients with suspected novel/pandemic influenza virus seen in the ED will be placed in a private room meeting airborne infection isolation (AII) requirements (negative pressure), if available, otherwise, they will be placed in a private room. A surgical mask will be placed on the patient.
d. Plant Ops will perform the necessary tests to ensure negative pressure before placing patient into the AII room. The test will be performed daily thereafter and documented.
e. All patients with suspected novel/pandemic influenza will be placed on Droplet and Contact Precautions. All persons

entering the room will wear a surgical mask upon entry.

f. If aerosol-generating procedures are likely, if possible, place those patients in an AII room and use airborne precautions (e.g., an N95 respirator).
g. Airborne Precautions include the use of N95 respirator, gloves, gown, protective eyewear (for splashes and to prevent self-inoculation) and goggles for aerosol-generating procedures.
   1. N95 mask is to be used for a single patient encounter only and not throughout the shift.
   2. Remove gloves by peeling off inside-out. Dispose of gloves in trash.
   3. Remove goggles or face shield by handling the head band or ear pieces.
   4. Remove gown by unfastening the back and then remove with inside outward (touching inside of gown only).
   5. Dispose of gown in trash.
   6. Exit room, close the door.
   7. Clean hands with alcohol based hand rub.
   8. Perform hand hygiene with antiseptic soap and water immediately after removing all PPE.
   9. Put on clean exam gloves and decontaminate goggles by wiping exterior surface with alcohol or EPA approved disinfectant.
   10. Remove gloves and perform hand hygiene with antiseptic soap or alcohol-based hand rub.
   11. A log will be maintained of all persons entering the room of patients with a suspect or probable novel/pandemic influenza virus.
   12. Aerosol-generating procedures (e.g, sputum induction, airway suctioning, aerosol medication therapy, bronchoscopy, endotracheal intubation, BiPAP, CPAP):
   13. Airborne/Contact Precautions (including eye protection For all patients) will be used for performing all procedures that generate aerosols.
   14. The use of aerosol-generating procedures will be limited to those that are deemed medically necessary.
   15. The number of healthcare workers will be kept to a minimum, if possible.
   16. Healthcare workers will be fit tested prior to being assigned to patients on Airborne Precautions.
   17. Ambu bags will be equipped with small-volume heat and moisture exchange filter.

18. Bacterial/viral filters will be used on exhalation valves of mechanical ventilators.
19. Eye protection will consist of goggles that fit snugly around the eyes.
20. A face shield may be worn over goggles to protect exposed areas of the face, but will not be used as a primary form of eye protection for these procedures.

- Implement Transport Protocols (Phase 6)

  a. It is very important to minimize expose of patients, staff and visitors to novel influenza during transporting patients.
  b. Minimize intra-hospital transport of patients with suspected novel influenza virus.
  c. Patients being transported for essential diagnostic tests or from ED to hospital room will wear a surgical mask.
  d. Envelope-wrap or drape the patient in a clean sheet prior to transport.
  e. Transportation by stretcher will be arranged so that the patient can quickly have the procedure/testing done and immediately be transported back to their room using the same stretcher.
  f. The receiving department will be notified prior to patient transport.
  g. Ventilators used in patient transport will use bacterial/viral filters on the exhalation valve.
  h. The healthcare workers transporting the patient should wear surgical masks, gloves, gown and eye protection.
  i. Clean the stretcher immediately after use with a disinfectant wipe or an EPA registered disinfectant.

- Implement Patient Placement, Isolation and Cohorting Protocols (Phase 6)

  a. It is very important to minimize exposure of patients, staff and visitors to novel influenza virus by proper patient placement, isolation and cohorting, when necessary.
  b. Patients with suspect or probable novel/pandemic influenza virus should be admitted only if admission is medically indicated.
  c. Patients requiring hospitalization should ideally be admitted to a room meeting airborne infection isolation criteria.
  d. The number of staff allowed to enter the room should be minimized to only essential personnel.

e. A lack of AII rooms and/or need to concentrate infection control efforts and resources may lead to:
   1. Cohorting patients in individual rooms.
   2. Converting private AII rooms to double rooms to accommodate more patients requiring airborne isolation. This would only be implemented following a recommendation from CEDS at the TDH.
   3. Whenever possible, hospitalized pandemic influenza patients should have procedures/tests done in their own rooms, rather than transporting to other areas.

- Implement Engineering and Environmental Controls (Phases 6)

a. Minimize exposure of patients, staff and visitors to novel/pandemic influenza by implementation of engineering and environmental controls.
b. Plant Operations will be responsible for ensuring the AII (negative airflow) rooms are functioning properly by testing prior to placing patients on Airborne Precautions and daily thereafter.
c. Plant Operations will be responsible for documentation of the test results performed to ensure the AII (negative airflow) rooms are operating properly.
d. If all AII (negative airflow) rooms are occupied, non-AII rooms will be identified to be modified to achieve appropriate airflow direction and/or air exchanges. Possibilities include mounting a small fan in the window.
e. The TDH will provide guidance on prioritization of AII (negative airflow) rooms during a pandemic. The Hospital Epidemiologst in CEDS will be consulted if there are other patients requiring airborne isolation (e.g., TB, measles, chickenpox)
f. Environmental disinfection:
   1. Frequently touched surfaces will be cleaned frequently with an EPA-approved disinfectant-detergent or 1:10 dilution of bleach and water.
   2. Following discharge, hospital rooms housing novel/pandemic influenza patients will be terminal cleaning and disinfection using the hospital's policy. Housekeeping personnel will wear gloves, gown, surgical mask and eye protection (i.e., goggles or face shield) until cleaning is complete.
   3. In procedure areas (e.g., Radiology), all equipment (e.g., stretchers) having direct or close contact with patients with suspected novel/pandemic influenza cases must be

disinfected immediately after use with an EPA-approved disinfectant- detergent or 1:10 dilution of bleach and water.

4. These environmental guidelines may be revised by the TDH as additional information becomes available.

- Ensure staff are fitted for N95 Respirators and can use PPE correctly (Phase 6)

  a. It is important to protect staff from becoming infected with communicable infectious diseases, including novel influenza virus.
  b. Staff that may be taking care of patients infected with Communicable infectious diseases including novel influenza virus and/or likely to be exposed to aerosol-generating procedures should be trained on proper use of PPE and N95 respirator application. These include staff in the ED, ICU, medical-surgical floor, respiratory therapy, radiology, support and environmental services.
  c. Crash Carts will not have N95 respirators, face shields and goggles on them, but these will be available.

- Consider the purchase of antiviral medications for use in staff (Phase 6)

  a. Use of antiviral medication by staff may reduce illness and death from novel/pandemic influenza in patients and staff.
  b. There is limited data on the benefit of using antiviral (e.g., oseltamivir) in reducing illness and death.
  c. It is unclear whether the novel/pandemic influenza virus will be susceptible to oseltamivir.
  d. The current treatment course may need to be modified to treat a novel/pandemic influenza virus (e.g., increase the dose and/or duration of treatment).
  e. There are limited supplies of antivirals stockpiled in the U.S. in the Strategic National Stockpile (SNS). As of March 2006, 5.1 million standard treatment courses of antivirals have been stockpiled. The state of Tennessee does not have a separate stockpile at this time.
  f. There will be strict restrictions of the use of antivirals from the federal stockpile; the TDH will follow federal guidance. In specific situations before a pandemic begins, the State Epidemiologist or their designee at the

TDH may authorize prophylactic use to respond to pre-pandemic outbreaks of a novel influenza virus. Prophylaxis of heathcare providers using state or federal stockpiled antiviral medications will not be done during a pandemic; the limited supplies will be reserved to treatment of ill patients only.

g. HRSA funds are available for purchasing a stockpile of antivirals for use by hospital staff. The supplies of antivirals held by the hospital purchased with HRSA funds are for staff use and cannot be used to treat patients. There are different restrictions according to the funding source (i.e., federal, HRSA funds or hospital funds).
h. Antivirals may be designated as a controlled substance to ensure accountability and security. Instructions on use of DEA numbers for antiviral prescriptions will be provided by the TDH.
i. Ensure that antiviral supplies are physically secure in the hospital pharmacy because of the risk of theft or misuse.
j. For standard human influenza (H3N2), oseltamivir is most effective if started within 12 hours of onset of symptoms, although some benefit is derived if taken up to 48 hours after onset of symptoms. It is recommended to assess staff and provide them with oseltamivir within 12 hours of onset of symptoms.
k. It is unlikely that antivirals will be available for purchase by hospitals during the pandemic period.

- Implement exposure reporting and evaluation protocols (Phase 6)

a. Occupational exposure consists of providing care to a pandemic influenza patient or being in the same room of a person with suspected pandemic influenza without proper PPE.
b. All employees should monitor their temperature twice a day and be vigilant for development of respiratory symptoms.
c. Healthcare workers who develop fever and/or respiratory tract symptoms should not report to work. They should immediately report by phone the development of fever and/or respiratory tract symptoms.
d. Healthcare workers with respiratory symptoms will be required to undergo rapid testing for Influenza A, Influenza B and RSV. Depending on the negative predictive value (NPV) of the diagnostic test available at the time, healthcare workers

who test negative may be allowed to continue to work, while wearing a mask and practicing good hand hygiene. CEDS will provide guidance on the NPV of specific diagnostic tests for novel influenza available at the time.

e. The healthcare worker may be provided with antiviral therapy, if available, that was purchased with the federal, HRSA or hospital funds.
f. If symptoms do not progress to meet the suspect novel influenza case definition within the specified time period (as provided by TDH, based on the latest available information) the person may be allowed to return to work, school, out-of home child-care, worship or other public areas, and infection control precautions can be discontinued.
g. Healthcare workers will be prioritized for diagnostic testing for novel influenza virus. Following recovery, these healthcare workers will be immune. They may not required future vaccination (if the virus has not changed) and they could provide care in high-risk settings.

