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Mass Fatality Planning for Pandemic Influenza: A Planning Model From a Seven-County Region in Kentucky

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The National Association of County and City Health Officials (NACCHO) is the national organization representing local health departments. It supports efforts that protect and improve the health of all people and all communities by promoting national policy, developing resources and programs, seeking health equity, and supporting effective local public health practice and systems.

When Angela Woosley, a regional public health preparedness coordinator in Kentucky, learned that a severe pandemic of influenza could cause a 331 percent increase in deaths in her region over an 8-week period, she realized that her region's mass fatality plan would not suffice. The region's existing mass fatality plan for mortuary services during a large-scale emergency, such as an airline crash or explosion, relies heavily on mutual aid from neighboring counties and regions. During a severe pandemic, a disease outbreak that would affect the entire country, these mortuary resources are unlikely to be available. She also learned that her local and state coroners are not legally responsible for managing deaths from natural causes like influenza. Within Kentucky, the responsibility for pandemic influenza preparedness and response lies heavily on public health. With this information, Woosley called upon the cooperation and expertise of coroners, the medical examiner, local funeral home directors, emergency management, hospitals, academia, the healthcare community, and professional associations, among others, to develop a unique "Natural Death Surge Plan for Catastrophic Public Health Emergencies" for Region 3, Woosley's rural, seven-county jurisdiction in western

Kentucky. This plan would be activated if the mortuary capacity in Region 3 were overwhelmed by an influenza pandemic or other long-term catastrophic mass fatality event. Much of this plan was informed by ideas and templates garnered in an informal national review of state and local mass fatality plans for pandemic influenza, conducted by the National Association of County and City Health Officials (NACCHO).

What makes Region 3's natural death surge plan unique to its mass fatality plan is the setup and operation of two central collection points (CCPs) for managing deaths from all causes during the duration of a severe pandemic. If Region 3's capacity to provide mortuary services at individual funeral homes were overwhelmed, all the funeral homes in Region 3 would be authorized to close and relocate their staff, supplies, and vehicles to two CCPs. The CCPs are Region 3's two largest funeral homes at the east and west ends of the region, respectively. During the creation of the plan, Woosley also recognized many significant unresolved issues, such as lack of adequate cold storage for human remains; lack of supplies, such as body bags and embalming resources; a slow death certificate issuance process; and the implications caused by an increase of deaths at home. The plan includes creative resolutions to many of these issues. Summarized here is a step-by-step guide for developing a mass fatality plan for pandemic influenza, or natural death surge plan, as modeled by Region 3 in Kentucky.

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● Step 1: Review the Jurisdiction's Legal Authorities

As mentioned previously, coroners in Kentucky are not legally responsible for managing deaths caused by known natural causes, including pandemic diseases. Although coroners will have a role in a pandemic response, public health is responsible for pandemic mass fatality planning. NACCHO's review of plans from across the country revealed that this is the case in many states. In addition to understanding the legal authority for managing natural-cause deaths, planners should review any laws or statutes concerning public health authority during a public health emergency. In Kentucky, public health has the power to close funeral homes and relocate their resources to centralized facilities during a declared emergency. This authority is necessary for the activation of Region 3's natural death surge plan.

● Step 2: Engage Traditional and Nontraditional Partners

Over the past several years, public health has come to be recognized as a response partner during emergencies, alongside emergency management, law enforcement, firefighters, and emergency medical services. Many health departments have been working with these partners to develop emergency response plans for everything from hurricanes to bioterrorism. To develop a natural death surge plan, public health planners must develop working relationships with other nontraditional stakeholders, such as coroners, medical examiners, funeral home directors, nonhospital healthcare workers (eg, home hospice nurses), and leaders of faith-based organizations. These partners will have an important role in the development and execution of any plan involving the management of mass deaths.

● Step 3: Conduct Background Research

Planners must assess the jurisdiction's current mortuary service capacity, including funeral homes' aggregate capacity for embalming, burial, and cremation per week or month. The first step is to identify all funeral homes, crematoriums, and private and public cemeteries, understand each of their capacities or "market share," and plot them on a map. If a jurisdiction intends to utilize one or more CCPs, planners should identify large funeral homes or other facilities that could potentially serve as a CCP. During this process, planners should be cognizant of building positive working relationships with funeral home directors and develop a mutual understanding of each other's responsibilities and functions. They should also spend time researching

mortuary necessities, such as body bags, cold storage, and burial supplies, and assess the need for stockpiling some of these items.

● Step 4: Plan Operations

This step is the most complex in natural death surge planning. Several functions must be addressed:

- Setup and operation of CCPs
- Identification of remains
- Declaration of death and issuance of death certificates
- Transportation of human remains from healthcare facilities and homes
- Securing valuables left on the body
- Security needs in the mortuary facilities
- Temporary cold storage of remains
- Tracking and temporary or permanent burial of remains
- Setup and operation of Family Assistance Centers

Region 3 has several recommendations for meeting some of these complex operations challenges. First, expand the number of those able to officially declare death and issue provisional death certificates during a pandemic so that remains can be removed from homes and healthcare facilities as quickly as possible. Examples of those who could fulfill these functions include nurses and home hospice staff. Second, plan to bury human remains as quickly as possible in temporary plots. This addresses a number of issues. Cold storage capacity for human remains will be quickly overwhelmed during a severe pandemic; however, immediate permanent burials will be difficult to expedite if group gatherings, such as funeral services, are banned as a disease control measure during a severe pandemic. Therefore, a solution would be to bury remains quickly in temporary plots in one centralized location. After the pandemic, funeral services can resume and permanent burial wishes can be carried out. Planners should be mindful that some families will not have the means to disinter and rebury their loved ones, so the land chosen for the pandemic burial site may become a permanent resting place for some. A third recommendation is that global positioning system technology be used to track the deceased and their temporary burial plot.

Currently, very limited information is available online concerning mass fatality management planning for pandemic influenza. Kentucky's Region 3 natural death surge plan is an excellent template for use by other local and regional jurisdictions that are preparing for pandemics and other large-scale emergencies. Region 3 garnered ideas from plans developed by other jurisdictions, including Barron County, Wisconsin, and Oregon. To access Region 3's Natural Death Surge Plan, please visit www.naccho.org/toolbox/.