VIRGINIA NATURAL DISEASE OUTBEAK AND THE PANDEMIC INFLUENZA MASS FATALITY RESPONSE PLAN
(Developed and maintained by the Office of the Chief Medical Examiner)

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1.0 GENERAL

During a widespread natural disease outbreak or a pandemic, such as an influenza pandemic, local authorities will have to be prepared to manage additional deaths due to the disease, over and above the number of fatalities from all causes currently expected during the inter-pandemic period. Within any locality, the total number of fatalities from the outbreak (including influenza and all other causes) occurring during a 6- to 8-week pandemic wave is estimated to be similar to that which typically occurs over six months in the inter-pandemic period. This guideline aims to assist local planners and funeral directors in preparing to cope with large-scale fatalities due to an influenza (or other naturally occurring disease) pandemic. A number of issues have been identified, which should be reviewed with the local medical professionals and institutions, medical examiner's district offices, local authorities, including police, Emergency Medical Services (EMS), vital records offices, city or county attorneys, funeral directors, and religious groups/authorities.

The Virginia Department of Health, Emergency Preparedness and Response Division is responsible for distribution of this document and notifying the Office of the Chief Medical Examiner (OCME) of any changes in policy, laws, or practices which impact this plan.

The Office of the Chief Medical Examiner will be responsible for periodically reviewing and updating this plan to ensure the most accurate and up-to-date information is included.

1.1. PURPOSE

This document contains guidelines to help localities prepare to manage the increased number of deaths due to a natural disease event, such as an influenza pandemic. In a pandemic, the number of deaths will be over and above the usual number of fatalities that a locality would typically see during the same time period. This document will also augment the Virginia Department of Health's Emergency Operations Plan for Pandemic Influenza found at the following website: (http://www.vdh.state.va.us/PandemicFlu/pdf/DRAFT_Virginia_Pandemic_Influenza_Plan.pdf).

Utilizing a pandemic influenza outbreak as an example, assuming two pandemic waves of six weeks each and a five percent crude annual all causes death rate (similar to 1918), about 10,000 deaths per week per wave would occur in Virginia (This is more than 10 times the usual rate of about 900 deaths per week). Funeral businesses in the state could not meet this demand even if they were to remain fully operational; however they too will be impacted and will lose staff to illness, family illness, death, and refusal to work.

Natural disease outbreaks occurring under normal circumstances (e.g. not terrorist related) do not fall under the legal jurisdiction of the Virginia Medical Examiner. In these circumstances, the determination of cause and manner of death as well as the certification of death is expected to be completed by the decedent's treating physicians in accordance with Virginia state law (VA §32.1 – 263 paragraph C). For planning purposes, the fact that licensed physicians can manage the death determination and certification in their facilities or by coordinating with local law enforcement or other investigators at the scene, increases the manpower resources from 13 forensic pathologists in the OCME statewide, to over 18,000 available physicians during the outbreak.

Virginia does not have its own Disaster Mortuary Operations Response Team (DMORT), and the Federal DMORT teams will not be available during an outbreak because the members, who are all volunteers performing similar functions in their own communities, will be needed at home. Mutual aid will not be available for the same reasons. The capacity of existing morgues in the state would be exceeded in weeks one or two of the initial wave of pandemic influenza activity.

- For purposes of this natural disease outbreak plan, a *mass fatality* is any number of fatalities that is greater than the local mortuary affairs system can handle. (See the Office of the Chief Medical Examiner's Mass Fatality Plan for the definition of a mass fatality event under other circumstances at http://www.vdh.virginia.gov/medexam/)

- The *Mortuary Affairs System (MAS)* is a collection of agencies all working within a common system that cares for the dead. MAS addresses the entire spectrum of operations which includes search, investigation of scene and interviewing of witnesses, recovery, presumptive (tentative) and positive identification services, releasing of remains, and final disposition by the Next-of-Kin's (NOK) funeral services. MAS workers will operate processing points during a mass fatality event that include MAS collection points, personal effects depots, and records libraries. The MAS, through the integration of local or regional funeral services agencies, is also responsible for preparing remains for final disposition including the coordination of the shipment of remains.

1.2 Myths verses Facts in Dead Body Management

Obtaining solid factual and scientifically based data to build your individual plans is the corner stone for success. This section will address the facts of fatality management and address some of the most common myths surrounding human remains.

A. Facts on normal death management:

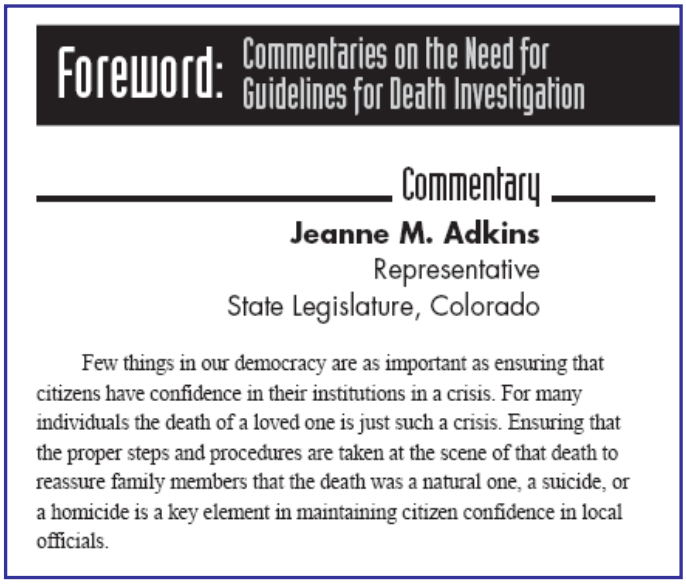
   A. Under normal conditions, 88-90 % of the fatalities in Virginia are not Medical Examiner cases because these deaths are natural diseases

occurring under natural circumstances. Non-Medical Examiner deaths are managed by the local law enforcement (if death occurred out of medical treatment facilities), EMS, treating physicians, hospitals, funeral directors, cemetery or cremation owners and the individual families.

B. Death pronouncement in Virginia is NOT required. There is no statutory requirement in Virginia for an official pronouncement of death procedure when someone dies. However, the Code of Virginia does specify who may pronounce death if a pronouncement procedure is carried out. Otherwise, the presumption is that any citizen can identify someone who is clearly dead and if there is doubt that death has occurred, will treat the person as alive. Therefore, persons who are clearly dead should not be transported to a hospital, further overwhelming an already stressed medical care system and generating an unnecessary charge for families.

C. Each death requires an investigation by competent and trained personnel to ensure the cause of death is a result of a natural disease such as the influenza strain versus death by other mechanisms (e.g. fall, homicide, abuse, etc.)

D. Funeral directors working with religious leaders are the only service providers that offer final disposition and memorial services for the families by providing a burial or cremation with a ceremony.



Foreword: Commentaries on the Need for Guidelines for Death Investigation

Commentary

Jeanne M. Adkins
Representative
State Legislature, Colorado

Few things in our democracy are as important as ensuring that citizens have confidence in their institutions in a crisis. For many individuals the death of a loved one is just such a crisis. Ensuring that the proper steps and procedures are taken at the scene of that death to reassure family members that the death was a natural one, a suicide, or a homicide is a key element in maintaining citizen confidence in local officials.

E. Large numbers of deaths will backlog the entire death management system in the state including police investigators, hospital morgues, funeral homes, vital statistics offices, cemeteries, crematories, and the Medical Examiner. The entire process of managing the fatalities may take months to years to completely resolve.

B. Myths surrounding fatality management

1. **Myth** 1: **It is best to limit information to the public on the magnitude of the tragedy.**

   Reality: Restricting the public to information during a disaster creates a lack of confidence and distrust by the population in our government.

2. **Myth** 2: **Because a Pandemic event may also cause a mass fatality event, the Office of the Chief Medical Examiner is in charge of all the dead bodies and the localities do not have a role in human remain management.**

   Reality: The OCME does not have jurisdictional authority over naturally occurring disease deaths. Physicians are required to sign death certificates for their patients they treated. All licensed physicians in Virginia can sign death certificates for their patients who die of naturally occurring diseases and there is no requirement for the OCME to assume jurisdiction over the remains. The most efficient plan to manage the deaths is to keep the remains available locally to the physicians, families and the funeral service personnel who do manage human remains.

Table #1: Resources in the Commonwealth of Virginia in comparison with the resources in the Virginia Office of the Chief Medical Examiner.

Skill Set	Total # In Virginia	Total # On OCME staff
Doctors of Medicine and Surgery	18,028	13
Interns and Residents	1,927	3
Funeral Establishments	507	0
Funeral Service Providers **	1214	2
Funeral Service Interns	173	0
Crematories	75	0
Embalmers **	6	0

** Funeral Service Providers are embalmers with expanded capabilities to operate Funeral Homes. Data from Division of Health Professions, VDH, on October 18, 2006.

3. **Myth** 3: **The dead bodies of persons who die from natural disease outbreaks will pose the threat of additional disease causing epidemics.**

   Reality: According to the World Health Organization "there is a minimal risk for infection from dead bodies. In a document published in 2002, WHO established that: 'Dead or decayed human bodies do not generally create a serious health hazard, unless they are polluting sources of drinking-water with faecal matter, or are infected with plague

or typhus, in which case they may be infested with the fleas or lice that spread these diseases." (Ref 2)

4. **Myth** 4: **The fastest way to dispose of bodies and avoid the spread of disease is through mass graves or cremations. This can create a sense of relief among survivors.**

   Reality: The risk of disease from human remains is low and should not be used as a reason for mass graves. Mass graves do not allow individual family members to grieve and perform the religious or final acts for their loved ones as individual, private ceremonies. Cremations may violate certain ethnic or religious practices resulting in increased anguish and anger for the survivors. (Ref 3)

5. **Myth** 5: **It is impossible to identify a large number of bodies after a tragedy.**

   Reality: With the advancements in forensic procedures such as fingerprinting and DNA technology, identification of human remains has become much more precise. Visual identification and comparison can and have been utilized in the "normal" death cases, however, there are circumstances where scientifically based identification methods must be applied such as fingerprints, dental, medical implants, etc. Law Enforcement and Medical Examiner staffs can apply forensic studies on individual identification cases when needed. The complications in forensic studies lie in the fact that ante mortem records and samples are required for comparisons.