- Implement measures to prevent transmission from diagnostic specimens (Phases 6)

  a. It is necessary to minimize exposure of patients, staff and visitors to novel influenza during the collection, transportation and processing of specimens.
  b. If possible, obtain diagnostic specimens through less risky methods rather than aerosol-generating (e.g., induced sputum, bronchoscopy) methods.
  c. If aerosol-generating procedures are performed, all staff in the room must use the appropriate PPE (N95 respirator).
  d. Alert the lab of suspect novel influenza cases for any respiratory specimens, so that appropriate precautions can be taken.
  e. Viral culture should not be performed in clinical laboratories on suspect novel/pandemic influenza cases because of risk to lab personnel.

- Ensure Infection Control has adequate resources (Phases 6)

  a. This will help to minimize nosocomial transmission of novel influenza virus to staff and reduce absenteeism from illness and fear of illness.

b. During the influenza pandemic Infection Control personnel will be needed to formally monitor and reinforce compliance with PPE measures and policies. This should be their primary responsibility. The TDH will provide guidance as to which reporting requirements (e.g., CMS) will be suspended. It is recommended that personnel other than infection control personnel be tasked with reporting aggregate data to CEDS.

c. Continued attention to infection prevention/control measures (e.g., for central line insertions, prevention of ventilator-associated pneumonia) will prevent hospital acquired infections which would significantly increase hospital stays and impact the availability of scare resources such as mechanical ventilators and critical care beds.

d. . Infection control is essential to the provision of safe medical care. With poor infection control measures, it could possibly be more hazardous to be hospitalized than to be treated at home, if the patient does not require life-saving interventions in a hospital setting.

References:

1. HHS Pandemic Flu Plan. US Department of Health and Human Services, November 2005.
2. WHO Avian Influenza (Bird Flu Factsheet) February 2006.
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4. UNC Highly Communicable Respiratory Diseases: Preparedness and Response Plan, March 6, 2006.
5. RI Hospital PandemicInfluenza Planning (February 3, 2006)
6. Public Health Guidance for Community-Level Preparedness and Response to SARS, Version 2, CDC. July 2004.
7. SARS Hospital Preparedness Guidance, TDH< January 2003.

Appendix A

Recommendations For Infection Control in Community Settings

Infection control in the community should focus on "social distancing" and promoting respiratory hygiene/cough etiquette and hand hygiene to decrease exposure to others. This could include the use of masks by persons with respiratory symptoms, if feasible. Although the use of masks in community settings has not been demonstrated to be a public health measure to decrease infections during a community outbreak, persons may choose to wear a mask as part of individual protection strategies that include cough etiquette, hand hygiene, and avoiding public gatherings. Mask use may also be important for persons who are at high risk for complications of influenza. Public education should be provided on how to use masks appropriately. Persons at high risk for complications of influenza should try to avoid public gatherings (e.g., movies, religious services, public meetings) when pandemic influenza is in the community. They should also avoid going to other public areas (e.g., food stores, pharmacies); the use of other persons for shopping or home delivery service is encouraged.

Summary of Infection Control Recommendations for Care of Patients with Pandemic Influenza
Component
Recommendations

Standard Precautions
See www.cdc.gov/ncidod/hip/ISOLAT/std_prec_excerpt.htm

Hand hygiene
Perform hand hygiene after touching blood, body fluids, secretions, excretions, and contaminated items; after removing gloves; and between patient contacts. Hand hygiene includes both handwashing with either plain or antimicrobial soap and water or use of alcohol-based products (gels, rinses, foams) that contain an emollient and do not require the use of water. If hands are visibly soiled or contaminated with respiratory secretions, they should be washed with soap (either non-antimicrobial or antimicrobial) and water. In the absence of visible soiling of hands, approved alcohol-based products for hand disinfection are preferred over antimicrobial or plain soap and water because of their superior microbicidal activity, reduced drying of the skin, and convenience.

Personal protective equipment (PPE)

Gloves
Gown
Face/eye protection (e.g., Particulate Respirator –N95 mask (preferable), surgical or procedure mask and goggles or a face shield)

For touching blood, body fluids, secretions, excretions, and contaminated items; for touching mucous membranes and nonintact skin. During procedures and patient-care activities when contact of clothing/exposed skin with blood/body fluids, secretions, and excretions is anticipated During procedures and patient care activities likely to generate splash or spray of blood, body fluids, secretions, excretions

Safe work practices
Avoid touching eyes, nose, mouth, or exposed skin with contaminated hands (gloved or ungloved); avoid touching surfaces with contaminated gloves and other PPE that are not directly related to patient care (e.g., door knobs, keys, light switches).

Patient resuscitation
Avoid unnecessary mouth-to-mouth contact; use mouthpiece, resuscitation bag, or other ventilation devices to prevent contact with mouth and oral secretions.

Soiled patient care equipment
Handle in a manner that prevents transfer of microorganisms to oneself, others, and environmental surfaces; wear gloves if visibly contaminated; perform hand hygiene after handling equipment.

Soiled linen and laundry
Handle in a manner that prevents transfer of microorganisms to oneself, others, and to environmental surfaces; wear gloves (gown if necessary) when handling and transporting soiled linen and laundry; and perform hand hygiene.

Needles and other sharps
Use devices with safety features when available; do not recap, bend, break or hand-manipulate used needles; if recapping is necessary, use a one-handed scoop technique; place used sharps in a puncture-resistant container.

Environmental cleaning and disinfection
Use EPA-registered hospital detergent-disinfectant; follow standard facility procedures for cleaning and disinfection of environmental surfaces; emphasize cleaning/disinfection of frequently touched surfaces (e.g., bed rails, phones, lavatory surfaces).

Disposal of solid waste

Contain and dispose of solid waste (medical and non-medical) in accordance with facility procedures and/or local or state regulations; wear gloves when handling waste; wear gloves when handling waste containers; perform hand hygiene.

Respiratory hygiene/cough etiquette
Source control measures for persons with symptoms of a respiratory infection; implement at first point of encounter (e.g., triage/reception areas) within a healthcare setting. Cover the mouth/nose

when sneezing/coughing; use tissues and dispose in no-touch receptacles; perform hand hygiene after contact with respiratory secretions; wear a mask (procedure or surgical) if tolerated; sit or stand as far away as possible (more than 3 feet) from persons who are not ill.

Droplet Precautions
www.cdc.gov/ncidod/hip/ISOLAT/droplet_prec_excerpt.htm

Patient placement
Place patients with influenza in a private room or cohort with other patients with influenza.* Keep door closed or slightly ajar; maintain room assignments of patients in nursing homes and other residential settings; and apply droplet precautions to all persons in the room.

*During the early stages of a pandemic, infection with influenza should be laboratory-confirmed, if possible. Personal protective equipment : wear a particlate respirator (N95 mask), surgical or procedure mask for entry into patient room; wear other PPE as recommended for standard precautions.

Patient transport
Limit patient movement outside of room to medically necessary purposes; have patient wear a procedure or surgical mask when outside the room.

Other
Follow standard precautions and facility procedures for handling linen and laundry and dishes and eating utensils, and for cleaning/disinfection of environmental surfaces and patient care equipment, disposal of solid waste, and postmortem care.

Aerosol-Generating Procedures
During procedures that may generate small particles of respiratory secretions (e.g., endotracheal intubation, bronchoscopy, nebulizer treatment, suctioning), healthcare personnel should wear gloves, gown, face/eye protection, and a fit-tested N95 respirator or other appropriate particulate respirator.

Respiratory Hygiene/Cough Etiquette
To contain respiratory secretions, all persons with signs and symptoms of a respiratory infection, regardless of presumed cause, should be instructed to:

Cover the nose/mouth when coughing or sneezing.
Use tissues to contain respiratory secretions.
Dispose of tissues in the nearest waste receptacle after use.
Perform hand hygiene after contact with respiratory secretions and contaminated objects/materials.

