Assumptions Concerning Response to a Pandemic

Pandemic Planning Guidance

The pandemic severity and measures of response needed will most likely be different in each and every political subdivision in the state. Local jurisdictions will lead the response and implement measures as needed to minimize morbidity and mortality and maintain critical infrastructure services. DHSS will support this local response through established emergency protocols and systems. The following planning guidance outlines anticipated degrees of impact and response needed per level of pandemic severity based on historical evidence and modeling, but should in no way be construed as predictive of what will actually occur during a pandemic. Local jurisdictions should consider regional planning to assure a uniform response. Based on the pH1N1 experience, different local jurisdictions handled the distribution of vaccine differently. This caused confusion for citizens, especially those who lived in one jurisdiction, worked in another jurisdiction, and received health care in a third jurisdiction. The differing strategies for distribution lead to frustration for the citizens and also harmed credibility of the public health system.

(NOTE: The planning assumptions outlined below are for planning and informational purposes only as response activities will be dictated by on the ground information and decisions on the level of response needed by DHSS will be made as per the Concept of Operations.)

Mild Pandemics:

Impacts and Response Structure:

Mild pandemics (mortality and morbidity rates about the same to one and a half times seasonal influenza) on the order of the 1968 pandemic, will likely mimic the effects and impacts of seasonal influenza, perhaps with the addition of targeting some population groups not normally as susceptible to seasonal influenza. Mild pandemics will likely be able to be managed much as seasonal influenza is managed. LPHAs and health care organizations will likely be able to continue to function and provide response without moving into emergency response mode (i.e., without the activation of emergency operations centers and the utilization of ICS), though there may be some brief surge of activity in some areas of the state necessitating increased resource support and the activation of Emergency Operation Centers (EOCs). Significant prolonged support from emergency response, public safety and other support agencies and organizations will likely not be needed. Community functions and economic and social patterns should not be significantly disrupted, though there may be localized school closures and other interruptions of community social events due to isolated hotspots of disease. Public anxiety, with proper risk communications, should be able to be minimized. Without a good communication and marketing plan public anxiety may run high and disrupt planning assumptions.

Goals in Response:

As critical infrastructure is not anticipated to be greatly impacted and essential services will continue, the goal of response during a mild pandemic will be to reduce illnesses and deaths in those populations most at risk from the disease. Therefore, available resources, messaging, and response activities should be directed toward these targeted populations in order to prevent as many illnesses and save as many lives as possible.

Anticipated Activities:

- **Communications**
  - Basic public health messages - good handwashing, cough hygiene, sanitation, self-isolation if ill, etc. through routine distribution channels.
  - Some targeted messaging toward those most at risk.
  - Public communications on vaccination.
  - Information and messaging directed toward health care providers to provide them with relevant and correct information.

- **Community Containment**
  - **Non-pharmaceutical** - Intensive control efforts (such as case contact investigations, quarantine and isolation, and movement restrictions) may be utilized at the first emergence of the disease to slow rates of transmission, but become ineffective after the pandemic is widespread and should not continue to be utilized.
    - Basic public health measures widely encouraged (personal hygiene, sanitation, handwashing, etc.).
    - No emphasis on more widespread community containment messages (i.e., no call for school or childcare closures, restriction of public gatherings, etc.).
    - Strong emphasis on personal actions and accountability (stay home if ill messaging).

  - **Pharmaceutical**
    - Antivirals targeted toward treatment of those most likely to develop severe illness.
    - SNS supplies may or may not be needed depending on the time of year and the initial manifestation of the pandemic.

- **Vaccination**
  - Vaccine will be targeted toward and prioritized for the most susceptible populations for illness and death first, probably also the most critical front-line essential services personnel (health care, emergency medical services and public health) will be provided for, with the eventual goal of providing vaccine to all who desire to be vaccinated.

- **Surveillance**
  - Intensive use of available passive surveillance systems to ensure the pandemic is adequately monitored and characterized to provide situational awareness.
  - Targeted epidemiological studies done as needed to investigate unusual cases, clusters or fatalities.
  - Laboratory support (Missouri State Public Health Laboratory [MSPHL]) essential to provide confirmation of the virus upon first emergence in the state and to support Sentinel Providers and epidemiological investigations of unusual cases thereafter.