6. **Myth** 6: **Eliminating the requirements to complete and certify death certificates for disaster victims will speed up the healing process for the victims' families.**

   Reality: These documents are required to collect insurance, settle estates, award guardianship of minors and ownership of property, re-marriage, as well as many other legal issues that will benefit survivors. Failure to properly document and certify an individual's death will cause severe hardships on the surviving family members.

7. **Myth** 7: **The Office of the Chief Medical Examiner runs and operates the Virginia Funeral Directors Association, the crematories and cemeteries in the Commonwealth**.

   Reality: The VFDA and other human remains management companies are privately owned and operated.

8. **Myth** 8: T**he OCME mandates to families how they must dispose of all human remains following a disaster.**

   Reality: The authority and directions of any next of kin shall govern the disposal of the body (VA § 54.1-2807). However, the [Health]

Commissioner, in consultation with the Governor, shall have the authority to determine if human remains are hazardous to the public health. If the Commissioner determines that such remains are hazardous, the Commonwealth, with direction from the Commissioner, shall be charged with the safe handling, identification, and disposition of the remains, and shall erect a memorial, as appropriate, at any disposition site. (§32.1-288.1. Determination of hazardous human remains). For the purposes of this section, "hazardous human remains" means those remains contaminated with an infectious, radiologic, chemical or other dangerous agent. It is not anticipated that an influenza strain will meet the criteria of "hazardous" because there has never been an influenza stain which has in the past. Diseases that may present a hazard are the viral hemorrhagic fevers or smallpox. However, since we do not know what will cause a pandemic, normal precautions should always be followed.

9. **Myth** 9: **During a known pandemic influenza (PI) event, all deaths can be assumed to be from the PI disease process and no medico-legal death investigations are necessary.**

Reality: During a PI event, communities will experience cases where their citizens die from accidents, suicides, homicides, and sudden unexplained deaths which are NOT related to the PI event. Basic investigations into each death by community resources are necessary to differentiate between deaths from PI verses other activity (violence, other disease related, suicide, etc.)

10. **Myth** 10: **All deaths occur in hospitals**.

Reality: Data collected from Virginia Vital Records show fifty-five percent of the deaths in Virginia are outside of medical treatment facilities. Local police, fire and/or EMS are normally involved in each of these deaths to verify that death has actually occurred and to ensure the death is from a natural disease and not a result of suspicious or violent activity or in other words a Medical Examiner's case.

11. **Myth** 11: **HIPAA regulations prevent the Red Cross, medical staff and institutions from releasing information to the public, police, funeral directors and other governmental agencies even during disasters.**

Reality: Under the exceptions portion of the HIPAA regulations, the following paragraphs are copied verbatim: **45 CFR Parts 160, 162, and 164**

a. Coroners and medical examiners. A covered entity may disclose protected health information to a coroner or medical examiner for the purpose of identifying a deceased person, determining a cause of death, or other duties as authorized by law. A covered entity that also performs the duties of a coroner or medical examiner may use protected health

information for the purposes described in this paragraph. US 45 CFR §164.512 (g)(1)

b. Funeral directors. A covered entity may disclose protected health information to funeral directors, consistent with applicable law, as necessary to carry out their duties with respect to the decedent. If necessary for funeral directors to carry out their duties, the covered entity may disclose the protected health information prior to, and in reasonable anticipation of, the individual's death. US 45 CFR §164.512 (g)(2)

Following Hurricane Katrina, CDC and the U.S. Public Health Service conceded that law enforcement officials may also receive patient's demographic data for the purposes of solving missing persons reports in a disaster. US 45 CFR §164.512 (f)(2)

1.3 The Normal Death Management Practice

In order to identify planning needs for the management of mass fatalities during a pandemic, it is important to examine each step in the management of human remains under normal circumstances and then to identify what the limiting factors will be when the number of dead increases over a short period of time. The following table identifies the usual steps. Possible solutions or planning requirements are discussed in further detail in the sections that follow this table.

Table 1. Mortuary affairs system planning guide.

Steps	Requirements	Limiting Factors	Possible Solutions & Expediting Steps
Death Reporting / Missing Persons	✓**If death occurs in the home/business/community then a call in system needs to be established.** ✓ Citizens call local 911 to request a check on the welfare call for others ✓ **911 or other system needs to be identified as the lead to perform this task.**	✓**Availability of people able to do this task normally 911 operators** ✓**Availability of communications equipment to receive and manage large volumes of calls/inquires.** ✓**Availability of trained "investigators" to check into the circumstances of each report and to verify death is natural or other.**	✓**Provide public education about the call centers, what information to have available when they call, and what to expect from authorities when a death or missing persons report is made.** ✓**Consider planning an on call system 24/7 specifically for this task to free up operators for 911 calls on the living.**
Search for Remains	✓**If death occurs in the home/business then law enforcement will need to be contacted.** ✓**Person legally authorized to perform this task.**	✓**Law enforcement officers' availability.**	✓**Consider deputization and training (through the investigations units of law enforcement) of people whose sole responsibility is to search for the dead and report their findings.** ✓**Consider having community attorneys involved in the legal issues training for the groups identified**.
Recovering Remains	✓**Personnel trained in recovery operations and the documentation required to be collected at the "scene".**	✓**Availability of trained people to perform this task.** ✓**Availability of transportation assets.** ✓**Availability of interim storage facility.**	✓**Consider training volunteers (e.g. MRC) ahead of time.** ✓**Consider refrigerated warehouses or other cold storage as an interim facility until remains can be transferred to the**

	✓**Personal protection equipment such as coveralls, gloves and surgical masks.** ✓**Equipment such as stretchers and human remains pouches.**		**family's funeral service provider for final disposition.**
Death Certified	✓**Person legally authorized to perform this task.** ✓**If a death due to a natural disease and decedent has a physician, physician notified of death.** ✓**If trauma, poisoning, homicide, suicide, etc., Medical Examiner case.**	✓**The lack of availability or willingness of primary treating physicians to certify deaths for their patients.** ✓The lack of willingness to pay for a certification of death as imposed by some of Virginia's physicians.	✓**When possible, arrange for "batch" processing of death certificates for medical facilities and treating physicians.** ✓**Induce fines equal to the Local Medical Examiner's fees for those treating physicians who refuse to sign for their patients or charge a family (funeral home) for such services.**
Decedent Transportation to the morgues	✓**In hospital: trained staff and stretcher.** ✓**Outside hospital: informed person(s), stretcher and vehicle suitable for this purpose.**	✓**Availability of human and physical resources.** ✓**Existing workload of local funeral directors and transport staff.** ✓**Virginia's requirement to be registered with the Commissioner of Health pursuant to § 32.1-111.6. Ref: VA § 54.1 – 2819 Registration of Surface transportation and removal services.**	✓**In hospital: consider training additional staff working within the facility.** ✓**Consider keeping old stretchers in storage instead of discarding** ✓**Look for alternate suppliers of equipment that could be used as stretchers in an emergency e.g., trolley manufacturers.** ✓**Eliminate permit requirements for the PI event.** ✓**Outside hospital: provide public education or specific instructions through a toll-free phone service on where to take remains and other MA information.**
Transportation	✓**To cold storage, Mortuary Affairs holding location and/ or burial Site.** ✓**From hospitals to morgues, funeral homes or other locations.** ✓**Suitable covered refrigerated vehicle and driver.**	✓**Availability of human and physical resources.** ✓**Existing workload of local funeral directors and transport staff.** ✓**Virginia's requirement to have a transport certificate to transport dead bodies over the roadway.**	✓**Identify alternative vehicles that could be used for this purpose.** ✓**Identify ways to remove or completely cover (with a cover that won't come off) company markings of vehicles used for MA operations.** ✓**Consider use of volunteer drivers.** ✓**Consider setting up a pickup and delivery service for all the hospitals with set times, operating 24/7.** ✓**Consider finding resources to assist funeral homes in transporting remains so they can concentrate on remains preparations for the families.**
Cold storage	✓**Suitable facility that can be maintained ideally at 34 to 37 degrees F.**	✓**Availability of facilities and demand for like resources from multiple localities.** ✓**Capacity of such facilities.** ✓**Inability to utilize food storage or preparation facilities after the event.**	✓**Identify and plan for possible temporary cold storage sites and/or equipment close to where the body originated for the convenience of identification, family and funeral home.**
Autopsy *if required or requested*	✓**Person qualified to perform autopsy and suitable facility with equipment.**	✓**Availability of human and physical resources.** ✓**May be required in some circumstances.**	✓**Ensure that physicians and families are aware that an autopsy is not required for confirmation of influenza as cause of death when the outbreak is identified.**
Funeral service	✓**Appropriate location(s), casket (if not cremated).** ✓**Funeral director availability.** ✓**Clergy availability.** ✓**Cultural leaders availability.**	✓**Availability of caskets.** ✓**Availability of location for service and visitation.**	✓**Contact suppliers to determine lead time for casket manufacturing and discuss possibilities for rotating 6 month inventory.** ✓**Consult with the VFDA to determine surge capacity and possibly the need for additional sites (use of religious facilities, cultural centers etc.)**