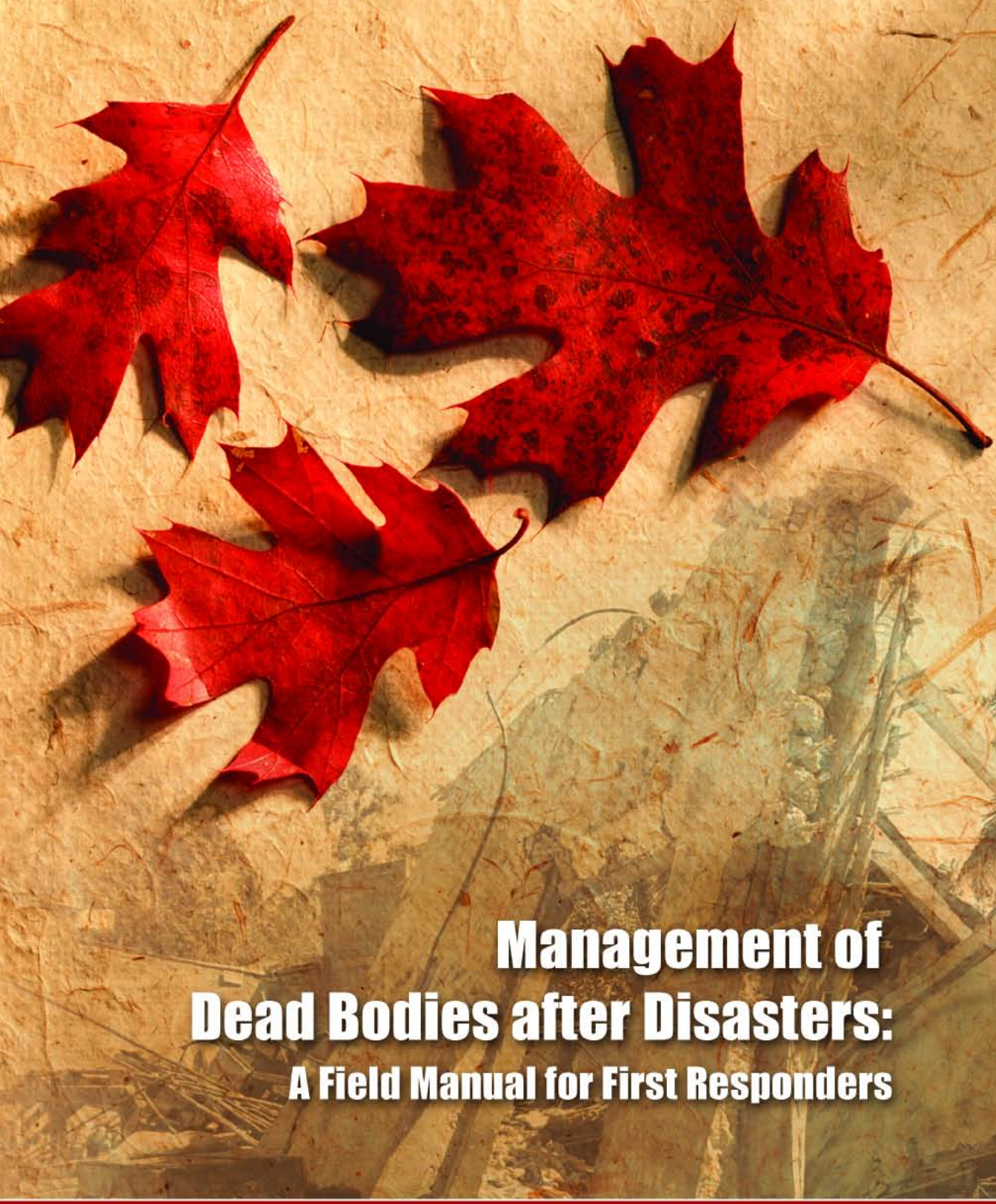
Healthcare facilities should ensure the availability of materials for adhering to respiratory hygiene/cough etiquette in waiting areas for patients and visitors:

Provide tissues and no-touch receptacles for used tissue disposal.
Provide conveniently located dispensers of alcohol-based hand rub.
Provide soap and disposable towels for handwashing where sinks are available.

Masking and separation of persons with symptoms of respiratory infection
During periods of increased respiratory infection in the community, persons who are coughing should be offered either a procedure mask (i.e., with ear loops) or a surgical mask (i.e., with ties) to contain respiratory secretions. Coughing persons should be encouraged to sit as far away as possible (at least 3 feet) from others in common waiting areas. Some facilities may wish to institute this recommendation year-round.

Attachment 3

Management of Dead Bodies after Disasters: A Field Manual for First Responders **– Published by the Pan American Health Organization**



Management of Dead Bodies after Disasters:

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Pan American Health Organization
Regional Office of the World Health Organization

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Management of Dead Bodies after Disasters:

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1. CADAVER
2. NATURAL DISASTERS
3. DISASTER EMERGENCIES
4. DISASTER PLANNING

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FOREWORD

Management of the dead is one of the most difficult aspects of disaster response, and natural disasters, in particular, can cause a large number of deaths. Although the humanitarian community has been aware of these challenges for over 20 years, the massive loss of life following the South Asian tsunami in 2004 highlighted limitations in our current capacity to respond. Several large natural disasters in 2005, including Hurricane Katrina in the United States, Hurricane Stan in Central America, and the earthquake in Northern Pakistan and India, further reveal the need for practical guidance.

Natural disasters frequently overwhelm local systems that care for the deceased. Consequently, the responsibility for the immediate response falls on local organizations and communities. The absence of specialist advice or mass fatality planning amplifies the problems, often resulting in the mismanagement of human remains. This is significant because the way victims are treated has a profound and long-lasting effect on the mental health of survivors and communities. In addition, correct identification of the dead has legal significance for inheritance and insurance that can impact on families and relatives for many years after a disaster.

This manual marks an important step toward promoting better treatment of victims and their families. It recognizes the vital role of local organizations and communities and the exceptionally difficult task of managing human remains following disasters.

We are pleased that the principles outlined in this document are being implemented and promoted by a variety of organizations, including the Pan American Health Organization, the World Health Organization, the International Committee of the Red Cross and the International Federation of the Red Cross and Red Crescent Societies.

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Chapter 4	Body Recovery	Oliver Morgan
Chapter 5	Storage of Dead Bodies	Oliver Morgan Pongruk Sribanditmongkol
Chapter 6	Identification of Dead Bodies	Stephen Cordner Pongruk Sribanditmongkol
Chapter 7	Information Management	Morris Tidball-Binz
Chapter 8	Long-term Storage and Disposal of Dead Bodies	Oliver Morgan Yves Etienne Boyd Dent
Chapter 9	Communications and the Media	Morris Tidball-Binz
Chapter 10	Support to Families and Relatives	Morris Tidball-Binz
Chapter 11	Frequently Asked Questions	Claude de Ville de Goyet
Annexes	Dead Bodies Identification Form Missing Persons Form	Ute Hofmeister Morris Tidball-Binz

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1. INTRODUCTION

This manual has two broad aims: first, to promote the proper and dignified management of dead bodies, and second, to maximize their identification. Following disasters, implementing simple measures early on can significantly improve the opportunity for successful identification. However, after the majority of disasters the immediate management of human remains is done by local organizations and communities and not by specialist teams of national and international experts. Consequently this manual focuses on practical recommendations for non-specialists.

Immediately after a disaster there is little time to read guidelines, so this manual dedicates one chapter for each key task and uses bullet-points for brevity and clarity. Local coordinators can photocopy and distribute the relevant chapters to individuals responsible for specific tasks, such as body recovery.

Throughout the manual we have chosen to use the term “dead bodies” instead of the more respectful and technically correct term “human remains,” because the term “dead bodies” is less ambiguous for readers whose first language is not English.

This manual does not provide a comprehensive framework for forensic investigation. However, following the recommendations will aid the work of forensic specialists when they arrive at the scene. These recommendations will also help communities for whom forensic expertise is unavailable to collect basic information that may aid identification of the deceased. Nevertheless, this manual does not replace the need for specialist forensic identification of victims.

2. COORDINATION

Overview

- Immediately after a disaster, emergency response is often chaotic and uncoordinated.
- Coordination is needed at several levels: local, regional/provincial, and national.
- Disaster preparedness plans may already have identified a coordination structure.
- Early coordination is vital for the following tasks:
  - Manage information and coordinate assessment activities.
  - Identify required resources (e.g., forensic teams, morgues, body bags, etc.).
  - Implement a plan of action for the management of dead bodies.
  - Disseminate accurate information to families and communities about identification of the missing and management of dead bodies.

Effective local coordination

- As soon as possible, and in accordance with existing disaster preparedness plans, identify an agency and name a person to serve as a local coordinator with full authority and responsibility for the management of dead bodies (e.g., local Governor, Police Chief, Military Commander, Mayor).
- The selection of Medical or Hospital Directors as coordinators should be discouraged as their primary responsibility is the care of the living and injured.
- Within the Emergency Operations Center establish a team to coordinate management of the dead. Include key operational partners such as the military, civil defense, fire service, local emergency or rescue organizations, National Red Cross/Red Crescent Society, and local funeral homes, morticians, and coroners, etc.

- Appoint persons to be in charge of one or more of the following tasks and provide them with a copy of the relevant chapter in this manual:
  - Body recovery (Chapter 4).
  - Storage (Chapter 5).
  - Identification (Chapter 6).
  - Information and communication (Chapters 7, 9 and 11).
  - Disposal (Chapter 8).
  - Support for families (Chapter 10).
  - Logistics (Chapters 4, 5, 6 and 8).

Effective regional and national coordination

- As soon as possible, name a person as a national or regional coordinator and provide him or her with the appropriate authority for the management of dead bodies (e.g. Minister, Governor, Police Chief, Military Commander, Mayor).
- Refer to the mass fatality section of your disaster response plan or major incident procedures manual, if available.
- Establish a coordination group including key individuals to advise on:
  - Communications with the public and the media.
  - Legal issues about identification and death certification.
  - Technical support for identification and documentation.
  - Logistical support (e.g., military or police).
  - Liaison with diplomatic missions, inter-governmental and international organizations (for example, United Nations, World Health Organization, International Committee of the Red Cross, International Federation of Red Cross and Red Crescent Societies and INTERPOL).

3. INFECTIOUS DISEASE RISKS

Overview

- After most natural disasters there is fear that dead bodies will cause epidemics.
- This belief is wrongly promoted by the media, as well as some medical and disaster professionals.
- Dead bodies do not cause epidemics after natural disasters.
- The political pressure brought about by these rumors causes authorities to use unnecessary measures such as rapid mass burials and spraying so-called "disinfectants."
- The consequences of mismanagement of the dead include mental distress and legal problems for relatives of the victims.
- The surviving population is much more likely to spread disease.

Infections and dead bodies

- Victims of natural disasters are normally killed by injury, drowning, or fire—not by disease.
- At the time of death, victims are not likely to be sick with epidemic-causing infections (i.e., plague, cholera, typhoid, and anthrax).
- A few victims will have chronic blood infections (hepatitis or HIV), tuberculosis, or diarrheal disease.
- Most infectious organisms do not survive beyond 48 hours in a dead body. An exception is HIV which has been found six days postmortem.

