

CITY OF CLEVELAND EMS

PANDEMIC INFLUENZA PLAN

Event: The City of Cleveland is affected by a worldwide influenza pandemic.

Incidence: A pandemic occurring in 1918 (Spanish Flu) killed as many as 100 million people world-wide, including approximately 650,000 people in the United States. Less severe pandemics occurred in the United States during the late 1950s and 1960s.

BACKGROUND INFORMATION AND KEY PLANNING ASSUMPTIONS:

Issues: Three major issues can be expected to affect EMS Operations:

Reduced staff levels.

Increased demand for EMS services.

Supply chain interruptions.

Reduced Staff Levels:

During the pandemic, it is estimated that 15 to 35% of population will become ill enough that for a period of time, they will be unable to continue their usual activities. Infection rates affecting the public at large will also apply to Cleveland EMS staff. Staff may be absent due to illness for 5 days (period of communicability) or longer (that is, until well enough to return).

While it is not anticipated that this number of people will be off ill at the same time, a certain number of staff will also be absent caring for sick family members, caring for children forced to stay home due to school and/or day care closures, or on bereavement leave. It can also be anticipated that some staff may stay home out of fear.

There will be multiple waves during the pandemic. A wave may last 6-8 weeks, with the second wave possibly being more severe than the first. A third wave is possible.

A useful tool for estimating expected staff level reductions is the FluWorkLoss program produced for the United States Centers for Disease Control and Prevention (CDC). **FluWorkLoss** estimates the potential number of days lost from work due to an influenza pandemic. Users can change almost any input value, such as the number of workdays assumed lost when a worker becomes ill or the number of workdays lost due to a worker staying home to care for a family member. Users can also change the length and virulence of the pandemic so that a range of possible impacts can be estimated. **FluWorkLoss** provides a range of estimates of total workdays lost, as well as graphic illustrations of the workdays lost by week and percentage of total workdays lost to influenza-related illnesses. The program is available for free download at:

<http://www.cdc.gov/flu/tools/fluworkloss/index.htm>

Increased demand for EMS services:

Non pandemic-related demands for health care services will be somewhat reduced by a combination of factors, including public fear of health care institutions, cancellations of elective procedures and non-essential services, and fewer accidents due to reductions in vehicular traffic. However, this reduction will be more than overcome by increased demands related to the pandemic illness itself.

- Demands on the greater health care system will potentially have a profound effect on EMS systems. Issues such as offload delay can be expected to worsen, as hospitals run out of available beds and staff to manage patient loads. Other EMS systems in the region will face the same pandemic impacts with fewer resources than Cleveland EMS. It is possible that Cleveland EMS will be requested to provide resources and assistance to those services. The request would most likely come through the City, County or Regional EOC.
- Among influenza patients, it is likely that many of those who require hospital admission will be ill enough to require ambulance transport. Others who do not require admission are likely to request some sort of EMS response. Patients who are unable or unwilling to go to the doctor's office or hospital may turn to EMS to obtain health care services.
- The CDC has two resources available to predict increased demands on the health care sector in an influenza pandemic; FluSurge and FluAid. FluSurge is a spreadsheet-based model which provides estimates of the surge in demand for hospital-based services during an influenza pandemic. The spreadsheet estimates the number of hospitalizations and deaths of an influenza pandemic (whose length and virulence are determined by the user) and compares existing hospital capacity with the number of persons hospitalized, the number of persons requiring ICU care, and the number of persons requiring ventilator support during a pandemic. This spreadsheet is available at: <http://www.cdc.gov/flu/tools/flusurge>.
FluAid provides a range of estimates of impact in terms of deaths, hospitalizations, and outpatients visits due to pandemic influenza. This program can be found at: <http://www.cdc.gov/flu/tools/fluaid/>.
- While accurate predictions of expected increases in call volume are difficult. However they are expected to be significant. It is safe to assume that a combination of reduced ambulance availability and increased demand for services will result in severe pressures on the EMS system.