Body Preparation	✓**Person(s) trained and licensed to perform this task.**	✓**Supply of human and material resources.** ✓**Supply of human remains pouches.** ✓**If death occurs in the home: the availability of these requirements.**	✓**Consider developing a rotating 6 month inventory of body bags and other supplies, given their shelf life.** ✓**Consider training or expanding the role of current staff to include this task.** ✓**Provide public education on the funeral service choices during a pandemic.**
Cremation	✓**Suitable vehicle of transportation from morgue to crematorium.** ✓**Availability of cremation service.** ✓**A cremation certificate issued by the Virginia Medical Examiner's Office.**	✓**Capacity of Crematorium and speed of process.** ✓**Availability of local medical examiner's to issue cremation or burial at sea certificate.**	✓**Identify alternate vehicles to be used for mass transport.** ✓**Examine capacity of crematoriums within the jurisdiction.** ✓**Discuss and plan for appropriate storage options if the crematoriums are backlogged.** ✓**Discuss and plan expedited cremation certificate completion processes.**
Embalming	✓**Suitable vehicle for transportation from morgue.** ✓**Trained person to perform.** ✓**Embalming Equipment and supplies.** ✓**Suitable location.**	✓**Availability of human and physical resources.** ✓**Capacity of facility and speed of process.**	✓**Consult with service provided regarding the availability of supplies and potential need to stockpile or develop a rotating 6 month inventory of essential equipment/supplies.** ✓**Discuss capacity and potential alternate sources of human resources to perform this task such as retired workers or students in training programs.** ✓**Consider "recruiting" workers that would be willing to provide this service in an emergency.**
Temporary storage	✓**Access to and space in a temporary vault.** ✓**Use of refrigerated warehouses, or other cold storage facilities.**	✓**Temporary vault capacity and Accessibility.**	✓**Expand capacity by increasing temporary vault sites.**
Burial	✓**Grave digger and equipment.** ✓**Space at cemetery.**	✓**Availability of grave diggers and cemetery space.**	✓**Identify sources of supplementary workers.** ✓**Identify sources of equipment such as backhoes and coffin lowering machinery.** ✓**Identify alternate sites for cemeteries or ways to expand cemeteries.**
Temporary Interment (if authorized by the Governor)	✓**Person to authorize temporary interment.** ✓**Location for temporary interment.** ✓**Grave diggers and equipment.**	✓**Availability of grave diggers and temporary interment space.** ✓**Availability of funeral directors, clergy, and cultural leaders for guidance and community acceptance.** ✓**Specific criteria as to when authorization may occur and procedures to follow prior to the internment.** ✓**Availability of resources after the event to disinter and to place remains into family plots.**	✓**Identify locations that will be suitable for temporary interment space.** ✓**Consider using the global positioning system for individual remains location.**
Behavioral Health	✓**Prepare public and responders for mass fatality possibilities prior to pandemic** ✓**Assist responders and other MA workers during pandemic and in post pandemic periods**	✓**The pandemic will virtually affect the entire nation. A shortage of mental health people will complicate the ability to assist people.** ✓**Many people will be doing MA tasks that they are mentally unprepared for and will require assistance.**	✓**Train first responders and some Citizen Corps people in crisis intervention techniques to assist MA teams during the pandemic.** ✓**Set up clinics to assist the public separate from the MA workers and first responders.**
Event and Community	✓**Persons to authorize reinterment.** ✓**Grave digger and**	✓**Availability of funeral directors, clergy, and cultural leaders for guidance.**	✓**Consider that the public may want to erect a monument at the temporary interment site(s) after the pandemic is**

Recovery	**equipment.** **✓Clergy and cultural leaders.**	**✓Existing code requirements to have a court order for the disinterment of human remains.** **✓Virginia's requirement to have a transport certificate to transport dead bodies over the roadway.**	**over.**

1.4. SCOPE

This document is intended to provide guidance for coordination in the Commonwealth of Virginia of response to mass fatalities as the result of an influenza pandemic or any other natural disease outbreak occurring which is not terrorist related or due to a laboratory accident.

1.5. Direction and Control

Incident Command- The Virginia Department of Health (VDH) through the Emergency Preparedness and Response Division (EP&R) and the localities will use the Incident Command System (ICS) as outlined in the National Incident Management System (NIMS) and directed by the National Response Plan (NRP) to work with other agencies and organizations in a coordinated manner based on the size and scope of the public health emergency**.**

Emergency Management- VDH EP&R as well as the localities will coordinate with the Virginia Emergency Operations Center (VEOC) and local jurisdiction EOCs.

2.0. GENERAL PLANNING ASSUMPTIONS

- *Communities should plan to be self-sufficient and should not rely on Federal assets.*
  - The pandemic will spread quickly and may impact regions throughout the United States virtually simultaneously.
  - Traditional sources of support, such as mutual aid, state or federal (e.g., Disaster Mortuary Operation Team (DMORT), Disaster Portable Mortuary Unit (DPMU)) assistance will be severely constrained or unavailable.
  - The Virginia Office of the Chief Medical Examiner will assist localities in the identification of the dead after a fingerprint check by law enforcement fails to produce identification and they will assume jurisdictional authority over those decedents who did not have a treating physician.

- *Funeral home capacity will be saturated quickly.*
  Communities need to work with key stakeholders to determine which agency(ies)/department(s) will be responsible for tracking and storing the deceased once this occurs.

- *Communities should plan to improvise where possible to compensate for scarce resources.*
  - Just-in-time inventory plus reduced industrial capacity due to illness and death will result in shortages especially of non-essential products

- *In order to reduce influenza transmission, usual funeral/memorial practices may need to be modified.*
  - Social distancing factors should be considered (e.g., use of internet-based services, limiting number of attendees)
  - Family members living in the same household as the deceased may be in quarantine

- *Due to the large number of deaths occurring over a short period of time, customary funeral/memorial practices may need to be adapted.*
  - Religious and cultural leaders should work with funeral service personnel to create strategies to manage the surge of deaths such as abbreviated funerals, rapid burial/cremation with memorial services postponed to the interpandemic phase, etc.

- *Up to 40% of the workforce may be absent due to illness, death, fear, or caring for those who are ill.*

- *There will be a demand for information from friends and family members – especially from those no longer living in the area.*
  - A centralized mechanism for keeping track of the deceased (and the hospitalized) should be developed.
  - A communications/ information strategy should be created.

2.1. Mass Fatality Planning Assumptions

2.1.1. Establishing Planning Teams

Most public health and healthcare agencies have limited experience dealing with mass fatalities. Two pandemic waves of six weeks each, using a five percent crude annual all causes death rate (similar to the influenza pandemic of 1918) will produce about 6,000 deaths per week per wave in Virginia. These death rates far exceed the normal 900 deaths per week seen under normal circumstances. This mortality rate will overwhelm the local mortuary affairs system in one or two weeks, especially if the state and its localities have not prepared or failed to prepare properly for the event. However, it is most convenient for families to identify decedents and make final arrangements, funeral homes to pick up, transport and provide services and obtain and file death certificate if remains are kept as close to home as possible.

In order to develop guidelines or adjust existing plans for a pandemic situation, localities need to identify a lead agency for the pandemic planning and response and ensure that the following groups are involved in local planning:

- The elected officials or community leadership
- The local jurisdiction's District attorney's office or legal counsel
- The Public Health Director, their planners, and vital records offices
- The Department of Emergency Management

- Representatives of the communities local funeral directors, cemetery owners, and cremation owners
- Representatives from Department of Finance
- Representatives from Department of Social Services
- Representatives from Department of Public Works
- Representatives from Department of Environmental Quality
- Representatives from local health care facilities
- Representatives from the local medical associations
- Representatives from Department of Transportation
- Representatives of local religious and ethnic groups
- Representatives of local law enforcement
- Representatives from local fire and EMS
- Owners of potential cold storage facilities which may be utilized for remains and their refrigeration or HVAC specialists

Technical assistance is available from the Virginia Office of the Chief Medical Examiner's District Offices and/or planners. The OCME has prepared a document for local management of multiple influenza fatalities which can be found at the OCME web page: http://www.vdh.virginia.gov/medexam/

2.1.2. Prophylaxis and/or Vaccinations

If the medical community is receiving prophylaxis and/or vaccinations, then MAS personnel should be included along with other first responders as a priority group since they will be having direct contact with bodies and bodily fluids but more importantly with the surviving family members of individuals known to have has the disease. At this point the body fluids would be considered bloodborne pathogens and appropriate personal protection equipment must be utilized. By not providing prophylaxis to the MAS community workers they may not respond when needed (as seen in the initial AIDS/HIV outbreak in the 1980's and the SARS outbreak in 2004) and for those that do, they may become ill and add to the number of incapacitated or deceased.

2.1.3 Reviewing Existing Local Plans

Existing local disaster plans may include provisions for mass fatalities but should be reviewed and tested regularly to determine if these plans are appropriate. The plans should acknowledge the relatively long period of increased demand characteristic of a pandemic, as seen in the response period required for most disaster plans where deaths fall under the jurisdiction of the state OCME (e.g. Operations for the 9/11 attack on New York continue 5 years later). There are currently no national plans to recommend mass burials or mass cremations. This would only be considered under the most extreme circumstances. The use of the term *mass burial* infers that the remains will be interred and never be disinterred and identified. Therefore, the term mass burial should never be used when describing final disposition operations.

2.1.4 Location of Death, Cause of Death and Certification of Death Considerations

It is anticipated that most fatal influenza cases will seek medical services prior to death. However, whether or not people choose to seek medical services will partly depend on the lethality and the speed at which the pandemic strain kills. Under normal conditions,

the majority of deaths (55.2 percent) occur in the place of residence, including nursing homes and other long-term care facilities (of the 56,010 deaths in 2004, only 44.8 percent occurred in hospitals). Hospitals, nursing homes and other institutions (including non-traditional sites) must plan for more rapid processing of human remains. These institutions should work with local pandemic planners and the Virginia Department of Health Emergency Preparedness and Response division to ensure that they have access to the additional supplies (e.g., human remains pouches) and can expedite the steps, including the completion of required documents, necessary for efficient human remains management during a pandemic.

Planning should also include a review of death documentation requirements and regulatory requirements that may affect the timely management of corpses. The Virginia Department of Health, Division of Vital Records, the OCME and the Virginia regulatory agencies for medicine and funeral services need to agree upon any procedures which will be modified during a pandemic event.

Consideration for handling remains other than death due to pandemic influenza must be taken into account. There will still be other diseases, traffic accidents, suicides, homicides and natural cause deaths. During the 1918 influenza pandemic only 25% of the deaths were reported as influenza. This is suspected to be a low percentage as in many cases influenza may have brought on the death of a person who was ill due to another disease or injury. There may be an increase in suicides and euthanasia by family members as well as well as elder abuse and child abuse cases during the event.
For those cases where the state medical examiner must be engaged, the location of death determines which local medical examiner or district OCME office requires notification. Local police homicide or forensic divisions and Hospital Emergency Rooms normally keep a current list of on-call Medical Examiners.