Risk to the public

- The risk to the public is negligible because they do not touch dead bodies.
- There is the potential (but as yet undocumented) risk of drinking water supplies contaminated by fecal material released from dead bodies.

Risk to body handlers

- Individuals handling human remains have a small risk through contact with blood and feces (bodies often leak feces after death) from the following:
  - Hepatitis B and C.
  - HIV.
  - Tuberculosis.
  - Diarrheal disease.
- Body recovery teams work in hazardous environments (e.g., collapsed buildings and debris) and may also be at risk of injury and tetanus (transmitted via soil).

Safety precautions for body handlers

- Basic hygiene protects workers from exposure to diseases spread by blood and certain body fluids. Workers should use the following precautions:
  - Use gloves and boots, if available.
  - Wash hands with soap and water after handling bodies and before eating.
  - Avoid wiping face or mouth with hands.
  - Wash and disinfect all equipment, clothes, and vehicles used for transportation of bodies.
- Face masks are unnecessary, but should be provided if requested to avoid anxiety.
- The recovery of bodies from confined, unventilated spaces should be approached with caution. After several days of decomposition, potentially hazardous toxic gases can build-up. Time should be allowed for fresh air to ventilate confined spaces.
- See Chapter 4 (Body Recovery) for recommendations about the use of body bags.

4. BODY RECOVERY

Overview

- Body recovery is the first step in managing dead bodies and is usually chaotic and disorganized.
- Many different people or groups are involved in body recovery. Communication and coordination with them is often difficult.
- This part of the process can be essential for identification and should be read in conjunction with Chapter 6, Identification of Dead Bodies.
- Body recovery only lasts a few days or weeks, but may be prolonged following earthquakes or very large disasters.

The aim of body recovery

- Rapid retrieval is a priority because it aids identification and reduces the psychological burden on survivors.
- Recovery of bodies should not interrupt other interventions aimed at helping survivors.

The workforce

- Body recovery is often done spontaneously by a large number of individuals, including:
  - Surviving community members.
  - Volunteers (e.g., National Red Cross/Red Crescent Societies).
  - Search and rescue teams.
  - Military, police or civil defense personnel.

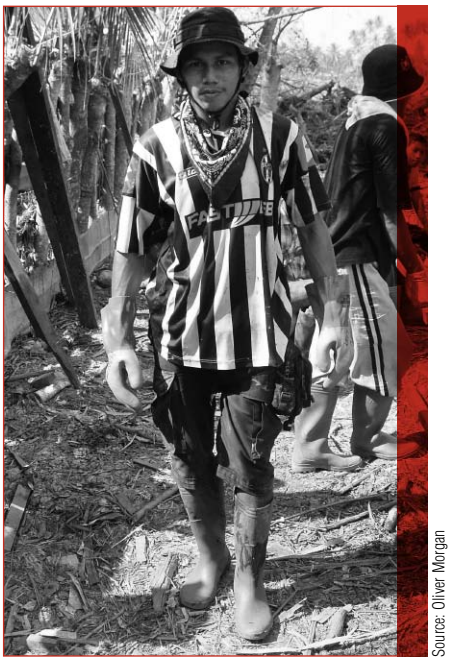
- Coordination of these groups is needed to encourage the use of procedures and health and safety precautions recommended in this manual.

Methods and procedures

- Bodies should be placed in body bags. If these are unavailable, use plastic sheets, shrouds, bed sheets, or other locally available material.
- Body parts (e.g., limbs) should be treated as individual bodies. Recovery teams should not attempt to match the body parts at the disaster scene.
- Body recovery teams work most effectively in two groups: one to take bodies to a nearby collection point and a second to take them to identification or storage areas.
- Noting the place and date where the body was found helps identification (see Annex 1, Dead Bodies Form).
- Personal belongings, jewelry, and documents should not be separated from the corresponding remains during recovery, but only during the identification phase (see Chapter 6, Identification of Dead Bodies).
- Stretchers, body bags, and flatbed trucks or tractor-trailers can be used to transport bodies. Ambulances should not be used for this purpose as they are best used to help the living.

Health and safety

- Body recovery teams should wear protective equipment (heavy-duty gloves and boots) and wash their hands with soap and water after handling dead bodies (see Chapter 3, Infectious Disease Risks).
- Recovery teams often work among debris or collapsed buildings. First-aid and medical treatment should be available in case of injury.
- Tetanus may be a particular problem in unvaccinated workers. Local medical teams should be on the alert for tetanus prone injuries.



Source: Oliver Morgan

Protective equipment used for body recovery, Banda Aceh, Indonesia, 2005.

5. STORAGE OF DEAD BODIES

Overview

- Without cold storage decomposition advances rapidly.
- Within 12 to 48 hours in hot climates, decomposition will be too advanced to allow facial recognition.
- Cold storage slows the rate of decomposition and preserves the body for identification.

Storage options

- Whichever storage option is used, each body or body part should be kept in a body bag or wrapped in a sheet before storage.
- Waterproof labels (e.g., paper in sealed plastic) with a unique identification number should be used (see Box 6.1 in Chapter 6, Identification of Dead Bodies). Do not write identification numbers on bodies or body bags/sheets as they are erased easily during storage.

Refrigeration

- Refrigeration between 2°C and 4°C is the best option.
- Refrigerated transport containers used by commercial shipping companies can be used to store up to 50 bodies.
- Enough containers are seldom available at the disaster site and alternative storage options should be used until refrigeration becomes available.

Temporary burial

- Temporary burial provides a good option for immediate storage where no other method is available, or where longer term temporary storage is needed.

- Temperature underground is lower than at the surface, thereby providing natural refrigeration.
- Temporary burial sites should be constructed in the following way to help ensure future location and recovery of bodies:
  - Use individual burials for a small number of bodies and trench burial for larger numbers.
  - Burial should be 1.5m deep and at least 200m from drinking water sources (see Chapter 8, Long-term Storage and Disposal of Dead Bodies).
  - Leave 0.4m between bodies.
  - Lay bodies in one layer only (not on top of each other).
  - Clearly mark each body (see Chapter 6, Identification of Dead Bodies) and mark their positions at ground level.

AFP/Getty Images

Temporary burial of dead bodies in Thailand following the tsunami disaster on 26 December 2004.

Dry ice

- Dry ice [carbon dioxide (CO^2) frozen at -78.5°C] may be suitable for short-term storage.
  - Dry ice should not be placed on top of the bodies, even when wrapped, because it damages the body.
  - Build a low wall of dry ice (i.e., 0.5m high) around groups of about 20 bodies and cover with a plastic sheet, tarpaulin, or tent.
  - About 10 kg of dry ice per body, per day is needed, depending on outside temperature.
  - Dry ice must be handled carefully as it causes "cold burns" if touched without proper gloves.
  - When dry ice melts it produces carbon dioxide gas, which is toxic. Closed rooms or buildings should be avoided when using dry ice in preference to areas with good natural ventilation.

Ice

- The use of ice (frozen water) should be avoided where possible because:
  - In hot climates ice melts quickly and large quantities are needed.
  - Melting ice produces large quantities of dirty waste water that may cause concern about diarrheal disease. Disposal of this waste water creates additional management issues.
  - The water may damage bodies and personal belongings (e.g., identity cards).

6. IDENTIFICATION OF DEAD BODIES

Overview

- Identification of dead bodies is done by matching the deceased (physical features, clothes, etc.) with similar information about individuals who are missing or presumed dead.
- Mobilizing forensic resources may take several days. This means that early opportunities to identify bodies may be lost as the bodies decompose.
- Visual identification or photographs of fresh bodies are the simplest forms of identification and can maximize the early non-forensic identification process.
- Forensic procedures (autopsies, fingerprinting, dental examinations, DNA) can be used after visual identification of bodies or photographs becomes impossible.
- The early work of non-specialists will determine much of the success of future identifications by forensic specialists.
- The Dead Bodies Identification Form in Annex 1 can be used to collect basic and invaluable information that will aid later forensic identification procedures.

General principles

- Sooner is better for victim identification. Decomposed bodies are much more difficult to identify and require forensic expertise.
- The key steps to identification as described below are: Unique reference number, Label, Photograph, Record, and Secure.
- It should be appreciated that visual identification and photographs, while simple, can result in mistaken identification.
- Injuries to the deceased, or the presence of blood, fluids, or dirt, especially around the head, will increase the chance of mistaken identification.
- Any separate body part which proves that a person is dead can aid in the identification and should therefore be managed as though it is a whole body (i.e., using a unique reference number).

Processes

Unique reference (mandatory)

- Assign a sequential, unique reference number to each body or body part. Reference numbers must not be duplicated. (see Box 6.1, page 17 for a recommended numbering system).

Label (mandatory)

- Write the unique reference number on a waterproof label (e.g., paper sealed in plastic) then securely attach it to the body or body part.
- A waterproof label with the same unique reference number must also be attached to the container for the body or body part (e.g., body bag, cover sheet or bag for the body part).

Photograph (mandatory – if photographic equipment is available)

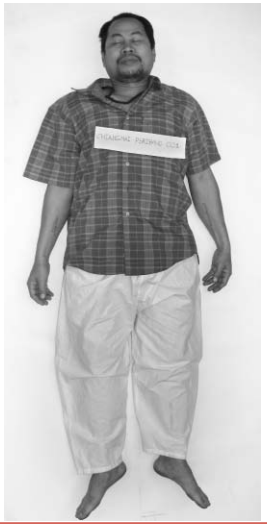
- The unique reference number must be visible in all photographs.
- If available, digital cameras allow for easier storage and distribution of photographs.
- Clean the body sufficiently to allow facial features and clothing to be properly represented in the photographs.
- In addition to the unique reference number, the photographs should include at least:
  - A full length of the body, front view;
  - Whole face;
  - Any obvious distinguishing features.
- If circumstances permit, or at a later time, additional photographs can be included with the unique reference number of the following:
  - Upper and lower part of the body;.
  - All clothing, personal effects, and distinguishing features.
- When taking photographs the following should be considered:
  - Blurred photographs will not be useful.
  - Photographs must be taken close to the dead body; when photographing the face, it should fill the entire picture.