Supply Chain Interruptions:

High levels of absenteeism will also affect the availability of supplies Cleveland EMS requires to provide Emergency Medical Service. There is also a possibility that international borders will be closed by countries in an attempt to limit the spread of infection. This would also have a significant impact on the supply chain.

Critical supplies include, but are not limited to:

- Patient care supplies:
- Medical supplies.
- Pharmaceutical supplies.
- Oxygen.
- Personal Protective Equipment:
- Cleaning supplies:
- Cleaning materials.
- Water.
- Transportation-related supplies:
- Fuel.
- Vehicles.
- Parts and tools for vehicle maintenance.
- Information Technology/Communications supplies:
- Parts and tools for vehicle communications and Dispatch center maintenance.
- IT/Engineering supplies.

World Health Organization Pandemic Levels The World Health Organization (WHO) is the United Nations health agency responsible for coordinating a global response to an influenza pandemic. The WHO is responsible for declaring the start of a pandemic. Influenza surveillance is conducted by the WHO in an effort to detect emerging strains of pandemic influenza. The WHO has developed a classification system which outlines the various pandemic phases.

| World Health Organization Pandemic Periods and Phases | | |
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| Period | Phase | Description |
| Inter-Pandemic Period | Phase 1 | No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk of human infection or disease is considered to be low. |
| | Phase 2 | No new influenza virus subtypes have been detected in humans; however, a circulating animal influenza virus subtype poses a substantial risk of human disease. |
| Pandemic Alert Period | Phase 3 | Human infection(s) with a new subtype, but no human-to-human spread, or at most rare instances of spread to a close contact. |

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| | Phase 4 | Small cluster(s) with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans. |
| | Phase 5 | Larger cluster(s) but human-to-human spread still localized, suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk). |
| Pandemic Period | Phase 6 | Pandemic phase: increased and sustained transmission in general population. |
| Post Pandemic Period | | Return to inter-pandemic period. |

Source: WHO global influenza preparedness plan, 2005

Expected Duration: Given the characteristics of past events, it is likely that such a pandemic would strike in two or three separate and distinct stages, with a period of reduction in between. The total event could last for six months or longer.

Vaccine Availability: Given that it generally takes approximately 90 days from the identification of the virus to the availability of significant quantities of vaccine, it can be assumed that no vaccine will be available during the first stage of the outbreak.

CLEVELAND EMS PANDEMIC INFLUENZA PLAN

General:

This plan is based on three principles:

- Protection of staff
- Maintenance of service to the public
- Support of staff who are ill or unable to work

The Cleveland EMS Pandemic Influenza Plan reconciles with the Cleveland Department of Public Health Pandemic Influenza Plan. Additionally, based on Canadian research following the SARS epidemic, we recommended that the following precautionary principle be expressly adopted as a guiding principle.

This principle states that when it comes to worker safety in health care settings, reasonable steps to reduce risk should not await scientific certainty. Adopting this recommendation means that in any future infectious disease crisis, this precautionary principle should guide the development, implementation and monitoring of:

- **Procedures, guidelines, processes and systems for the early detection and treatment of possible cases, and**
- **Worker safety procedures, guidelines, processes and systems**

Protection of Tier-One Functions:

Through the continuity of operations planning process, the City of Cleveland has identified the essential services (known as Tier-One Functions) that must continue to be provided regardless of the pandemic. The provision of emergency medical services is extremely important, and many functions within Cleveland EMS have been identified as Tier-One. Certain staff are required to maintain these functions. All other staff can be reassigned to Tier-One functions based on appropriate skill sets. Staff from other Divisions may also be redeployed to support EMS Tier-One functions.

Many redeployed staff will require training in order to perform these functions. One particular potential front-line function that could be performed by non-Tier-One staff is Flu Related Call-Receiving in the Public Health Call Center.