2.1.5 Cold Storage Considerations

In order to manage the increase in natural death fatalities, some counties (regions) will find it necessary to establish temporary cold storage facilities. Plans should be based on the population of the locality(ies) capacity of existing facilities compared to the projected demand for each municipality. Local planners should make note of all available facilities including those owned by religious organizations. Access to these resources should be discussed with these groups as part of the planning process during the interpandemic period. In the event that local funeral directors are unable to handle the increased numbers of corpses and funerals, it will be the responsibility of county MAS planning teams and their EOC to make appropriate arrangements. Individual counties or regions should work with local funeral directors to plan for alternative arrangements. The OCME web page shows tables of the estimated increase in the number of deaths as calculated for three attack rates of pandemic flu for each locality and local health planning district and by Virginia Department of Emergency Management (VDEM) Regions. http://www.vdh.virginia.gov/medexam/

2.1.6 Decedent Identification Requirements

Identification parameters will have to be established. Localities or agencies who have custody of the body are responsible for the identification of the dead and the notification of the death to the Next of Kin (VA §32.1 – 283 B). Normally law enforcement and/or hospitals perform this function. In some cases, it will be impossible to utilize the conventional means to identify the dead because of the lack of identification on the body or reliable witnesses, decomposition, or mitigating circumstances. Local police departments should attempt to find fingerprint files on the unidentified persons first in the AFIS system (the OCME does not have access to this data base) and if unsuccessful, they can request identification support from the OCME. Localities will be required to assist in the antemortem data collections including the sharing of missing persons reports and the retrieval of medical and dental records during the identification process.

Foreign, undocumented nationals and homeless individuals will require much greater effort. The Virginia Medical Examiners Office may have to develop a method of separating those that will pose significant identification problems requiring a longer time to identify. These remains may have to be put into temporary storage or be temporarily interred awaiting identification at a later date. The fact that some remains will never be identified must be planned for and information and DNA collected for possible identification at a later date.

2.1.7. Private Partners Concerns

Funeral homes, crematories, cemeteries and transporters will be overwhelmed, probably within the first few weeks. Very quickly there may be a shortage of human remains pouches, personnel and vehicles to handle the dead and Funeral homes will run out of supplies. For example, there will be a shortage of;

- Caskets.
- Litters
- Transportation vehicles
- Embalming supplies and equipment.
- Headstones.
- Vaults.
- Cremation is a slow process and a backlog of remains awaiting cremation will likely require temporary storage until they can be cremated.
- Urns.

3.0 CONCEPT OF OPERATIONS

3.1. GENERAL DEATH SURVEILLANCE FOR AN EMERGING PANDEMIC OR NATURAL DISEASE OUTBREAK

To determine if avian influenza, pandemic flu, emerging infection or bioterror agent has arrived in Virginia, the OCME will take jurisdiction in a **limited number** of cases to establish the index case in the following situations:

- A death that meets criteria for an emerging infection and needs to be confirmed by culture of blood and tissues. This includes the first "native" cases of pandemic flu in Virginia.
- Illness and death in a poultry worker where illness is suspected as flu to confirm flu has been contracted from poultry.
- Any flu-like illness resulting in the death of a family member/companion of a poultry worker to prove human to human transmission. The worker should also be tested if not done so previously.
- A death of a traveler from elsewhere suspicious for flu or a citizen from VA who has traveled elsewhere and has been at risk (e.g., China)
- The first diagnosed case in a hospital that needs documentation of virus in tissue.

The Medical Examiner will assume jurisdiction over all of the deaths described in these specific scenarios above based upon the Code of Virginia § 32.1-277 to 32.1-288. Remains should not be released to the NOK if the death resulted from one of the scenarios listed. The Medical Examiner will release remains to the NOK after investigation and examination.

Otherwise, all homicides, accidents, suicides, violent and sudden and unexpected or suspicious deaths are required to be reported as usual to the local Medical Examiner who represents the OCME in that locality.

3.2 The Office of the Chief Medical Examiner's Role in the Established Natural Disease Outbreak or Pandemic Event

Additionally as a pandemic develops and becomes established within the Commonwealth, the OCME takes jurisdiction over the following deaths:

- Cases in which there is no attending physician, e.g. the decedent had no physician or medical treatment facility which treated them or the decedent's physician is licensed out of state.
- The identity of the decedent is unknown and the normal investigative procedures completed by hospital, social services, police or law enforcement agencies, including fingerprinting, have not positively identified the deceased.
- Coordinating confirmation of identity with local police departments
- The death is sudden and unexplained (e.g. does not meet the normal flu case definition).
- Death of an inmate or person in correctional custody.
- Assisting the interest of the Commonwealth, when an individual who was sequestered into a private residence or public facility through the Isolation or Quarantine procedures and dies outside of a medical treatment facility. (This does not apply if an entire community is impacted by the public health order.)
- Normal Medical Examiner cases as defined by Virginia Code

If a biologic agent is introduced as an instrument of terror, as opposed to a disease occurring naturally in the population, the deaths will come under the jurisdiction of the OCME as homicides due to a "biological bullet".

3.3. Personal Protective Equipment and Personal Precautions

3.3.1. Removal of Decedent from Health Care Facility/Home/ Other Institutions

- Recommended personal protective equipment
  - NIOSH-certified N95 mask if removing human remains immediately after death
  - Fluid-resistant long-sleeved gown
  - Gloves
  - Eye protection if splashing is expected
  - Place human remains in an impermeable human remains bag prior to transfer to funeral home, holding facility, or the OCME. Be sure to clean the outside of the body bag with a disinfectant (e.g., 70% alcohol).

Note: Persons who had contact with a deceased who died of an infectious disease should be considered infectious as well until otherwise tested. Those persons recovering remains or conducting death investigations who have contact with the survivors should ensure self-protection practices similar to the PPE recommendations for the health care community.

3.3.2. AUTOPSIES

Most deaths in an influenza pandemic would not require autopsies since autopsies are not indicated for the confirmation of influenza as the cause of death. However, for the purpose of public health surveillance (e.g., confirmation of the first cases at the start of the pandemic), respiratory tract specimens or lung tissue for culture or direct antigen testing could be collected post-mortem. Serological testing is not optimal but could be performed if 8-10 ml of blood can be collected from a subclavian puncture post-mortem. Permission will be required from NOK if a private or public hospital performs this function. The OCME does not require permission from the NOK if the case meets the criteria as a Medical Examiner's case under public health laws.

Autopsy Risks - Biosafety is critical for autopsy personnel who might handle human remains contaminated with a pandemic influenza virus. Infections can be transmitted at autopsies by percutaneous inoculation (i.e., injury), splashes to unprotected mucosa, and inhalation of infectious aerosols.

As with any contact involving broken skin or body fluids when caring for live patients, certain precautions must be applied to all contact with human remains, regardless of known or suspected infectivity. Even if a pathogen of concern has been ruled out, other unsuspected agents might be present. Thus, all human autopsies must be performed in an appropriate autopsy room with adequate air exchange by personnel wearing appropriate personal protective equipment (PPE). All autopsy facilities should have written biosafety policies and procedures; autopsy personnel should receive training in these policies and procedures, and the annual occurrence of training should be documented. Virginia OCME autopsy suites are BioSafety Level 2 in Virginia.

Standard Precautions are the combination of PPE and procedures used to reduce transmission of all pathogens from moist body substances to personnel or patients. These precautions are driven by the nature of an interaction (e.g., possibility of splashing or potential of soiling garments) rather than the nature of a pathogen. In addition, transmission-based precautions are applied for known or suspected pathogens. Precautions include the following:

- *airborne precautions* --- used for pathogens that remain suspended in the air in the form of droplet nuclei that can transmit infection if inhaled;
- *droplet precautions* --- used for pathogens that are transmitted by large droplets traveling 3--6 feet (e.g., from sneezes or coughs) and are no longer transmitted after they fall to the ground; and
- *contact precautions* --- used for pathogens that might be transmitted by contamination of environmental surfaces and equipment.

All autopsies involve exposure to blood, a risk of being splashed or splattered, and a risk of percutaneous injury. The propensity of postmortem procedures to cause gross soiling of the immediate environment also requires use of effective containment strategies. All autopsies generate aerosols. Furthermore, postmortem procedures that require using devices (e.g., oscillating saws) that generate fine aerosols can create airborne particles that contain infectious pathogens not normally transmitted by the airborne route.

Personal Protection Equipment- For autopsies, Standard Precautions can be summarized as using a surgical scrub suit, surgical cap, impervious gown or apron with full sleeve coverage, a form of eye protection (e.g., goggles or face shield), shoe covers, and double surgical gloves with an interposed layer of cut-proof synthetic mesh). Surgical masks protect the nose and mouth from splashes of body fluids (i.e., droplets >5 μm). They do not provide protection from airborne pathogens. Because of the fine aerosols generated at autopsy, autopsy workers should wear N-95 respirators, at a minimum, for all autopsies, regardless of suspected or known pathogens. However, because of the efficient generation of high concentration aerosols by mechanical devices in the autopsy setting, powered air-purifying respirators (PAPRs) equipped with N-95 or P100 high-efficiency particulate air (HEPA) filters should be considered. Autopsy personnel who cannot wear N-95 respirators because of facial hair or other fit limitations should wear PAPRs.

Waste Handling- Liquid waste (e.g., body fluids) can be flushed or washed down ordinary sanitary drains without special procedures. Pretreatment of liquid waste is not required and might damage sewage treatment systems. If substantial volumes are expected, the local wastewater treatment personnel should be consulted in advance. Solid waste should be appropriately contained in biohazard or sharps containers and incinerated in a medical waste incinerator.