- The photographer should stand at the middle of the body when taking the picture, not at the head or feet.
- The photograph must include the visible unique reference number to ensure that identification made using the photograph matches the correct body.

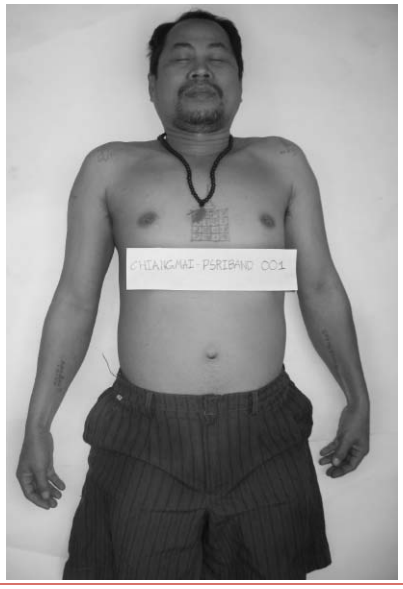
Minimum photograph set required for visual identification

A) Whole Face

B) Whole Body



C) Upper Body



D) Lower Body

Source: Pongruk Sribanditmongkol / Photographer: Kunt TongTahm Na Ayudhaya

Note: For the purpose of demonstration, photographs were taken of a volunteer and not of a deceased individual.

Record (mandatory)

- If photographs have been taken, record the following data together with the unique reference using the form in Annex 1: (Dead Bodies Identification Form):
  - Gender (confirmed by looking at the genital organs).
  - Approximate age range (infant, child, adolescent, adult, or elderly).
  - Personal belongings (jewelry, clothes, identity card, driver's license, etc.).
  - Obvious specific marks on the skin (e.g., tattoos, scars, birthmarks) or any obvious deformity.
- If no photographs have been taken, also record:
  - Race.
  - Height.
  - Color and length of hair.
  - Color of eyes.

Secure

- Personal belongings should be securely packaged, labeled with the same unique reference number, and stored with the body or body part. *This is mandatory.*
- Clothing should be left on the body.

Identification and release of body to relatives

- To increase reliability of visual identification, viewing conditions should minimize emotional stress to bereaved relatives.
- Although there may be no alternative following large disasters, the psychological impact of viewing dozens or hundreds of dead bodies may reduce the validity of the identification.
- Viewing photographs of the highest possible quality may be a better approach.
- Release of a body:
  - A dead body should only be released when identification is certain.
  - Visual identification should be confirmed by other information such as identification of clothing or personal effects.
  - Information collected about missing people can be used to cross-check visual identification (see Annex 2, Missing Persons Form).

- A body should only be released by the responsible authority, which must also provide documentation of the release (a letter or death certificate).
- Record the name and contact details of the person or relatives who claimed the body together with the body's unique reference number.
- Bodies that can not be recognized by visual identification, should be properly stored (see Chapter 5, Storage of Dead Bodies) until forensic specialists can investigate.
- Care should be taken before releasing bodies that are not whole, as this may complicate subsequent management of body parts.

Box 6.1 Unique reference numbering for dead bodies

Each body or body part ***must*** have a unique reference number. The following is recommended.

PLACE + RECOVERY TEAM/PERSON + BODY COUNT

For example:

Colonia San Juan - Team A–001

OR

Chaing Mai Hospital - P. Sribanditmongkol–001

PLACE: Where possible, all bodies should be assigned a unique reference number indicating place of recovery. If recovery place is unknown, use instead the place where the body was taken for identification/storage.

RECOVERY TEAM/PERSON: Person or team numbering the body.

BODY COUNT: A sequential count of bodies at each site (e.g., 001 = body number one). See Annex 3 for a list of sequential numbers.

Note: Details about where and when the body was found and the person/organization who found it should also be recorded on the Dead Bodies Identification Form (see Annex 1).

7. INFORMATION MANAGEMENT

Overview

- State authorities bear primary responsibility for the proper handling of information about the dead and missing in disasters.
- A large amount of information is collected about the dead and missing, even after relatively small disasters. Necessary resources (human, technical, and financial) for information management must be provided.
- Management of information is a key role for coordination (see Chapter 2, Coordination).

Organizational arrangements

- Information centers should be established at regional and/or local levels.
- Local centers act as focal points for collection and consolidation of information on the dead and for attending to the public. They are particularly necessary for receiving tracing requests, leaving photographs and information about the missing, and for the release of information on persons found or identified.
- A national system for management and coordination of information should centralize all information on the dead and missing in disasters. Tracing services of the International Committee of the Red Cross and National Red Cross/Red Crescent Societies may assist in this task.
- Data should flow in both directions between the national and local level.

Information for the public

- The population should be promptly and clearly informed about the response and procedures adopted for:
  - Searching for the missing.

- Recovery and identification of dead bodies.
- Collection and release of information.
- Support for concerned families and communities.

- Information can be provided through the local or regional centers.
- A wide range of media can be used:
  - The Internet.
  - Notice boards.
  - Newspapers, television, radio, etc.

Information about dead bodies

- Basic information must be collected about all dead bodies when possible (see Chapter 6, Identification of Dead Bodies, and Annex 1, Dead Bodies Identification Form).
- Early data collection may use paper forms (see data collection forms in Annex 1, Dead Bodies Identification Form and Annex 2, Missing Persons Form) and this information may be entered into an electronic database at a later stage.
- Information is likely to include valuable personal items and photographs.
- A chain of custody is required to avoid misplacement of information and ensure the availability of evidence.
- Centralization and consolidation of information about the dead and missing is essential for increasing the possibility of finding a match between tracing requests for missing persons and available/known information of dead bodies (see Annex 1, Dead Bodies Identification Form and Annex 2, Missing Persons Form).

8. LONG-TERM STORAGE AND DISPOSAL OF DEAD BODIES

Overview

- All identified dead bodies should be released to relatives or their communities for disposal according to local custom and practice.
- Long-term storage will be required for remaining unidentified bodies.

Method of disposal/Long-term storage

- Burial is the most practical method as it preserves evidence for future forensic investigation, if required.
- Cremation of unidentified bodes should be avoided for several reasons:
  - Cremation will destroy evidence for any future identification.
  - Large amounts of fuel are needed (usually wood).
  - Achieving complete incineration is difficult, often resulting in partially incinerated remains that have to be buried.
  - It is logistically difficult to arrange for the cremation of a large number of dead bodies.

Location of burial sites

- Careful thought must be given to the location of any burial site.
- Soil conditions, highest water table level, and available space must be considered.
- The site should be acceptable to communities living near the burial site.
- The site should be close enough for the affected community to visit.
- The burial site should be clearly marked and surrounded by a buffer zone that is at least 10m wide to allow planting of deep-rooted vegetation and to separate the site from inhabited areas.

Distance from water sources

- Burial sites should be at least 200m away from water sources such as streams, lakes, springs, waterfalls, beaches, and the shoreline.
- Suggested burial distance from drinking-water wells are provided in the following table. Distances may have to be increased based on local topography and soil conditions:

Recommended distance of graves from drinking water wells

Number of bodies	Distance from drinking water well
4 or less	200m
5 to 60	250m
60 or more	350m
120 bodies or more per $100m^2$	350m

Grave construction

- If possible, human remains should be buried in clearly marked, individual graves.
- For very large disasters, communal graves may be unavoidable.
- Prevailing religious practices may indicate preference for the orientation of the bodies (i.e., heads facing east, or toward Mecca, etc.).
- Communal graves should consist of a trench holding a single row of bodies each placed parallel to the other, 0.4m apart.
- Each body must be buried with its unique reference number on a waterproof label. This number must be clearly marked at ground level and mapped for future reference.
- Although there are no standard recommendations for grave depth, it is suggested that:
  - Graves should be between 1.5m and 3m deep.
  - Graves with fewer then five people should allow for at least 1.2m (1.5m if the burials are in sand) between the bottom of the grave and the water table, or any level to which ground water rises.
  - For communal graves there should be at least 2m between the bottom of the grave and water table, or any level to which groundwater rises.
  - These distances may have to be increased depending on soil conditions.

9. COMMUNICATIONS AND THE MEDIA

Overview

- Good public communication contributes to a successful victim recovery and identification process.
- Accurate, clear, timely, and up-dated information can reduce the stress experienced by affected communities, defuse rumors, and clarify incorrect information (see Chapter 11, Frequently Asked Questions).
- The news media (TV and radio, newspapers and the Internet) are vital channels of communication with the public during mass disasters. Journalists, both local and international, often arrive soon after the disaster.

Working with the media

- Generally, most journalists want to report responsibly and accurately. Keeping them informed will minimize the likelihood of inaccurate reporting.
- Engage proactively and creatively with the media:
  - A Media-Liaison Officer should be assigned both locally and nationally.
  - Establish a Media-Liaison office (as near as possible to the affected area).
  - Cooperate proactively (prepare regular briefings, facilitate interviews, etc.).

Working with the public

- An information center for relatives of the missing and the dead should be set up as soon as possible.
- A list of confirmed dead and survivors should be made available, and details of missing individuals recorded by official staff.

