Pandemic Influenza Preparedness Plan for Maryland

Version 5

Epidemiology and Disease Control Program
Community Health Administration
Maryland Department of Health and Mental Hygiene

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The Pandemic Influenza Preparedness Plan for Maryland was developed following consultation with approximately 150 individuals representing 90 organizations from Maryland including State and local government, and private and volunteer organizations.

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Pandemic Influenza Preparedness Plan for Maryland

I. PURPOSE:

To provide procedures for mitigating the consequences of an influenza pandemic affecting Maryland.

II. SITUATION AND ASSUMPTIONS:

A. An influenza pandemic in Maryland will present a massive test of any emergency preparedness system. Advance planning for Maryland's emergency response could save lives and prevent substantial economic loss.

B. Although pandemic influenza strains have emerged mostly from areas of Eastern Asia, variants with pandemic potential could emerge in Maryland or elsewhere in the United States.

C. Many geographic areas within Maryland and its neighboring jurisdictions may be affected simultaneously.

D. A pandemic will pose significant threats to human infrastructure responsible for critical community services (in health and non-health sectors) due to widespread absenteeism.

E. Effective preventive and therapeutic measures (vaccines and antiviral medications) may be in short supply.

F. There may be critical shortages of health care resources such as staffed hospital beds, mechanical ventilators, morgue capacity, temporary holding sites with refrigeration for storage of bodies and other resources.

G. Assuming that prior influenza vaccination(s) may offer some protection (even against a novel influenza variant) the annual influenza vaccination program, supplemented by pneumococcal vaccination when indicated, will remain a cornerstone of prevention.

H. Surveillance of influenza disease and virus will provide information critical to an effective response.

I. The Federal government will likely not assume the costs for purchase of vaccines, antiviral medications and related supplies.

J. Current computer capacity of many local health departments is not adequate for expedient dissemination of information and data.

K. An effective response to an influenza pandemic will require the coordinated efforts of a wide variety of organizations – private as well as public, and health as well as non-health related.

III. CONCEPT OF OPERATIONS:

A. State and local organizations will initiate actions listed under Health Services Annex H, Concept of Operation of the Maryland Emergency Operations Plan.

B. An important part of remediation efforts during and after an influenza pandemic will be the coordination by the State of public, private, and volunteer organizations.

C. There are six "essential components" to responding to an influenza pandemic:

1. Command and Control Procedures
2. Surveillance
3. Vaccine Delivery
4. Antiviral Medication Delivery
5. Emergency Medical Services
6. Communications

D. An influenza pandemic will evolve through the following series of phases:

Pandemic Phase	Definition
Novel Virus Alert	- novel virus detected in one or more humans - little or no immunity in the general population - potential, but not inevitable precursor to a pandemic
Pandemic Alert	- novel virus demonstrates sustained person-to-person transmission and causes multiple cases in the same geographic area
Pandemic Imminent	- novel virus causes unusually high rates of morbidity or mortality in multiple, widespread geographic areas
Pandemic	- further spread with involvement of multiple continents
“Second Wave”	- recrudescence of epidemic activity within several months following the initial wave of infection
Pandemic Over	- cessation of successive pandemic “waves”, accompanied by the return (in the U.S.) of the more typical wintertime “epidemic” cycle

IV. ORGANIZATION AND RESPONSIBILITIES:

A. The Secretary, Department of Health and Mental Hygiene (DHMH), is responsible for the overall direction and control of health-related personnel and resources committed to control of an influenza pandemic at the State level and through the local Health Officer, at the local level.

B. Local:

1. Local Health Department (LHD):

a. Pre-Pandemic Phase:

1. Evaluate adequacy of existing local infrastructure to respond to an influenza pandemic.

2. Review LHD policy and procedures to find and remove any barriers to the annual influenza and pneumococcal vaccination programs. Work with local health care facilities to assess and improve health care worker immunization levels.

3. Enhance pneumococcal vaccination coverage levels in traditional high-risk groups (to reduce the incidence and severity of secondary bacterial pneumonia).

4. Review current emergency plans for inclusion of provisions for mass vaccination campaigns. Review security aspects of plan with local law enforcement authorities.

5. Conduct a county-wide space and site resource inventory. Determine the availability of shelters, schools, gymnasiums, nursing homes, day care centers, and other potential sites for aggregate care. Identify appropriate sites to serve as triage and treatment centers, mass vaccination sites or as holding areas for acutely ill patients not able to be admitted to an acute care hospital.

6. In coordination with the Office of Chief Medical Examiner (OCME), identify facilities/resources with sufficient refrigerated storage to serve as temporary morgues, if necessary. Develop a plan for management of bodies when morgue capacity has been exceeded.

7. In coordination with DHMH, devise a plan for distribution and administration of public sector vaccine.

8. Conduct a county-wide inventory of emergency department capacity,

number of hospital beds, number of intensive care unit beds, quantity of ventilators, morgue capacity, and number of health care providers available to see outpatients.