3.3.3. Funeral Precautions

Funeral Precautions Visitations could be a concern in terms of influenza transmission amongst funeral attendees. It is the responsibility of Public Health to place restrictions on the type and size of public gatherings if this seems necessary to reduce the spread of

disease. This may apply to funerals and religious services. The Public Health should plan in advance for how such restrictions would be enacted, and enforced, and for consistency and equitability of the application of any bans. The OCME recommends immediate family members at grave site or the new concept being seen, the virtual funeral service a web based program for the memorial services.

Family members should take some precautions when viewing their loved ones. The following recommendations may reduce the potential risk of virus transmission from a decedent to a living individual:

Family Members

- Family members may view the human remains. If individual died while infectious, family members should wear gloves, gowns, and perform hand hygiene.
- Before touching the human remains, the area should be disinfected (e.g., 70% alcohol)
  - Special attention should be given to funerals, where mourners of the decedent, potentially having acquired the disease from the decedent or in the community, are now congregating potentially allowing for transmission of pandemic influenza
- Alcohol-based sanitizers and tissues should be made available
- Funeral homes should consider environmental cleaning
- Other strategies should be considered during the funeral process (e.g., videoconferences)

3.4. PREPARATIONS FOR FUNERAL HOMES, CEMETERIES, AND CREMATORIA

In an influenza pandemic, each individual funeral home could expect to have to handle about six months work within a 6- to 8-week period. That may not be a problem in some communities, but funeral homes in larger cities may not be able to manage the increased demand. Individual funeral homes should be encouraged to make specific plans during the interpandemic period regarding the need for additional human resources during a pandemic situation. For example, volunteers from local service clubs or churches or even contractors with heavy equipment may be able to take on tasks such as digging graves, under the direction of current staff. In addition, many localities have received grant funding for citizen response groups such as CERT teams or Auxiliary police teams. Localities should conduct a gap analysis which includes the private mortuary sector and determine if their funded volunteer groups could fill gaps identified in the funeral service industry. Crematoriums will also need to look at the surge capacity within their facilities. Most crematoriums can handle about one body every four hours and could probably run 24 hours to manage the increased demand.

3.5 ESTABLISHING A MORTUARY AFFAIRS BRANCH IN THE INCIDENT RESPONSE PLAN

Establish a Mortuary Affairs Branch into your community's incident command structure for a pandemic event. The Mortuary Affairs Branch would normally fall under the Operation Section Chief in the Incident Command Structure.

The following organizational charts are suggested for consideration by localities:

Chart 1. Incident Command Structure with Fatality Management Included.

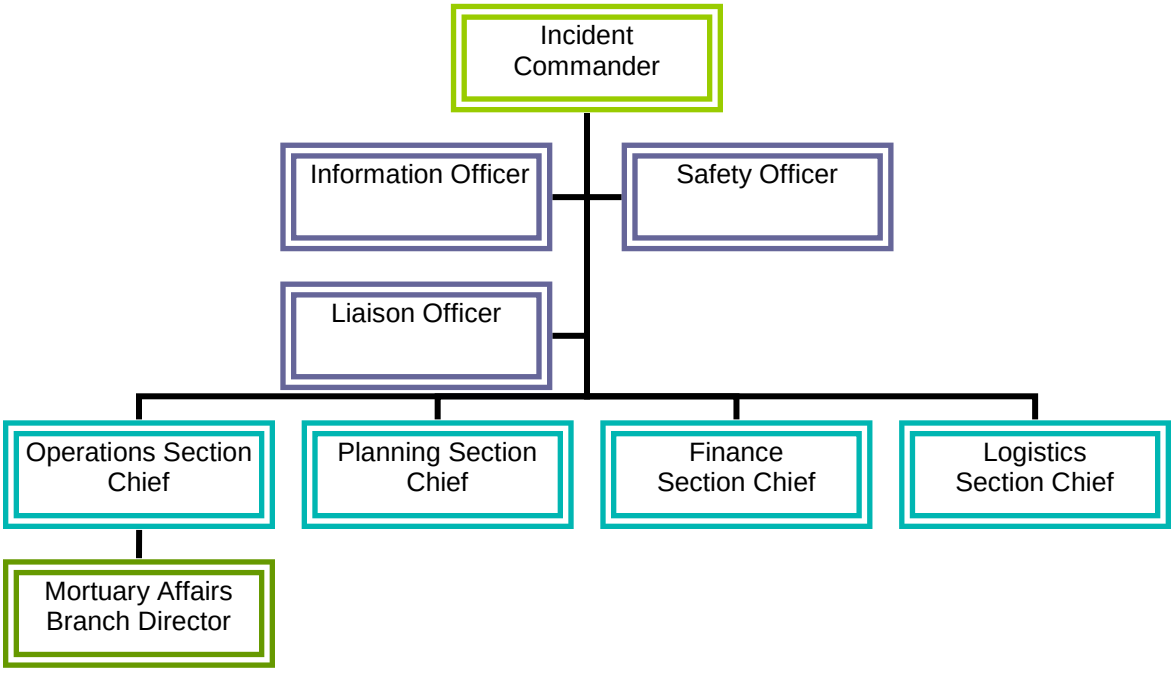
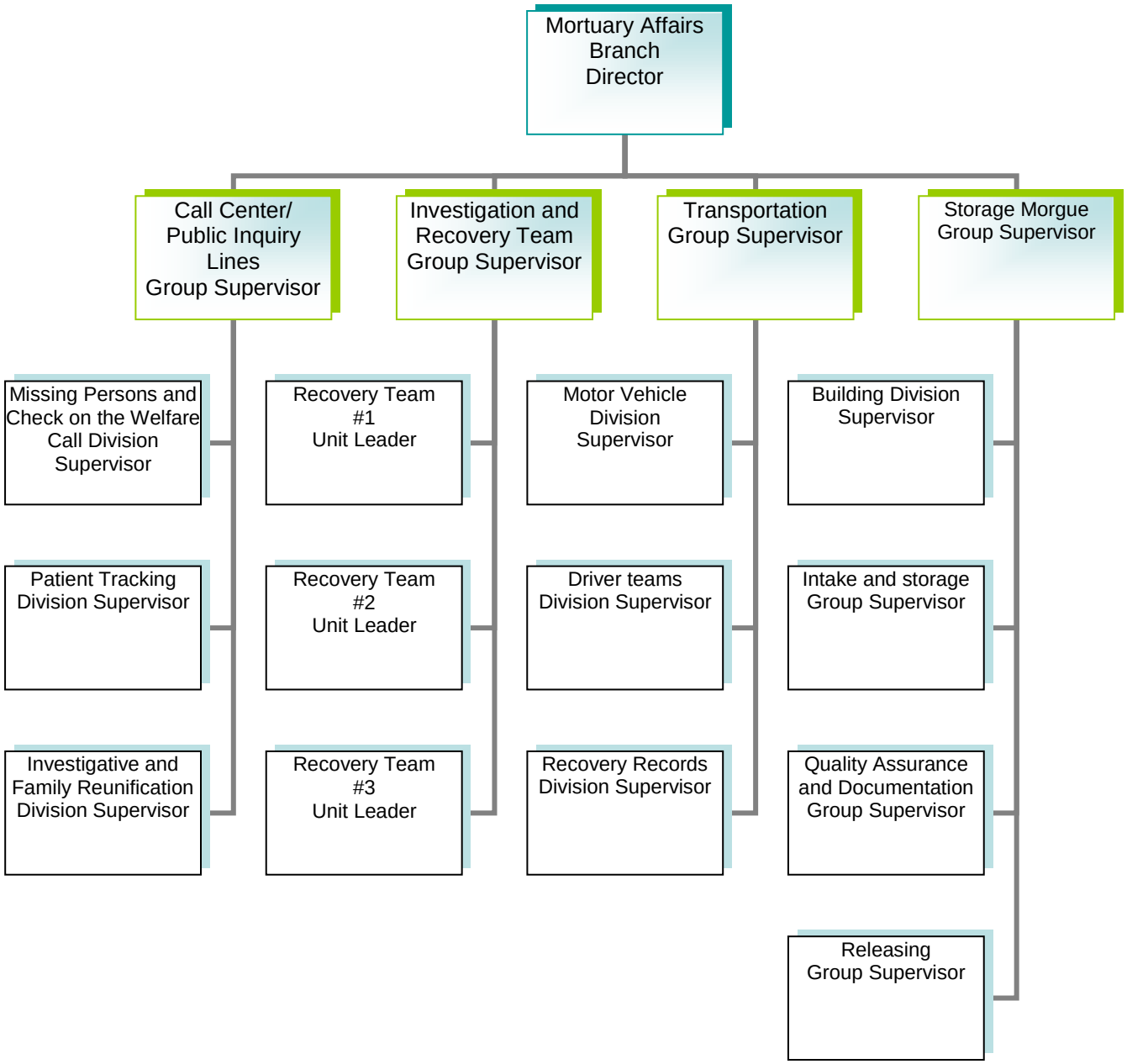


Chart 2. Suggested Mortuary Affairs Branch Structure in a Natural Disease event within ICS



3.5.1 Duties to be preformed

Localities or regions should identify the functional tasks required for the circumstances and identify the agencies or personnel required to run the sections or branches.

3.5.1.1 **Mortuary Affairs Branch Director:** Responsible for managing all aspects of the Mortuary Affairs Branch mission from the time of activation through the return to normal operations including all resources (e.g., personnel and equipment). Reports directly to the Operations Section Chief.

A. Description of Duties

1. Manages and ensures proper and timely completion of the overall MA function of identification and mortuary services for deceased victims. Interacts with the Lead Law Enforcement Agency and Planning Section Chief.
2. Ensures that supplies and support necessary to accomplish MA mission objectives and activities are identified, coordinated with the Incident Command System and made known to the Emergency Operations Center at both the local and state level.
3. Supervises subordinates.
4. Interacts with the Lead Law Enforcement Agency and the private entities of the funeral services in the community.
5. Ensures all medical examiner cases encountered are reported to the local and/or district Office of the Chief Medical Examiner.
6. Ensures the completion of all required reports and maintenance of records.
7. Will coordinate with the PIO for the incident concerning all press releases about the deceased.
8. Participates in the after action review.

3.5.1.2 **Call Center/Public Inquiry Lines Group Supervisor:** Responsible for the establishment of call-in centers for the reporting of the dead and inquires into the welfare of individuals.