Mitigation: No specific mitigation measures.

Logistics:

Ensure an adequate stock of vehicle and patient care supplies .

- Maintain adequate supplies of patient care equipment, linen, and pharmacy supplies. At present, Cleveland EMS has a stockpile of PPE, specifically N-95 masks and gowns to last approximately 30 days.
- Maintain agreements with vendors to ensure delivery of critical supplies
- In conjunction with CDPH, maintain access to stockpile of antiviral medications and vaccine.

Liaison:

- Circulate an information document to all area hospitals and long term care facilities that outlines the details of the Cleveland EMS plans to reduce, eliminate and restore service,
- Conduct advance planning with the Cleveland Department of Public Health, the Cleveland Divisions of Police and Fire, hospitals, long-term care facilities,

community care access centers, and pharmacies.

- Conduct discussions with the Unions representing Cleveland EMS staff.

Safety:

- Maintain well established Infection Prevention and Control (IPAC) procedures,
- Maintain the practices described in General Order 6.04, Infection Control,
- Conduct periodic review of infection control procedures during Educational In Service Training sessions,
- Maintain ongoing respiratory medical clearance and qualitative fit-testing programs for protective masks,
- Encourage staff to receive annual seasonal influenza immunization. While the annual vaccine may not provide protection against the pandemic strain, it can prevent illness and complications due to seasonal influenza. In addition, each immunization may convey some immunity against other types of influenza, including the possibility of partial immunity against a pandemic strain.

Emergency Information:

- In conjunction with the Cleveland Department of Public Health, public service announcements can be drafted and approved in advance, and be ready for distribution in the event of an emergency.

Dispatch center

- Develop training program for staff redeployed as emergency call-receivers.
- Ensure stocks of essential supplies and equipment are on hand in case of supply chain disruptions.

Preparedness: Monitoring: All EMS Executive Staff will monitor media reports, as well as:

- Cleveland Department of Public Health:
<http://www.clevelandhealth.org> ,
- Cuyahoga County Board of Health
<http://www.ccbh.net>
- Ohio Department of Health:
<http://www.odh.gov>
- CDC
www.cdc.gov
- World Health Organization:
<http://www.who.int>

and other websites on a daily basis. The Executive Staff will meet at regularly scheduled times to assess planning efforts and adjust plans as necessary.

Planning:

- Divisional Operations Center activation may be required. This may be in monitoring mode (single person, 24/7) or full activation (all staff). Consider developing trigger points for service reduction or elimination.
- Consider training of potentially redeployed staff before Tier-One staff absenteeism reaches the point where redeployment is required.

Logistics:

- Ensure that as many emergency vehicles as possible are fully operational, stocked, and fueled.
- Ensure that adequate supplies of patient care equipment, linen, and pharmacy supplies are in place.
- The Division of Motor Vehicles is encouraged to ensure that they have an adequate stock vehicle repair supplies available.

Liaison:

- Cleveland EMS will release planning projections information to regional partners through CDPH or other approved channels.
- Cleveland EMS will utilize established relationships with regional partners to co-operate in information sharing and develop a standardized pandemic response strategy for EMS.
- Contact area hospitals and long-term care facilities to discuss potential impact of potential service delivery reductions
- Continue contact with Cleveland Department of Public Health, the Cleveland Divisions of Police and Fire, hospitals, long-term care facilities, community care access centers, and pharmacies.
- Liaison contact should also be maintained with the Trade Unions representing Cleveland EMS staff.

Safety:

Depending on global and local pandemic alert levels and Public Health Guidance:

- Consider targeted review of Infection Control procedures with Paramedic staff,
- Infection Control procedures may also be enhanced. For example, minimum PPE requirements may be set for all patient contacts,
- Institute active surveillance of staff for signs and symptoms of influenza infection,
- Encourage social distancing wherever possible
- Implement dispensing of antiviral medications to appropriate staff as needed following the first responder medication dispensing plan
- The presence of antiviral medications at Cleveland EMS headquarters may pose a security risk. Additional security may also be required for those staff tasked with the dispensing of antiviral medications. This should be arranged in consultation with Cleveland Police.