- Information should be provided about the processes of recovery, identification, storage, and disposal of dead bodies.
- Arrangements for death certification may also need to be explained.

Working with relief agencies

- Humanitarian workers and relief agencies, including United Nations agencies, the International Committee of the Red Cross, and Red Cross/Red Crescent Societies, have direct contact with affected communities and may act as a source of local information.
- Aid workers are not always well informed and may give conflicting information, especially about the infectious risks of dead bodies.
- Providing correct information to aid agencies on management of the dead will further help to reduce rumors and to avoid incorrect information (see Chapter 11, Frequently Asked Questions).

Information management

- Care is needed to respect the privacy of victims and relatives.
- Journalists should not be allowed direct access to photographs, individual records, or the names of victims. However, authorities may decide to release this information in a managed way to help with the identification process.
- Soon after the disaster, a decision must be taken whether or not to provide information about the number of victims. The disadvantage of this is that these estimates will undoubtedly be wrong. The advantage is that official statistics may prevent exaggerated reporting by the media.

10. SUPPORT TO FAMILIES AND RELATIVES

Overview

- The dead and the bereaved should be respected at all times.
- The priority for affected families is to know the fate of their missing loved ones.
- Honest and accurate information should be provided at all times and at every stage of the recovery and identification process.
- A sympathetic and caring approach is owed to the families throughout.
- Mistaken identification should be avoided.
- Psycho-social support for families and relatives should be considered.
- Cultural and religious needs should be respected.

Identification of victims

- A family liaison focal point should be established to support relatives.
- Families should be informed about findings and the identification of their loved ones before anyone else.
- Families of the dead and missing must be given realistic expectations of the process, including the methods used and timeframes for recovery and identification of remains.
- Families should be allowed to report a missing relative and provide additional information.
- Identification should be conducted as speedily as possible.
- Children should not be expected to aid in the visual identification of dead bodies.
- The need for relatives to view the bodies of their loved ones as part of the grieving process should be respected.

- Once identified, bodies should be released as swiftly as possible to their next of kin.

Cultural and religious aspects

- The overwhelming desire of relatives from all religions and cultures is to identify their loved ones.
- Advice and assistance from religious and community leaders should be sought to improve understanding and acceptance of the recovery, management, and identification of the dead bodies.
- Undignified handling and disposal of dead bodies may further traumatize relatives and should be avoided at all times. Careful and ethical management of dead bodies, including disposal, should be ensured, including respect for religious and cultural sensitivities.

Providing support

- Psycho-social support should be adapted to needs, culture, and context and should consider local coping mechanisms.
- Local organizations such as the National Red Cross/Red Crescent Societies, NGOs, and faith groups can often provide emergency psycho-social care for those affected.
- Priority care should be given to unaccompanied minors and other vulnerable groups. Where possible, they should be reunited and cared for by members of their extended family or community.
- Material support may be necessary for funeral rituals, such as burial shrouds, coffins, etc.
- Special legal provisions for those affected (i.e., rapid processing of death certificates) should be considered and publicized within the affected communities.

11. FREQUENTLY ASKED QUESTIONS

Information for the public

1. Do dead bodies cause epidemics?

Dead bodies from natural disasters *do not* cause epidemics. This is because victims of natural disasters die from trauma, drowning or fire. They do not have epidemic-causing diseases such as cholera, typhoid, malaria, or plague when they die.

2. What are the health risks for the public?

The risk to the public is negligible. They do not touch or handle dead bodies. However, there is a small risk of diarrhea from drinking water contaminated by fecal material from dead bodies. Routine disinfection of drinking water is sufficient to prevent water-borne illness.

3. Can dead bodies contaminate water?

Potentially, yes. Dead bodies often leak feces, which may contaminate rivers or other water sources, causing diarrheal illness. However, people will generally avoid drinking water from any source they think has had dead bodies in it.

4. Is spraying bodies with disinfectant or lime powder useful?

No, it has no effect. It does not hasten decomposition or provide any protection.

5. Local officials and journalists say there is a risk of disease from dead bodies. Are they correct?

No. The risk from dead bodies after natural disasters is misunderstood by many professionals and the media. Even local or international health workers are often misinformed and contribute to the spread of rumors.

Information for workers

6. Is there a risk for those handling dead bodies?

For people handling dead bodies (rescue workers, mortuary workers, etc.), there is a small risk from tuberculosis, hepatitis B and C, HIV, and diarrheal diseases. However, the infectious agents responsible for these diseases do not last more than two days in a dead body (except for HIV, which may survive up to six days). These risks can be reduced by wearing rubber boots and gloves and practicing basic hygiene (i.e. washing hands).

7. Should workers wear a mask?

The smell from decaying bodies is unpleasant, but it is *not* a health risk in well-ventilated areas, and wearing a mask is not required for health reasons. However, workers may feel better psychologically if they are using masks. The public should not actively be encouraged to wear masks.

Information for authorities

8. How urgent is the collection of dead bodies?

Body collection is *not* the most urgent task after a natural disaster. The priority is to care for survivors. There is *no* significant public health risk associated with the presence of dead bodies. Nevertheless, bodies should be collected as soon as possible and taken away for identification.

9. Should mass graves be used to quickly dispose of the bodies?

No. Rapid mass burial of victims is not justified on public health grounds. Rushing to dispose of bodies without proper identification traumatizes families and communities and may have serious legal consequences (i.e., the inability to recover and identify remains).

10. What should the authorities do with dead bodies?

Dead bodies should be collected and stored, using refrigerated containers, dry ice, or temporary burial. Identification should be attempted for all human remains. Photographs should be taken and descriptive information recorded for each body. Remains should be stored (i.e., using refrigeration) or buried temporarily to allow for the possibility of an expert forensic investigation in the future.

11. What are the potential mental health issues?

The overwhelming desire of relatives (from all religions and cultures) is to identify their loved ones. All efforts to identify human remains will help. Grieving and traditional individual burial are important factors for the personal and communal recovery or healing process.

12. How should bodies of foreigners be managed?

Families of visitors killed in a disaster are likely to insist on the identification and repatriation of the bodies. Proper identification has serious economic and diplomatic implications. Bodies must be kept for identification. Foreign consulates and embassies should be informed and INTERPOL contacted for assistance.

Information for responders

13. I am a volunteer; how can I help?

To be helpful you should promote the proper recovery and management of dead bodies and assist in recording necessary information. You might also assist with the recovery and disposal of the dead, under the direction of a recognized coordinating authority. However, you would first need to be briefed, advised, equipped, and supported for this difficult task.

14. I work with an NGO; how can I help?

Providing support for families and collection of information in collaboration with the coordinating authority will best help the surviving relatives. You may also promote proper identification and treatment of the dead. NGOs should not be asked to carry out the identification of dead bodies unless they are highly specialized for this task and work for and under direct supervision of a legal authority.

15. I am a health professional; how can I help?

The survivors need you more than the dead. Any professional help in fighting the myth of epidemics caused by dead bodies will be appreciated. Talk about this to your colleagues and members or the media.

16. I am a journalist; how can I help?

If you hear comments or statements regarding the need for mass burial or incineration of bodies to avoid epidemics, challenge them. Consult PAHO/WHO, ICRC, the IFRC or the Red Cross/Red Crescent locally. Quote this and other publications. Please do not jump on the band wagon of alarmists spreading incorrect information. Be professional.

ANNEXES

Note: Those interested in adapting or copying the forms in annexes 1-4 can consult or download them from the Internet, in MS Word or PDF format, at www.paho.org/disasters (click on Publications Catalog, and see the special page about *Dead Bodies in Disaster Situations*).

Annex 1.
Dead Bodies Identification Form

Body/Body Part (B/BP) Code:
(Use unique numbering and include on associated files, photographs or stored objects.)

Possible identity of body:

Person Reporting

Name: .....

Official Status: ..... Place & Date: .....

Signature: .....

Recovery details (Include place, date, time, by whom, and circumstances of finding. Indicate if other bodies were recovered in the same area, including name and possible relationship, if identified)

B/BP Code: .....

A. PHYSICAL DESCRIPTION

A.1	**General condition** (mark one):	**a**	Complete body	Incomplete body (describe):	Body part (describe):	
		b	**Well preserved**	Decomposed	Partially skeletonized	Skeletonized
A.2	**Apparent sex** (mark one and describe evidence):		Male	Female	Probably male	Probably female / Undetermined
			Describe evidence (genitals, beard, etc):			
A.3	**Age group** (mark one):		Infant	Child	Adolescent	Adult / Elderly
A.4	**Physical description** (measure or mark one):		Height (crown to heel):		Short	Average / Tall
			Weight:		Slim	Average / Fat
A.5	**a) Head hair**		Color:	Length:	Shape:	Baldness: / Other:
	b) Facial hair		None	Moustache	Beard	Color: / Length:
	c) Body hair		Describe:			
A.6	**Distinguishing features:** **Physical** (e.g., shape of ears, eyebrows, nose, chin, hands, feet, nails; deformities, missing limbs/amputation) **Surgical implants or prosthesis** (artificial limb) **Skin marks** (scars, tattoos, piercings, birthmarks, moles, etc.) **Apparent injuries** (include location, side) **Dental condition** (crowns, gold teeth, adornments, false teeth). Describe any obvious features.		Continue on additional sheets if needed. If possible, include a sketch of the main findings.			