A. Description of Duties

1. Reports to the Mortuary Affairs Branch Manager
2. Receives all reports for missing persons and death related information from citizens, hospitals, and other medical treatment facilities as well as vital records offices.
3. Ensures Investigation and Recovery Teams receive all reported scenes of death information
4. Ensures the completion of all required reports and maintenance of records especially all missing persons reports which are required to be maintained by law enforcement in accordance with VA § 15.2 -1722.

5. Collects all reports of patient admissions and transport for the purposes of clearing the official missing persons list and the reunification of family members.
6. Supports the investigative missing persons and family reunification supervisor with data, personnel and records maintenance.

B. Some recommendations to consider:

1. A separate line for missing persons and reports of deaths may be utilized to free 911 operators for live safety activities.
2. Police have the knowledge, skills and expertise to manage the missing persons units established. They also have a legal responsibility to take reports of missing children without delay in accordance with (VA § 15.2 - 1718) and to submit all reports to the Virginia Missing Children's Clearing House established by VA §52.31, and managed by Virginia State Police.
3. Police Chiefs and Sheriffs are required to maintain all records of missing persons in accordance with VA §15.2 – 1722.
4. Hospitals and other established in-patient medical treatment facilities should be encouraged to visualize patients official government identification cards before admission or treatment, and to report their patients by name and other data to the call center. By centralizing this function, hospitals could be assisted in reuniting families, and notifying the NOK of illness/death.

3.5.1.3 INVESTIGATION AND RECOVERY TEAM GROUP SUPERVISOR: Established for non-hospital/medical treatment facility deaths.

A. Description of Duties

1. Reports to the Mortuary Affairs Branch Manager
2. Receives all reports for death related information from Call Center.
3. Ensures dispatch of appropriate resources to reported scenes of death
4. Responsible for conducting scene investigations into the circumstances of death.
5. Responsible for notifying the NOK of death,
6. Responsible for collecting demographic data on the deceased, and reporting that data to the Investigative and family reunification unit.
7. Responsible for notifying and coordinating with primary care physicians for the completion of death certificates. by the same
8. Responsible for reporting all recovered human remains to the Call Center's Investigative and Family Re-unification Unit.
9. Recovers the remains from the death scene and coordinates transportation services to the appropriate location.
10. Responsible for ensuring each human remain and personal effects bad is tagged with a unique identifier or full name and demographic information

B. Recommended Staffing:

1. Investigation and Recovery Unit
2. 1 Search Team Leader
3. 2 Evidence Specialists (Photographers and scribes)
4. 4-Assistants to recover remains (one designated as Team Leader)
5. 1-Safety Officer Assistant

C. Physical Considerations Equipment

1. Radios or other communication equipment
2. Heavy Work Gloves (leather)
3. Latex or Nitrile gloves
4. PPE (level D) including eye protection (should meet ANSI 287.1)
5. Re-hydration supplies, drinking water and light food
6. Heavy boots (with steel toe/shank, water resistant)
7. Clip boards, pens, paper, and appropriate forms
8. Camera kits with film, batteries or battery chargers, memory cards as appropriate
9. GPS Unit
10. Laptop PC with windows and Microsoft Office Suite
11. Ty vex Suits
12. Toe Tags and permanent markers or VDH EMS triage tags with bar coded serial numbers

D. Areas of Concern:

1. For bodies found out in the open, there are no concerns for government agents entering public domain. However, entering of private homes or businesses pose legal issues which should be discussed with the legal department.

2. Even during a known and documented Pandemic, deaths must still be investigated by trained individuals to determine if death was caused by natural disease. (e.g. no violence, trauma, suspicious circumstances, etc.) This function is normally conducted by police agencies at the local level. Local police investigative staff should be included in the local planning process.

3. For bodies found in homes, businesses and other private property, a search must be done by an authorized agent, normally law enforcement. If the government, or a government authorized agent, enters such a facility, plans should be in place to ensure the property is secured or turned over to a legally authorized agent of the victim. Local locksmiths may be useful for entering and securing private property. It is recommended the locality's attorneys be involved in the planning process for recovery team policies.

4. Each remain should have an initial examination to ensure there are no apparent injuries on the deceased. If injuries are found, the police should be notified immediately (if not already present) and the scene should be protected from further disruption or intrusion.

5. Each decedent should have an individual case file (or investigative report as done by police) which is started in the "field" and retained by the local government. As part of the case file, field notes should be taken in all circumstances. The notes should allow for any agency to have enough information to allow for a re-construction of the circumstances and event in case the death becomes suspicious or questioned at a later date. At a minimum, the following information should be completed:

    - First, Middle, Last Name & Suffix
    - Sex, Race/Ethnicity, Color of Eyes, (Hair, Height, and Weight if unidentified)
    - Home Address, City, State, Zip Code, & Telephone #
    - Location of Death and Place Found (place of origination of the body before movement to the hospital or other facility)
    - Place of Employment and Employer's Address
    - Date of Birth, Social Security Number (or Driver's license number) & Age
    - Next-of-Kin (or Witness) Name, Contact # & Address
    - Name of primary care physician as indicated by family, witnesses, bills or insurance documents.
    - List of existing prescriptions found at the scene and the name of the physician who prescribed them.
    - Witness statements and all their contact information.
    - Names and contact information for investigators, drivers, or other "response" personnel for each case.
    - Complete list of personal effects (with photographic documentation if possible) all which accompany remains to a governmental morgue.

6. Hospital and/or medical treatment facility deaths.

    a. Decedents who die in medical treatment facilities will normally have a confirmed identification. However, since families and friends do share insurance company cards with each other, and since unknown individuals may come into a hospital, hospitals should ensure at least a government issued photographic identification confirmation process is in place before a death certificate is certified by a primary care physician.
    b. Treating physicians in the medical treatment facilities should sign the death certificates for their patients and release the death certificates with the remains to the family's funeral home with the body within 24 hours of death.

c. To ensure appropriate death certification occurs at medical treatment facilities, a position could be established for the sole purpose to ensure death certificates are completed and certified.

EXCEPT FROM VIRGINIA CODE
(VA § 32.1-263.) C. The medical certification shall be completed, signed and returned to the funeral director within 24 hours after death by the physician in charge of the patient's care for the illness or condition which resulted in death except when inquiry or investigation by a medical examiner is required by § 32.1-283 or § 32.1-285.1. In the absence of the physician or with his approval, the certificate may be completed and signed by an associate physician, the chief medical officer of the institution in which death occurred, or the physician who performed an autopsy upon the decedent, if such individual has access to the medical history of the case and death is due to natural causes.

3.5.1.4 TRANSPORTATION GROUP: Responsible for the resources and personnel required for the pick-up and transportation of human remains from places of death to the cold storage facilities or the Funeral Homes.

A. Description of Duties

1. Reports to the Mortuary Affairs Branch Manager
2. Acts on the requests from the Investigation and Recovery Team Director and/or the hospital morgue facilities.
3. Ensures dispatch of appropriate resources to provide respectful removal of human remains
4. Document all human remains and accompanying personal effects and Field paperwork.
5. Checks and logs each toe tag on all remains collected and items of personal effects.
6. Responsible for transport and delivery of remains, personal effects and documentation to the appropriate morgue.
7. Closely coordinates with the Logistics Branch to ensure adequate supplies are readily available.

B. Recommended Staffing

1. Transportation group supervisor
2. Three (3) teams of 3-Transportation Unit Specialists (one designated as Team Leader)
3. Transportation Dispatcher
4. Motor Vehicle Division Supervisor
5. Drivers

C. Physical Equipment
1. Radios or other communication equipment
2. Heavy Work Gloves (leather)
3. Latex or Nitrile gloves
4. PPE (level D) including eye protection (should meet ANSI 287.1)
5. Re-hydration supplies, drinking water and light food
6. Heavy boots (with steel toe/shank, water resistant)
7. Clip boards, pens, paper, and appropriate forms
8. Human Remains Pouches of various sizes (infant, child, adult adult X-Large)
9. Toe Tags or VDH EMS Triage Tags
10. Motor vehicles for remains transport (vans, station wagons, etc.)
11. Waterless hand sanitizer
12. Permanent Markers
13. "Church Carts" or Litters for body removal

D. Areas of Concern:

1. If the family of the deceased is available, they can identify which funeral home they wish to hire for their services. If possible, that funeral home or it's sub-contractor will provide transportation services from the place of death to the appropriate morgue facility.

2. If NOK is not available, or if they cannot decide on a funeral home, communities, usually through the police department, have contracts with licensed funeral directors or removal services to transport remains which the locality must move because of criminal or suspicious activities, or next of kin is not available. In a pandemic event, there is a greater chance that NOK will be difficult to find and contact because they too may have been affected.

3. Under normal circumstances, regulations for removal services are found in §54.1-2819. Registration of surface transportation and removal services.

4. In a pandemic event, funeral homes and transporters could be overwhelmed and may require augmentation from the local or regional government.

5. If vehicles are to be used for collecting remains certain guidelines should be observed:

- The vehicle shall have all markings removed if it is a commercial business.
- The vehicle shall be covered so the people or the press cannot see into the bed of the vehicle.

- Bodies shall not be stacked in the vehicle under any circumstances.
- The vehicle must be refrigerated. Air conditioning will not suffice.
- Loading and unloading of the vehicle shall be accomplished discretely. Tarps or other ways of blocking the view may be used. The top must also be covered to prevent observance from the air.
- The interior area used to store bodies should have a double plastic lining
- After use, or if the plastic lining is grossly contaminated and must be changed out, disposal should be in accordance with the Occupational Safety and Health Administration's Bloodborne Pathogens Standard (29 CFR 1910.1030).
- Shelving should not be wood, or materials that bodily fluids may be absorbed. Metal or plastic shelving that may be cleaned off is acceptable. A method of securing the body within the shelf should be required.

6. Persons coordinating transportation should set up a schedule with hospitals for remains transfer to the storage morgue. Schedules should be set up and operate on a 24 hour basis. State and Federal Department of Transportation (DOT) Requirements must be satisfied for the transportation of human remains.