Emergency Information:

- Pre-approved public service announcements and staff information documents should be drafted and ready for distribution. These should be prepared in consultation with the Cleveland Department Public Health and City of Cleveland PIO.

Dispatch Center

- In order to isolate staff from each other and reduce potential for cross-infection, consider having the dispatchers wear masks and follow all Infection Control Guidelines, including “electronics-safe” disinfectants.

Response: Planning:

- Will be directed at service continuity. Service reduction may have to be considered. Divisional Operations Center activation will be required.
- Absenteeism rate will be determined on a shift by shift basis by the on-duty scheduling supervisor or senior scheduler and reported to the Divisional Operations Center. Staffing projections for the following 24-hour period will occur as a priority item. Consider up-staffing to offset shortages.
- At the completion of a pandemic wave, identify revised procedures that should be implemented in preparation for subsequent wave(s).

Logistics: Efforts to maximize resources will be necessary in order to maintain service delivery. Any or all of the following should be considered:

- Cancellation of all vacations and other leaves for Dispatch center and Operations staff.
- Extending shift length of Operations and Dispatch Center staff to increase available resources.
- Provision of housing (hotels or established shelters) for Operations and Dispatch Center staff who are ending a shift.
- Increased Operations and Dispatch Center staff counts, with particular focus on reducing off-load delay times. This would include consideration of:
 - Cancellation of Continuing Medical Education and/or Continuing Dispatch Education programs. EMS Education and PI management staff can be deployed into Operations/Dispatch Center as required.
- Service reductions:
 - Delays or reduction in servicing lower priority emergency calls.
 - Cancellation of non-core business Paramedic assignments (Special Events, Community Education, etc.)
 - Deploy a team consisting of a Restricted Duty Paramedic and a Cleveland Police Officer to respond to confirmed Vital Signs Absent (VSA) patients. These teams will confirm the death, and if possible, certify the death, thereby allowing transport of the deceased from the home. The ability to certify a death is not currently in the skill set of either a Paramedic or Police Officer. Alternatively, the Coroner’s Office

may agree to issue warrants to move deceased patients without a certificate of death.

- Ensure that downtime for maintenance is at an absolute minimum. It may be necessary to suspend regular preventive maintenance of vehicles for the duration of the event.
 - Maintain an inventory of available vehicles.
 - Ensure that vehicles remain fully stocked and fueled.
 - Ensure that a plan is in place to refuel Cleveland EMS vehicles in the event of a failure of the fuel distribution system.
- Maintain adequate levels of vehicle and patient care supplies at EMSHQ.
- Establish daily contact with major suppliers (oxygen, linen, equipment, medications, fuel) in order to determine the impacts that they are experiencing, and their ability to provide service.
- Through CDPH, contact the State of Ohio to confirm and finalize procedures for accessing the SNS for Personal Protective Equipment, and to confirm delivery procedures.
- Some staff may be unable to attend work due to childcare issues secondary to school/daycare closures. Consider arranging childcare for EMS staff, using closed City of Cleveland centers and the staff who normally work there.
- Non Tier-One staff will be redeployed to Tier-One tasks as required. This decision will be made by Senior Staff. This is anticipated to be required at approximately 20% absenteeism.
- Staff redeployment will be based on prioritization of activities within Cleveland EMS.
- Staff from other Divisions may be required to support EMS Tier-One functions.

Liaison:

- On-going contact with Cleveland Department of Public Health, the Cleveland Divisions of Police and Fire, hospitals, long-term care facilities, community care access centers, and pharmacies, Trade Unions, etc.
- Depending on staffing levels, Cleveland EMS may supply support staff and Restricted Duty Paramedics to PODs run by Cleveland Public Health.
- Ensure Cleveland EMS representation at the City/County EOC.