B/BP Code: ----------

B. ASSOCIATED EVIDENCE

B.1	**Clothing**	Type of clothes, colors, fabrics, brand names, repairs. Describe in as much detail as possible.
B.2	**Footwear**	Type (boot, shoes, sandals), color, brand, size. Describe in as much detail as possible.
B.3	**Eyewear**	Glasses (color, shape), contact lenses. Describe in as much detail as possible.
B.4	**Personal items**	Watch, jewelry, wallet, keys, photographs, mobile phone (incl. number), medication, cigarettes, etc. Describe in as much detail as possible.
B.5	**Identity documents**	Identity card, driving license, credit card, video club card, etc. Take photocopy if possible. Describe the information contained.

B/BP Code: _____

C: RECORDED INFORMATION

C.1	**Fingerprints**	Yes	No	By whom? Stored where?
C.2	**Photographs of body**	Yes	No	By whom? Stored where?

D: IDENTITY

D.1	**Hypothesis of identity**	Explain reasons for attributing a possible identity

E: STATUS OF BODY

Stored	Specify morgue, refrigerated container, temporary burial; describe location:
	Under whose responsibility:
Released	To whom and date:
	Authorized by:
	Final destination:

Note: Those interested in adapting or copying this form, please download it, in MS Word or PDF format, at www.paho.org/disasters (click on Publications Catalog, and see the special page about *Dead Bodies in Disaster Situations*).

Annex 2.
Missing Persons Form

Missing Person Number/Code:
(Use unique numbering and include it on associated files, photographs or stored objects.)

Interviewer name:

Interviewer contact details:

Interviewee(s) name(s):

Relationship with missing person:

Contact details:

Address: .....

Telephone: ..... E-mail: .....

Contact person for missing person, if different from above: (who to contact in case of news: name/contact details)

MP N°./Code: ..... **Missing Persons Data**

A. PERSONAL DETAILS

A.1	**Missing person's name:**	Include surname, father's and/or mother name, nicknames, aliases:				
A.2	**Address/Place of residence:**	Last address & usual address if different from the former:				
A.3	**Marital status:**	Single	Married	Divorced	Widowed	Partnership
A.4	**Sex:**	Male	Female			
A.5	**If female:**	Unmarried name:				
		Pregnant	Children	How many?		
A.6	**Age:**	Date of birth:			Age:	
A.7	**Place of birth, nationality, principal language**					
A.8	**Identity document:** (Main details, N°, etc.)	If available, enclose photocopy of ID				
A.9	**Fingerprints available?**	Yes	No	Where:		
A.10	**Occupation:**					
A.11	**Religion:**					

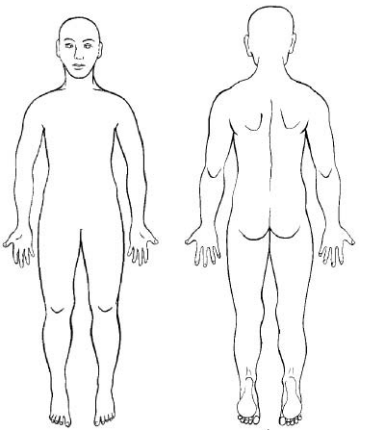
B. EVENT

B.1	**Circumstances leading to disappearance:** (use additional sheet if necessary)	Place, date, time, events leading to disappearance, other victims and witnesses who last saw Missing Person alive (incl. name and address):		
	Has this case been registered/ denounced elsewhere?	Yes	No	With whom/Where:
B.2	**Are other family members missing, and if so, have they been registered/identified?**	List name, relationship, status:		

MP N°/Code: ..... **Missing Persons Data**

C. PHYSICAL DESCRIPTION

C.1	**General description** (indicate exact measure, or approximate AND circle the corresponding group):	Height (exact/estimated?):		Short	Average	Tall
		Weight:		Slim	Average	Fat
C.2	**Ethnic group/Skin color**					
C.3	**Eye color**					
C.4	**a) Head hair**	Color:	Length:	Shape:	Baldness:	Other:
	a) Facial hair	None	Moustache	Beard	Color:	Length:
	a) Body hair	Describe				
C.5	**Distinguishing features** **Physical** e.g. shape of ears, eyebrows, nose, chin, hands, feet, nails; deformities **Skin marks** Scars, tattoos, piercings, birthmarks, moles, circumcision, etc. **Past injuries/ amputations** include location, side, fractured bone, joint (e.g., knee), and if person limped **Other major medical conditions** operations, diseases, etc. **Implants** pacemaker, artificial hip, IUD, metal plates or screws from operation, prosthesis, etc. **Types of medications** used at time of disappearance	Continue on additional sheets if needed. Use drawings and/or mark the main findings on the body chart.				



MP N°/Code: ..... **Missing Persons Data**

C.6

Dental condition:

Please describe general characteristic, especially taking into account the following:

- Missing teeth
- Broken teeth
- Decayed teeth
- Discolorations, such as stains from disease, smoking or other
- Gaps between teeth
- Crowded or crooked (overlapping) teeth
- Jaw inflammation (abscess)
- adornments (inlays, filed teeth etc)
- any other special feature

Dental treatment:

Has the Missing Person received any dental treatment such as

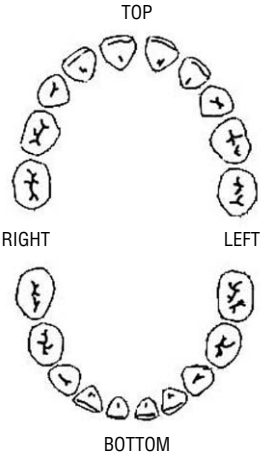
- Crowns, such as gold-capped teeth
- Color: gold, silver, white
- Fillings (incl. color if known)
- False teeth (dentures)- upper, lower
- Bridge or other special dental treatment
- Extraction

Also indicate wherever there is uncertainty (for example, the family member may know that an upper left front tooth is missing, but is unsure which one).

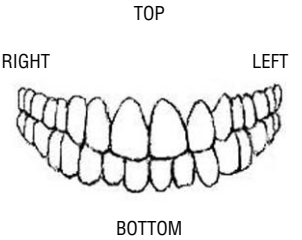
If possible, use a drawing, and/or indicate the described features in the chart below

If the missing person is a child, please indicate which baby teeth have erupted, which have fallen out and which permanent teeth have erupted and use the chart below

BABY/PRIMARY TEETH



ADULT/PERMANENT TEETH



MP N°/Code: ..... **Missing Persons Data**

D. PERSONAL EFFECTS

D.1	**Clothing** (worn when last seen/at time of disaster)	Type of clothes, colors, fabrics, brand names, repairs: describe in as much detail as possible.
D.2	**Footwear** (worn when last seen/at time of disaster)	Type (boot, shoes, sandals), color, brand, size: describe in as much detail as possible.
D.3	**Eyewear**	Glasses (color, shape), contact lenses: describe in as much detail as possible.
D.4	**Personal items**	Watch, jewelry, wallet, keys, photographs, mobile phone (incl. number), medication, cigarettes, etc: describe in as much detail as possible.
D.5	**Identity documents** (which the person was/might have been carrying when last seen/at time of disaster)	Identity card, driving license, credit card, video club card, etc. Take photocopy if possible. Describe the information contained.
D.6	**Habits**	Smoker (cigarettes, cigars, pipes), chewing tobacco, betel nut, alcohol, etc. Please describe, incl. quantity.
D.7	**Doctors, medical records, X-rays:**	Give details of doctor, dentist, optometrist, or other.
D.8	**Photographs of missing person:**	If available, enclose photos or copies of photos as recent and clear as possible, ideally smiling (with teeth visible). Also, photos of clothing worn when disappeared.

Note: The information collected in this form will be used for the search and identification of the missing person. Its content is confidential and any use outside of the intended context will need explicit consent by the interviewee.

Place and date of interview: .....

Interviewer signature: ..... Interviewee signature: .....

If requested, a copy of this form with contact details of interviewer should be made available to the interviewee.

Note: Those interested in adapting or copying this form, please download it, in MS Word or PDF format, at www.paho.org/disasters (click on Publications Catalog, and see the special page about *Dead Bodies in Disaster Situations*).

Annex 3.

Sequential Numbers for Unique Referencing

See Chapter 6, Box 6.1, for recommended unique numbering (place-team/person-number).
When using the list below, cross each number off the list when it is used to avoid using it twice.

001	051	101	151	201	251	301	351	401	451
002	052	102	152	202	252	302	352	402	452
003	053	103	153	203	253	303	353	403	453
004	054	104	154	204	254	304	354	404	454
005	055	105	155	205	255	305	355	405	455
006	056	106	156	206	256	306	356	406	456
007	057	107	157	207	257	307	357	407	457
008	058	108	158	208	258	308	358	408	458
009	059	109	159	209	259	309	359	409	459
010	060	110	160	210	260	310	360	410	460
011	061	111	161	211	261	311	361	411	461
012	062	112	162	212	262	312	362	412	462
013	063	113	163	213	263	313	363	413	463
014	064	114	164	214	264	314	364	414	464
015	065	115	165	215	265	315	365	415	465
016	066	116	166	216	266	316	366	416	466
017	067	117	167	217	267	317	367	417	467
018	068	118	168	218	268	318	368	418	468
019	069	119	169	219	269	319	369	419	469
020	070	120	170	220	270	320	370	420	470
021	071	121	171	221	271	321	371	421	471
022	072	122	172	222	272	322	372	422	472
023	073	123	173	223	273	323	373	423	473
024	074	124	174	224	274	324	374	424	474
025	075	125	175	225	275	325	375	425	475
026	076	126	176	226	276	326	376	426	476
027	077	127	177	227	277	327	377	427	477
028	078	128	178	228	278	328	378	428	478
029	079	129	179	229	279	329	379	429	479
030	080	130	180	230	280	330	380	430	480
031	081	131	181	231	281	331	381	431	481
032	082	132	182	232	282	332	382	432	482
033	083	133	183	233	283	333	383	433	483
034	084	134	184	234	284	334	384	434	484
035	085	135	185	235	285	335	385	435	485
036	086	136	186	236	286	336	386	436	486
037	087	137	187	237	287	337	387	437	487
038	088	138	188	238	288	338	388	438	488
039	089	139	189	239	289	339	389	439	489
040	090	140	190	240	290	340	390	440	490
041	091	141	191	241	291	341	391	441	491
042	092	142	192	242	292	342	392	442	492
043	093	143	193	243	293	343	393	443	493
044	094	144	194	244	294	344	394	444	494
045	095	145	195	245	295	345	395	445	495
046	096	146	196	246	296	346	396	446	496
047	097	147	197	247	297	347	397	447	497
048	098	148	198	248	298	348	398	448	498
049	099	149	199	249	299	349	399	449	499
050	100	150	200	250	300	350	400	450	500

Note: Those interested in adapting or copying this form, please download it, in MS Word or PDF format, at www.paho.org/disasters (click on Publications Catalog, and see the special page about *Dead Bodies in Disaster Situations*).