- **Health Care Systems Sustainment**
  - The majority of health care systems will be expected to have the capability and capacity to manage the medical surge of a mild pandemic.
  - Close monitoring of the system will be done (through tools such as the EMSystem and in partnership with Missouri Hospital Association [MHA] and Missouri Primary Care Association [MPCA]) to detect any areas with gaps in or loss of health care services.
  - Close coordination with key partners such as the MHA and critical regional collaboratives essential for information flow and situational awareness.
  - Priority will be to direct state resources and support to maintain these services in the most impacted areas.
  - It is anticipated that the majority of these shortages would be of a level that could be managed within the state without requesting federal resources or the assistance of the SEOC.
  - It is not anticipated that emergency medical services or mortuary services would be compromised.

Moderate Pandemics:

Impacts and Response Structure:

Moderate pandemics on the order of the 1957-58 pandemic will be characterized by a two to three fold increase in mortality over a typical seasonal influenza year and also have increases in the overall number of illnesses and hospitalizations. A pandemic of this magnitude will have increased likelihood of exceeding the surge capacity of health care and mortuary systems and it is expected that there would be a number of communities that would need state and federal support, perhaps over a few weeks period, to sustain these essential services. 9-1-1 call centers (Public Safety Answering Points) and emergency medical services could likewise be temporarily past capacity in some areas. Jurisdictions not needing state or federal assistance would need to be very well prepared and be taking community mitigation and educational steps to slow transmission rates and increase the capacities of essential services. Broader impact on critical infrastructure (power, water, fire, law enforcement, etc.) is expected to be minor and these services would largely be expected to remain intact, though there could be some spot disruptions of services for short duration, depending on community preparedness and capacity levels and on the particular epidemiology of the disease (i.e., which age groups—for example working age adults—are most impacted). Public anxiety may be heightened during a moderate pandemic, and there would be increased concerns over public unrest in circumstances where the demand is high for certain services or products (such as vaccine, medications and hospital beds) that may not be available in sufficient quantity to meet the public's expectations. Economic activity and social functions could see some disruptions, but these would be expected to be short-lived and occur only during the height of outbreaks in communities and would come about through individual actions rather than comprehensive government actions. Health and medical EOCs and ICS processes would need to be utilized, on an as needed basis, to effectively manage the response. The SEOC would most likely be at least partially activated to assist in the response, particularly if federal support is needed.

Goals in Response:

The goals in response to moderate pandemics are twofold. The primary objective remains to protect public health (i.e., reduce illness and death), but on occasion the primary objective may best be met through the sustainment of critical infrastructure, in particular the health care system. Efforts would therefore be focused on directing services and resources to those most impacted by the disease, and on assuring that the systems that care for the sick continue to function. This may mean prioritizing available medications and vaccine to health care and emergency medical systems workers so they can continue to provide services.

Anticipated Activities:

- **Communications**
  - Public health messaging to public, and information on vaccine.
  - Information provided to health care workers.
  - Increased need for calming and informative messages to the public as disruptions in services occurs.
  - Messages may need to be further coordinated through emergency management organizations, with the possible formation of joint information centers (JICs).

- **Community Containment**
  - **Non-pharmaceutical**
    - Individual actions as stressed in activities for "mild" pandemic continue.
    - Greater emphasis and reliance on broad-scope community containment measures to slow the rate of spread including:
      - School and childcare closures.
      - Closure of places of public assembly.
      - Possible closures of events.
  - **Pharmaceutical**
    - Antivirals targeted towards treatment of those most ill.
    - Possible use of antivirals for post exposure prophylaxis for outbreak settings of high risk populations.
    - Consideration of prophylaxis antiviral usage in certain critical occupational settings for maintenance of essential functions.

- **Vaccination**
  - Vaccine targeted toward highest risk groups.
  - Vaccine targeted toward critical infrastructure personnel.

- **Surveillance**
  - Intensive use of available passive surveillance systems to ensure the pandemic is adequately monitored and characterized to provide situational awareness.
  - Targeted epidemiological studies done as needed to investigate unusual cases, clusters or fatalities.
  - Laboratory support (MSPHL) essential to provide confirmation of the virus upon first emergence in the state and to support Sentinel Providers and epidemiological investigations of unusual cases thereafter.
  - Active targeted surveillance conducted as needed to provide specific information on disease spread and virulence.

- **Health Care Systems Sustainment**
  - Many of the health care systems in the state will be beyond capacity for extended periods.
  - There will likely be marked shortages in some areas, including Intensive Care Unit capacities for pediatrics, available ventilators and some types of personal protective equipment (PPE).
  - Waiting times to primary care physicians, clinics and hospital emergency departments may become very lengthy in some areas.
  - The state and federal governments will be heavily relied upon to backfill shortages in resources and staff.
  - Cooperation and communication with key partners will be essential to share resources and maintain continuity of operations.
  - EOCs (federal, state, local and hospital based) will likely need to be opened and maintained for lengthy periods to manage the response.
  - Emergency medical services may be severely strained in some areas.
  - Mortuary systems may have to make adjustments in operations to maintain services.