7. Death certificates and transport permits will most likely be required for transportation across state lines and will require approval of receiving state(s). Transportation Across international lines (Canada and Mexico) may require State Department approval and the receiving nation's approval.

8. Quarantine measures may affect the movement of human remains. For example, can remains move into, through, or out of a quarantined area? If movement is prohibited then temporary storage must be developed. While a quarantine is designed to protect public health, plans must still be made for removing the dead.

3.5.1.5. Storage Morgue Team: Responsible for the set-up and management of the storage morgue for the locality or region. Receipts, stores, and releases human remains and their personal effects to the legal next of kin (or their funeral home) , or legally authorized person(s)/agency for final disposition.

A. Description of Duties

1. Reports to the Mortuary Affairs Branch director
2. Checks the documentation on remains, personal effects and accompanying paperwork to ensure all data is consistent for remains.
3. Maintains a complete log of all remains and personal effects being stored and released from the facility.

4. Documents all human remains and accompanying personal effects and documentation.
5. Checks and logs each toe tag on all remains collected and associated personal effects.
6. Receives and files the signed NOK's release of human remains and funeral home contract forms
7. Ensures each remain and each bag of personal effects are released with the funeral home or family signature. Maintain a file of all signed release documents.

B. Recommended Staffing

1. Storage Morgue Manager
2. 1- Refrigeration Specialists
3. 3-Facility Maintenance Team (with one facility manager)
4. 3-Admitting team and documentation specialists
5. 1-Releasing Supervisor
6. 6-Body Escorts

C. Equipment

1. Tables
2. Chairs
3. Laptops with windows and Window's Office Suite Software
4. Telephones
5. Fax Machines
6. Paper
7. Gloves
8. N95 Masks
9. Tyvex suits- various sizes
10. Human Remain Pouches in various sizes in case of damage to existing bags
11. Gurneys, church carts or litters to move remains
12. File cabinets
13. Log Books
14. Photocopier
15. Bar code label makers and readers

D. Planning Considerations:

1. Additional temporary cold storage facilities may be required during a pandemic for the storage of corpses prior to their transfer to funeral homes. Cold storage facilities require temperature and biohazard control, adequate water, lighting, rest facilities for staff, and office areas and should be in communication with patient tracking sites and the emergency operations center. A cold storage

facility must be maintained at 34 – 37^{o} F. However, corpses will begin to decompose in a few days when stored at this temperature.

2. If the legal NOK is not going to have the remains cremated, plans to expedite the embalming (if desired by the NOK) process should be developed since, in the case of a pandemic, bodies may have to be stored for an extended period of time. In counties where a timely burial is not possible due to frozen ground or lack of facilities, corpses may need to be stored for the duration of the pandemic wave (6 to 8 weeks).

3. The Virginia OCME recommends communities work together in a regional manner. This is especially true when identifying and acquiring refrigeration resources, as there will be high demand and few resources. Each region (or county) should make pre-arrangements for cold storage facilities based on local availability and requirements. The resource needs (e.g. human remains pouches) and supply management for cold storage facilities should also be addressed. The types of temporary cold storage to be considered may include refrigerated trucks, cold storage lockers or refrigerated warehouses. Refrigerated trucks can generally hold 25-30 bodies without additional shelving. To increase storage capacity, temporary wooden shelves can be constructed of sufficient strength to hold the bodies. Shelves should be constructed in such a way that allows for safe movement and removal of bodies (i.e., storage of bodies above waist height is not recommended but may be required (ensure enough staffing is available to avoid injuries). These shelves will be contaminated with biological material and will require special handling after the event. To reduce any liability for business losses, using trucks with markings of a supermarket chain or other companies should be avoided, as the use of such trucks for the storage of corpses may result in negative implications for business. If trucks with markings are used, the markings should be painted or covered over to avoid negative publicity for the business.

4. Using local businesses for the storage of human remains is not recommended and should only be considered as a last resort. The post-pandemic implications of storing human remains at these sites can be very serious, and may result in negative impacts on business with ensuing liabilities.

5. There should be no media, families, friends or other onlookers permitted on the temporary morgue site. Families should make arrangements with their funeral homes to conduct viewings of the remains at the home or medical facility of death, prior to removal, at the grave site or at the crematory. (If responders can take a facial photograph, when appropriate for viewing, and keep the photo in the case files, the photo could be utilized to meet families' needs of viewing or viewing for identification purposes.)

3.6. DEATH REGISTRATION

In Virginia, death registration is a process governed by its own set of laws, regulations, and administrative practices to register a death. Moreover, there is a legal distinction between the practices of pronouncing and certifying a death.

Funeral directors generally have standing administrative policies that prohibit them from collecting a body from the community or an institution until there is a completed certificate of death. In the event of a pandemic with many bodies, it seems likely that funeral directors could develop a more flexible practice if directed to do so by a central authority such as the Virginia Funeral Director's Association, the Virginia Attorney General's Office, or possibly the Registrar of Vital Statistics. These special arrangements must be planned in advance of the pandemic and should include consideration of the regional differences in resources, geography, and population. The Board of Medicine should support this effort by educating their members of the responsibility to complete the death certificate for their patients.

3.7. SUPPLY MANAGEMENT

Counties should recommend to funeral directors that they not order excessive amounts of supplies such as embalming fluids, human remains pouches, etc., but that they have enough on hand in a rotating inventory to handle the first wave of the pandemic (that is enough for six months of normal operation). Fluids can be stored for years, but human remains pouches and other supplies may have a limited shelf life. Cremations generally require fewer supplies since embalming is not required.

Families having multiple deaths are unlikely to be able to afford multiple higher-end products or arrangements. Funeral homes could quickly exhaust lower-cost items (e.g. inexpensive caskets) and should be prepared to provide alternatives.

3.8. SOCIAL/RELIGIOUS CONSIDERATIONS

Most religious and ethnic groups have very specific directives about how bodies are managed after death, and such needs must be considered as a part of pandemic planning. Christian sects, Indian Nations, Jews, Hindus, and Muslims, all have specific directives for the treatment of bodies and for funerals. The wishes of the family will provide guidance; however, if no family is available local religious or ethnic communities can be contacted for information. Counties should contact the religious and cultural leaders in the pandemic planning stages and develop plans. Counties should document what is culturally and religiously expectable, what can be compromised and what practices are strictly forbidden.

As a result of these special requirements, some religious groups maintain facilities such as small morgues, crematoria, and other facilities, which are generally operated by volunteers. Religious groups should be contacted to ensure these facilities and volunteers

are prepared to deal with pandemic issues. Religious leaders should also be involved in planning for funeral management, bereavement counseling, and communications, particularly in ethnic communities with large numbers of people who do not speak English or Spanish.

3.9. ROLE OF THE VIRGINIA FUNERAL DIRECTORS ASSOCIATION (VFDA)

It is recommended that all funeral directors contact their OCME and Health Departments to become involved in their disaster and pandemic planning activities with respect to the management of mass fatalities at the local level. Funeral directors should consider it a part of their professional standards to make contingency plans if they were incapacitated or overwhelmed.

The National Funeral Directors Association recommends that members begin thinking about state and local responses to the possible outbreak of an avian flu pandemic. Specifically, members are urged to:

- Protect yourself. Ensure that you and your staff are up to date with vaccinations against influenza, hepatitis, pneumonia and other infectious diseases.
- Consider how you can prepare for as many as two to three times the normal number of deaths over a six-month period. Do you have adequate supplies on hand or can you assure that they will be readily available if needed?
- Make contact with local medical examiners or coroners to discuss the possibility of a pandemic and how you, locally, will respond.

3.10 STORAGE AND DISPOSITION OF HUMAN REMAINS

Bodies can be transported and stored (refrigerated) in impermeable bags (double-bagging is preferable), after wiping visible soiling on outer bag surfaces with 0.5% hypochlorite solution. Storage areas should be negatively pressured with 9--12 air exchanges/hour.

Local emergency management agencies, funeral directors, and the state and local health departments should work together to determine in advance the local capacity (bodies per day) of existing crematoriums and soil and water table characteristics that might affect interment. For planning purposes, a thorough cremation produces approximately 3--6 pounds of ash and fragments and takes approximately 4 hours to complete.

4.0 ORGANIZATIONAL ROLES AND RESPONSIBILITIES

The following table identifies roles and responsibilities of different agencies within the pre-pandemic, pandemic and post-pandemic period. The list is not all inclusive and is subject to change, based on the future planning considerations. The Planning Guide for Funeral Homes and Crematorium Services in Appendix 1 provides further planning considerations for the sector.

Table 2. Roles and responsibilities of some agencies involved with pandemic mass fatality planning and execution.