Annex 4. Body Inventory Sheet

Body ID Number	Recovery		Storage		Information recorded		Characteristics (Apparent)			Remarks
	Date	Place	Date	Location	Dead Bodies Identification Form	Photos	Sex	Age	Presumed identity	
					Y-Yes N-No	Y-Yes N-No	M-male F-female U-unknown	I-infant C-child A1-adolescent A2-adult E-elderly		

Note: Those interested in adapting or copying this form, please download it, in MS Word or PDF format, at www.paho.org/disasters (click on Publications Catalog, and see the special page about *Dead Bodies in Disaster Situations*).

Annex 5.
Supporting Publications

de Ville de Goyet, Claude. 2004. Epidemics caused by dead bodies: a disaster myth that does not want to die. *Rev Panam Salud Publica* 15(5):297-299. Available at: http://publications.paho.org/english/editorial_dead_bodies.pdf

ICRC, 2004. *Operational Best Practices Regarding the Management of Human Remains and Information on the Dead by Non-Specialists.* Available at: www.icrc.org

ICRC, 2003. Report: *The Missing and Their Families.* Available at: www.icrc.org

INTERPOL(DVI). *Guide on Disaster Victim Identification.* Available at: www.interpol.int/public/DisasterVictim/Guide

Morgan O. 2004. Infectious disease risks of dead bodies following natural disasters. *Rev Panam Salud Publica* 15(5):307-12. Available at: http://publications.paho.org/english/dead_bodies.pdf

Morgan OW, Sribanditmongkol P, Perera C, Sulasmi Y, Van Alphen D, et al. (2006) *Mass Fatality Management Following the South Asian Tsunami Disaster: Case Studies in Thailand, Indonesia and Sri Lanka*. PLoS Med 3(6): e195. Available at: www.plosmedicine.org

Pan American Health Organization. 2004. *Management of Dead Bodies in Disaster Situations.* Washington, D.C., ISBN 92-75-12529-5 (English); ISBN 92-75-32529-4 (Spanish). Available at http://publications.paho.org/english/index.cfm

Annex 6.
International Organizations involved in the development of this document

Pan American Health Organization, Regional Office for the Americas of the World Health Organization (PAHO/WHO), Area on Emergency Preparedness and Disaster Relief

In 1976, the Pan American Health Organization created this program in response to a call by the Member Countries to establish a technical unit to strengthen health sector disaster preparedness, response, and mitigation activities. The main objective of the Area on Emergency Preparedness and Disaster Relief has been to support the health sector in strengthening national disaster preparedness programs and coordinating all sectors involved in disaster preparedness. This support is channeled to the countries of Latin America and the Caribbean in three principal areas:

- *Disaster Preparedness.* Preparing the health sector to face disasters is a permanent and ongoing responsibility. Disaster preparedness enhances the capacity of the health sector to respond to all types of disasters, create awareness of the associated public health risks, and improve the knowledge and skills of all health actors. Technical areas of work include information dissemination and management, hospital disaster preparedness, mass casualty management, evaluation of damage and needs, and humanitarian supply management.
- *Risk Reduction.* PAHO/WHO encourages the Ministries of Health to promote a national culture of disaster prevention. Its own technical contribution focuses on the safety of health facilities. As an example, countries are urged to use existing knowledge and tools to build new hospitals with a level of protection that helps ensure they remain operational in disaster situations. They are also encouraged to examine the vulnerability of existing health facilities and incorporate appropriate disaster mitigation measures. PAHO/WHO applies this same strategic approach to risk reduction in water and sewerage systems to safeguard this critical infrastructure.
- *Disaster Response.* In disaster situations, PAHO/WHO mobilizes its extensive network of public health experts to survey damage and provide an authoritative assessment of health sector needs, conduct epidemiological surveillance, detect potential health risks, monitor water quality, and improve the overall coordination and leadership in the health sector. The humanitarian supply management system, SUMA, is activated to help bring order to the chaos that often results from the massive influx of international aid. PAHO/WHO also summarizes and publishes the lessons learned from major disasters in an attempt to improve the management of future emergency situations.

For more information, please visit: www.paho.org/disasters

World Health Organization, Health Action in Crises

Within WHO, the principal objective of the Health Action in Crises Department is to reduce avoidable loss of life, burden of disease, and disability in crisis-prone and crisis-affected countries. WHO works with local authorities, civil society, other international organizations, and NGOs in responding to the health aspects of crises. The major activities of WHO in a crisis are to:

- Measure ill-health and promptly assess health needs of populations affected by crises, identifying priority causes of ill-health and death;
- Support Member States in coordinating action for health;
- Ensure that critical gaps in health response are rapidly identified and filled;
- Revitalize and build capacity of health systems for preparedness and response.

WHO brings together expertise in epidemic response, logistics, security coordination, and management. It works in coordination with, and strengthens the response to health crises provided by other UN teams (typically the United Nations Children's Fund, United Nations Population Fund, United Nations Development Programme, United Nations High Commissioner for Refugees, International Organization for Migration, and the World Food Programme). Whether in Country Offices, Regional Offices, or at Headquarters, the WHO network for Health Action in Crises (HAC) provides information and services, and mobilizes partners to agree on standards and courses of action.

For more information, please visit: www.who.int/hac/en

International Committee of the Red Cross (ICRC)

The International Committee of the Red Cross (ICRC) is an impartial, neutral, and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of war and internal violence, and to provide them with assistance. This involves:

- Visiting prisoners of war and security detainees.
- Searching for missing persons.
- Transmitting messages between separated family members
- Reuniting dispersed families.
- Providing safe water, food and medical assistance to those in need.
- Promoting respect for international humanitarian law..
- Monitoring compliance with that law.
- Contributing to the development of that law.

Established in 1863, the ICRC is at the origin of the International Red Cross and Red Crescent Movement. It directs and coordinates the international relief activities conducted by the Movement in situations of conflict. It also endeavors to prevent suffering by promoting and strengthening humanitarian law and universal humanitarian principles.

For more information, please contact: www.icrc.org

The International Federation of Red Cross and Red Crescent Societies

The International Federation of Red Cross and Red Crescent Societies is the world's largest humanitarian organization, providing assistance without discrimination as to nationality, race, religious beliefs, class, or political opinions.

Founded in 1919, the International Federation has a membership of 183 Red Cross and Red Crescent societies, a Secretariat in Geneva, and more than 60 delegations strategically located to support activities around the world. There are more societies in formation. The Red Crescent is used in place of the Red Cross in many Islamic countries.

The Federation's mission is to improve the lives of vulnerable people by mobilizing the power of humanity. Vulnerable people are those who are at greatest risk from situations that threaten their survival, or their capacity to live with an acceptable level of social and economic security and human dignity. Often, these are victims of natural disasters, poverty brought about by socio-economic crises, refugees, and victims of health emergencies.

The Federation carries out relief operations to assist victims of disasters, and combines this with development work to strengthen the capacities of its member National Societies. The Federation's work focuses on four core areas: promoting humanitarian values, disaster response, disaster preparedness, and health and community care.

The unique network of National Societies—which cover almost every country in the world—is the Federation's principal strength. Cooperation between National Societies gives the Federation greater potential to develop capacities and assist those most in need. At a local level, the network enables the Federation to reach individual communities.

The Federation, together with National Societies and the International Committee of the Red Cross, make up the International Red Cross and Red Crescent Movement.

For more information, please visit: www.ifrc.org

Management of the dead is one of the most difficult aspects of disaster response. It has profound and long-lasting consequences for survivors and communities. Globally, disasters claim thousands of lives each year. However, care of the deceased is often overlooked in disaster planning and the absence of guidance for first responders has recently been highlighted following several large disasters.

Immediately after a major disaster, identifying and disposing of human remains are often done by local communities. Forensic specialists may not be available or unable to rapidly access the affected area. There are simple steps that first responders can take to ensure the dead are treated in a dignified way and that can assist in their identification.

This *Field Manual for First Responders* presents simple recommendations for non-specialists to manage the recovery, basic identification, storage and disposal of dead bodies following disasters. It also makes suggestions about providing support to family members and communicating with the public and the media.

This manual will be useful during the immediate response to a disaster and where forensic response is unavailable. Furthermore, it will be useful for those preparing mass fatality disaster plans. The recommendations are relevant for local, regional and national authorities as well as for non-governmental organizations.

The principles outlined in this document are being implemented and promoted by a variety of organizations, including the Pan American Health Organization, the World Health Organization, the International Committee of the Red Cross and the International Federation of Red Cross and Red Crescent Societies.

This document can be viewed on Internet at:
www.paho.org/disasters (click on Publications Catalog)

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