Severe Pandemics:

Impacts and Response Structure:

Severe pandemics (1918 like) are marked by a several order increase in mortality over a typical seasonal influenza year, will see a significant escalation in overall illness and hospitalization and will likely severely impact segments of the population (such as school-age children or young adults) not typically as affected by seasonal influenza. A severe influenza pandemic will likely affect all segments of society, could overwhelm or disrupt health care and mortuary systems and other essential services, and have the potential to severely disrupt commerce and economic activity, breakdown normal societal patterns and cause psychosocial trauma. With proper planning and strong public health, emergency management and health care systems, pandemics that in the past would have been severe may be mitigated to the "moderate" or "mild" categories. Local, state, and federal EOCs would need to be activated, most likely for extended periods, to manage the response and to sustain critical services and functions.

Goals in Response:

The goals in response to a severe pandemic remain two-fold, first to protect public health and second to maintain essential services. In a severe pandemic, with the degree of impact on critical infrastructure expected, the focus will likely be on the maintenance of essential services to best protect public health.

Anticipated Activities:

- **Communications**
  - Public health messaging to public, and information on vaccine.
  - Information provided to health care workers.
  - Calming and informative messages to the public as disruptions in services occur.
  - Messages coordinated through emergency management organizations, expected formation of JICs.

- Trusted state and community leaders used to deliver messages to the public and critical infrastructure service workers to maintain order.

- **Community Containment**
  - **Non-pharmaceutical**
    - Individual actions as stressed in activities for "mild" and "moderate" pandemics continue.
    - Broad-scope community containment measures utilized to slow the rate of spread including:
      - School and childcare closures.
      - Closure of places of public assembly.
      - Closures of events.

  - **Pharmaceutical**
    - Antivirals continue to be targeted to those ill and at highest risk for negative outcomes.
    - Some antiviral use, in particular if vaccine shortages occur, may need to be targeted to critical infrastructure workers for prophylaxis.

- **Vaccination**
  - Targeted to critical infrastructure workers first.
  - Protection of high risk groups second.
  - Coverage for general population third.

- **Surveillance**
  - Intensive use of available passive surveillance systems to ensure the pandemic is adequately monitored and characterized to provide situational awareness.
  - Targeted epidemiological studies done as needed to investigate unusual cases, clusters, or fatalities.
  - Laboratory support (MSPHL) essential to provide confirmation of the virus upon first emergence in the state and to support Sentinel Providers and epidemiological investigations of unusual cases thereafter.
  - Active targeted surveillance conducted as needed to provide specific information on disease spread and virulence.

- **Health Care Systems Sustainment**
  - The demand for services from all aspects of the health care system (e.g., primary care, emergency medical services, tertiary care, etc.) will exceed its capacity for an extended period of time.
  - There will be marked shortages of staff and resources in some areas of the state, including Intensive Care Unit capacities for pediatrics, available ventilators and some types of PPE.
  - Access to primary care physicians, clinics and hospital emergency departments may become impossible in some areas.
  - The state and federal governments will be heavily relied upon to backfill shortages in resources and staff.
  - Cooperation and communication with key partners will be essential to share resources and maintain continuity of operations.

- EOCs (federal, state, local and hospital-based) will need to be opened and maintained for lengthy periods to manage the response.
- Emergency medical services may be overwhelmed in some areas.
- Mortuary systems may be overwhelmed in some areas and rely on state and federal assistance.

- It will be essential for DHSS to
  - Monitor/track bed capacity of hospitals and long-term care facilities in the state.
  - Monitor/track Intensive Care Unit capacities in tertiary care centers statewide.
  - Monitor/track ventilator capacity and availability for effective distribution of state reserves.
  - Monitor/track primary care practitioners to evaluate populations' access to primary and preventive health care services, including immunizations.
  - Activate and deploy medical volunteers and medical reserve corps to alleviate severe health care practitioner shortages.
  - Request federal health care resources as available.
  - Activate and deploy state and (when available) emergency mortuary systems.
  - Assure communication and cooperation with key partners (health care providers, emergency medical services, local and federal agencies) to control distribution of scarce resources and maintain continuity of operations.