Agency	**Pre-pandemic** Interpandemic and Pandemic Alert **period**	**Pandemic Period**	**Post-Pandemic Period**
VDEM And Local EOC	✓**Identify needs to ensure that the plan is finalized and logistical systems are in place for implementation as needed.**	✓**Ensure mass fatality issues are communicated to affected stakeholders through the Emergency Operations Center (EOC).** ✓**Maintain contact with the county Emergency Operations Centers and OCME** ✓**Establish if Funeral Directors Association representation is required at the state Emergency Operations Center.**	✓**Conduct evaluation of the response as it relates to handling mass fatalities.** ✓**Utilize findings to identify areas of improvement.**
VDH EP&R	✓**Establish a relationship with relevant agencies, including the OCME, VA Funeral Directors Association, and law enforcement.** ✓**Develop a Planning Guide for Funeral Homes to assist in their planning on how to reduce and deal with the impact of the high number of fatalities on the sector.** ✓**Maintain liaison with relevant agencies and provide technical advice as to how to deal with the effects of a mass fatality event due to the pandemic.**	✓**Establish representation at the State Emergency Operations Center.** ✓**Ongoing communication with relevant agencies in order to address issues as they come up.** ✓**Ongoing monitoring of necessity of measures to protect public health (e.g. restricting attendance at funerals).** ✓**Ongoing communication with the general public through media and other appropriate channels to inform them regarding the above public health measures.** ✓**Ensure provision of psychosocial support to the families of the deceased.** ✓**Provide care for ownerless pets and livestock through animal shelters, or other animal protection groups.** ✓**Open VDH hot line to provide information and/or referrals.** ✓**Information related to fatalities is also going to be posted on VDH's web site.**	✓**Conduct evaluation of response as it relates to dealing with mass fatalities.** ✓**Utilize findings to identify areas of improvement.**
Law Enforcement Agencies	✓**As one of the lead agencies for dealing with mass fatalities, law enforcement at all levels should be involved in developing a pandemic mass fatality response plan as part of the State Influenza Pandemic Response Plan.** ✓**Ensure systems are in place to implement the pandemic mass fatality response plan as needed.**	✓**Establish representation at the State Emergency Operations Center.** ✓**Implement the Pandemic Mass Fatality response plan as outlined.**	✓**Conduct evaluation of the response as it relates to handling mass fatalities.** ✓**Utilize findings to identify areas of improvement.**
VA OCME	✓**Participate and provide expert advice to the development of the mass fatality plan and**	✓**Ensure communication with State EOC and county EOC related to mass fatality issues.** ✓**Based on the needs assessment,**	✓**Provide input to the response evaluation and help identify "best practices" for future**

	recommendations for dealing with the impact of mass fatalities due to a pandemic in the state and county. **✓Ensure systems are in place to implement the pandemic mass fatality response plan when needed.**	**provide consultative advice on identification of morgue site and/or temporary short-term storage facility.** **✓Provide advice on notification of the next of kin, if required.** **✓Provide advice on temporary interment locations and procedures if needed.**	**implementation.**
Hospitals	**✓As part of pandemic influenza planning, develop specific plans for dealing with high mortality rates in hospitals due to pandemic.**	**✓Based on need, enlarge morgue capacity or adapt alternate space to accommodate a higher than normal mortality rate.** **✓Notify local Health department and VDH of all deaths with influenza as the cause or contributing cause.**	**✓Provide input to the response evaluation and help identify "best practices" for future implementation.**
Funeral Homes and Crematoriums	**✓Develop preparedness plans to address issues such as supplies, equipment, vehicles and personnel shortages.** **✓A six months inventory of supplies in stock should be developed and maintained.** **✓Implement preparedness plans.**	**✓Raise issues of concern with VFDA, VDH or through the Board of Funeral Directors and/or Board of Medicine, the OCME or VDEM** **✓Maintain a six months inventory of supplies in stock.**	**✓Provide input to the response evaluation and help identify "best practices" for future implementation.**

4.1 STATE GOVERNMENT

4.1.1 Governor's Office

- May declare an establishment of temporary internment sites
- May order the closing of temporary interment sites and relocation of human remains to cemeteries

4.1.2 Virginia Department of Health

- Meet daily or as needed to discuss situation
- Provide information to key organizations regarding pandemic influenza
  - Write an article for the Virginia Funeral director's Association, etc for distribution to their licensees and members via newsletters, websites, etc.
- Utilize the Health Alert Network (HAN) to communicate with county health officials, OCME, hospitals, physicians, laboratory directors, community health centers, childcare centers, schools and the media
- Provide influenza training to OCME, funeral directors, funeral homes, and MA workers.
- Develop public education programs and materials on how the MA system is handling mass fatality and where the MACPs are located.
- Review update and maintain this annex.

- Coordinate needs assessment of current morgue capacity across Virginia
  - Morgue capacity at healthcare facilities
    - Ask Virginia Hospital Association to conduct survey of morgue capacity at hospitals
    - Ask Division of Public Health Services to conduct a survey of other healthcare facilities
  - Assessing morgue capacity in non-healthcare facilities

- Assist localities in surge capacity using refrigerated warehouses, trucks, and other storage methods.

4.1.3 Office of Vital Records

- Establish a voluntary "acute death reporting system" with sentinel county registrars
  - Report number of influenza and pneumonia deaths as a proportion of the total number of deaths by week
  - This system would be activated during Pandemic Phase 6 when cases are in the United States
- Mandatory pediatric influenza death reporting
- Ease filing locations and time requirements throughout the state during the Pandemic Phase
- Assist localities in tracking of human remains in the storage morgues and the personal effects depot record and tracking operation
- Establish web-based death certificates
  - The secured system will allow an electronic chain from funeral director to doctor to government certifier for efficient and remote certification

4.1.4 Public Information Office (PIO) or the Communications Group

- Create press releases for the media concerning mortuary affairs system goals and the implementation of temporary interment sites
- Develop messaging regarding expecting deaths at home, not in medical facility, and how to store decedents until they can be transferred to MACPs
  - VDH Office of Communications and Office of the Chief Medical Examiner should work with Department of Mental Health, Mental Retardation, and Substance Abuse Services in crafting these messages
- Conduct press conferences as appropriate to explain the need for mass fatality procedures, delay of death certificates, funerals and MA processes/procedures.
- Utilize the Health Alert Network (HAN) to communicate with county health officials, OCME, hospitals, physicians, laboratory directors, community health centers, childcare centers, schools and the media
- Provide influenza training to OCME, funeral directors, funeral homes, and MA workers.
- Develop public education programs and materials on how the MA system is handling mass fatality and where the MACPs are located.
- Review update and maintain this annex.

4.1.5 State Board of Funeral Directors and Embalmers

- Oversee and assist in the management of increased deaths and burial activities.

4.1.6 Virginia Department of Mental Health, Mental Retardation, and Substance Abuse Services

- Develop messaging regarding expecting deaths at home, not in medical facility, and how to store decedents until they can be transferred to MACPs
    - VDH Office of Communications and Office of the Chief Medical Examiner should work with Department of Mental Health, Mental Retardation, and Substance Abuse Services in crafting these messages
- Develop messaging regarding stress management
    - Stress of being sick
    - Stress of taking care of sick individuals
    - Stress of losing loved ones and friends
    - Stress of possible limited government/public/private services and consumables

4.2 LOCAL GOVERNMENT

4.2.1. Local/County Health Departments

- Implement Isolation and Quarantine as needed and coordinate requirements for the movement of human remains inside and outside of the quarantine area.

4.2.2 Metropolitan Medical Response System (MMRS)

- If requested by the local health department, administer vaccine to funeral directors, funeral home workers and MA system personnel, to include search and recovery personnel.

4.3 Private Organizations

4.3.1 Virginia Funeral Directors Association (VFDA) / Virginia

- Assist the localities in the coordination of mortuary services
    - Transportation, preparation and disposition of deceased persons
    - Acquisition of funeral supplies
    - Assist clergy support for funerals
    - Provide family support
- Assist in communication with key partners
    - Provide education and updates on pandemic influenza to members of VFDA
    - Serve as liaison to the National Funeral Directors Association
    - Serve as liaison to religious and cultural leaders and provide ethnic funeral consultation
- Serve as a clearinghouse for mortuary concerns

5.0 POST-PANDEMIC RECOVERY

After a pandemic wave is over, it can be expected that many people will remain affected in one way or another. Many persons may have lost friends or relatives, will suffer from fatigue and psychological problems, or may have incurred severe financial losses due to interruption of business. The Federal and Virginia State Governments have the natural role to ensure that mass fatality response concerns can be addressed and to support "rebuilding the society".

The post-pandemic period begins when the Virginia Public Health Commissioner declares that the influenza pandemic is over. The primary focus of work at this time is to restore normal services, deactivate pandemic mass fatality response activities, review their impact, and use the lessons learned to guide future planning activities.

- Deactivate MA emergency plans
- Move remains from the temporary interment location (if utilized) to final resting place in cemeteries.
- Religious ceremonies conducted during reinterment and at the closing of the temporary interment locations.
- Closing, cleanup, and restoration of temporary interment locations.
- Determine when mortuaries and funeral homes can resume normal operations
- Provide grief counseling to MAS staff and public as needed
- Redeploy human and other resources as needed
- Finalization of personal effects
- Process record keeping for financial purposes.
- Evaluate and revise the mass fatality plans as required

In addition to the above responsibilities, an overall assessment of the mortuary affairs system, including the burden from human death, and financial costs of the pandemic ought to be undertaken. This will be coordinated at the state and most likely at the national level.

6.0 REFERENCES

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15. WHO Global Influenza Preparedness Plan The Role Of WHO And Recommendations For National Measures Before And During Pandemics, Department of Communicable Disease Surveillance and Response Global Influenza Programme, The World Health Organization 2005.

6.1 STATE PANDEMIC PLANS USED AS REFERENCES:

- Arizona
- California
- Colorado
- Kansas
- North Carolina
- Maine
- Oregon
- Rhode Island
- Washington
- Wisconsin

6.2 INTERNATIONAL PANDEMIC PLANS USED AS REFERENCES:

- Australia
- Canada
- European Union
- Toronto City
- New Zealand

ACRONYMS

ANSI-American National Standards Institute

CERT-Community Emergency Response Team

CFR- Code of Federal Regulations

DMORT- Disaster Mortuary Operations Response Team

DOT- Department of Transportation

DPMU- Disaster Portable Mortuary Unit

EMS- Emergency Medical Services

EP&R- Emergency Preparedness and Response Division

GPS- Global Positional System

HAN- Health Alert Network

HEPA- High-Efficiency Particulate Air

HIPAA- Health Insurance Portability and Accountability Act

HVAC- Heating, Ventilation, and Air Conditioning System

ICS- Incident Command System

MA- Mortuary Affairs

MACPs- Mortuary Affairs Collection Points

MAS- Mortuary Affairs System

MMRS- Metropolitan Medical Response System

NIMS- National Incident Management System

NIOSH- National Institute of Occupational Safety and Health

NOK- Next-of-Kin

NRP- National Response Plan

OCME- Office of the Chief Medical Examiner

PAPRs- Powered Air-Purifying Respirators

PI- Pandemic Influenza

PIO- Public Information Office

PPE- Personal Protective Equipment

VDH- Virginia Department of Health

VFDA- Virginia Funeral Directors Association

VEOC- Virginia Emergency Operations Center

VDEM- Virginia Department of Emergency Management

WHO- World Health Organization