Safety:

- The City of Cleveland Department of Public Health will have a stockpile of antiviral medications intended for prophylaxis of City employees. Antiviral prophylaxis is planned for front-line, patient-care providers and certain other targeted groups (key decision-makers, etc.). Cleveland EMS will be responsible for distribution of these medications to identified staff.
- Cleveland EMS has a process for staff immunization if and when a vaccine becomes available. It includes a plan to assist in the immunization of City of Cleveland Safety personnel in accordance with CDC guidelines. This process

is anticipated to take up to two weeks to complete.

- The presence of antiviral medications and/or influenza vaccines at Cleveland EMS Headquarters may pose a security risk. Additional security may also be required for those staff tasked with the administration of vaccines. This should be arranged in consultation with Cleveland Police.
- PPE policies will be implemented in accordance with the precautionary principle. Any cases of suspected job-related infection will be reviewed, and recommendations made to minimize the chances of their recurrence. Further safety considerations include:
 - Active surveillance and controlled access to Cleveland EMS Headquarters including medical screening of employees and visitors.
 - Restriction of free movement of Headquarters staff to those areas they are directly working in.
 - Implementation of strict social distancing measures. This will include directing staff who have the capability of working from home to do so, restricting EMS staff attendance at mass gatherings, and encouraging use of distance-based communication measures (email, tele-and/or video-conferencing, etc.).
 - Consider medical screening of field personnel at beginning of shift.

Emergency Information:

- Develop and release approved information to the public and to EMS staff consistent with the Joint Information Center. Staff briefings should be produced on a regular basis.
- Advise Senior Staff and the Staff Support Unit if any Cleveland EMS personnel are hospitalized or die. The nature of the situation will likely preclude a departmental funeral. A memorial service will be scheduled for after the emergency.

Dispatch center:

- The Deputy Commissioner of Operations may consider extending the shift length of staff.
- Access to the Dispatch center will be restricted to personnel directly involved in the dispatch and call handling functions.
- In order to isolate staff from each other and reduce potential for cross-infection, consider having the dispatchers wear masks and follow all Infection Control Guidelines, including “electronic-safe” disinfectants.
- The Dispatch center will consider modified protocols to compensate for higher call volumes such as:
 - A call triage protocol to assist in prioritization of EMS responses to life-threatening calls.
 - Encouraging self-transport to influenza clinics, urgent-care clinics or hospitals.
 - Encouraging self-care.

Recovery: Planning:

- On direction from Senior Staff, a plan will be devised to transition from emergency operations back to normal service delivery. This plan will take a significant amount of time to implement, as staff will likely have been overworked during periods of significant absenteeism.
- These individuals will have to be removed from service, rested, and returned to the regular work schedule. It may be possible to rely significantly on staff who were off for childcare or other reasons not related to actual illness during the initial phases.
- Conversely, some returning staff may have suffered emotionally debilitating losses, and will have to be reintegrated slowly, and monitored carefully.
- All spending documentation should be collected and itemized to facilitate cost recovery.
- A debriefing of the incident should occur soon after completion of the event.

Logistics

- Ensure that vehicles remain fully stocked and fuelled, and that adequate levels of vehicle and patient care supplies are maintained.
- As the event de-escalates, a decision will be required to resume normal preventive maintenance operations if they were suspended.

Liaison:

- In the event of service restoration, liaison contacts will be required with the Cleveland Department of Public Health, the Cleveland Divisions of Police and Fire, hospitals, long-term care facilities, community care access centers, and pharmacies, etc.

Safety:

- Ensure that staff receive adequate rest periods.

Emergency Information:

- Public service announcements can be issued which provide information on service restoration.

Dispatch center:

- Staffing issues related to Paramedics will also apply to Emergency Medical Dispatchers