9. Educate staff about the nature and significance of pandemic influenza and the local response.

10. Work with local private and volunteer organizations to develop and synchronize local response to a pandemic of influenza.

11. Coordinate pandemic influenza planning with other public health disaster planning at the local level.

12. Establish a means of rapid, two-way communication between local health department (e.g., health officers and communicable disease coordinators) and hospitals (infection control practitioners and emergency department directors).

b. Novel Virus Alert:

1. Notify hospitals and local private and public partners of novel virus alert.

2. Notify local emergency management director of novel virus alert.

c. Pandemic Alert:

1. Review pandemic influenza response plans.

2. In coordination with DHMH, update hospitals, emergency medical services (EMS), local law enforcement, and local, private and public partners.

d. Pandemic Imminent:

1. Review plan for distribution of public-sector vaccine.

2. Provide DHMH with lists of public vaccine distribution sites.

3. Enhance collection of clinical specimens and transport to DHMH Laboratory.

4. Contact appropriate private partners to review their plans for distribution and administration of private-sector vaccine.

5. Administer vaccine, once vaccine is available.

e. Pandemic:

1. Coordinate use of available local resources during pandemic, including private, public and volunteer resources.

2. Report pandemic-related information regularly to Epidemiology and Disease Control Program, DHMH.

3. Assess effectiveness of local response and available local capacity.

4. Administer vaccine, once vaccine is available.

f. "Second Wave":

1. Continue all activities listed under Pandemic phase.

2. Review, evaluate, and modify as needed, the local pandemic response. Update DHMH.

3. Continue to vaccinate.

4. Monitor resources and staffing needs.

g. Pandemic Over:

1. Assess local capacity to resume normal public health functions.

2. Assess local capacity to resume normal health care delivery.

3. Assess fiscal impact of pandemic response.

4. Report results of assessment to local government authorities.

5. Report results of assessment to DHMH.

C. State

1. Health and Mental Hygiene, Department of (DHMH)

a. Pre-Pandemic Phase:

1. Identify private and public sector partners in planning process. Foster coordination and participation among private and public sector partners in planning process.

2. Coordinate planning with Federal and other neighboring states. Coordinate pandemic influenza planning activities with other State efforts such as bioterrorism response planning.

3. Provide planning guidance to schools, hospitals, LTCFs, providers, clinics, pharmacies and others on preparing for and responding to an influenza pandemic.

4. Ensure the synchronization of response plans in Maryland.

5. Identify major gaps in current ability to effectively respond to an influenza pandemic; explore possible avenues for addressing and resolving gaps.

6. Maintain routine voluntary laboratory surveillance of influenza.

7. Improve and maintain virologic surveillance capabilities, including ability to isolate and to subtype influenza viruses, at levels sufficient to meet anticipated demand for such testing services during an influenza pandemic.

8. Expand existing sentinel physician network to include at least one physician per 250,000 persons.

9. Develop a surveillance system to detect influenza among international travelers to Maryland.

10. Maintain demographic statistics on Maryland groups at high risk for influenza or influenza-related deaths.

11. In conjunction with the Office of Chief Medical Examiner (OCME), develop and implement a mechanism for receiving timely information on influenza, pneumonia- or other respiratory infection-related causes of death.

12. Monitor bulletins and other pandemic information from Centers for Disease Control and Prevention (CDC) and World Health Organization (WHO) sources, especially to detect alerts about new virus variants and for changes in current recommendations for prevention and control of influenza.

13. Devise a strategy for vaccine distribution in such a way as to reduce morbidity, mortality and social disruption.

14. Devise procedures to secure and administer vaccine in Maryland.

15. Develop a system for antiviral adverse event reporting (AVAERS).

16. Estimate the number of hospitalizations that could be expected during a pandemic and determine the extent to which health care organizations might be overwhelmed.

17. Conduct an inventory of health care personnel including current and retired MDs, DOs, RNs and other nursing personnel, veterinarians, others with medical training (e.g., emergency medical technicians), and State national guard and other potential volunteers.

18. Determine sources from which additional staff could be acquired assuming hospitals are using much, if not all, available staff for their own needs. Define the extent of care that each type of provider can perform according to Maryland law.

19. Educate health care providers about appropriate infection control procedures for influenza as well as how to care for patients suffering from influenza and its complications.

20. Develop recommendations for use of masks, gloves and other infection control measures during a pandemic.

21. Advocate for health care providers' liability protection to extend to providing medical care in a non-traditional setting.

22. Examine existing legal authorities and evaluate their adequacy in event of a pandemic.

23. In accordance with Federal guidance, prepare drafts and/or standard templates of information documents including fact sheets for the general public and guidelines for health care providers on appropriate use of antiviral medications and vaccines.

24. Assemble and maintain database of contacts at Maryland hospitals, long term care facilities, LHDs, and DHMH facilities, to include at least the names and contact numbers of the following types of persons:

    - Infection Control Professionals
    - Laboratory Directors
    - Emergency Department Directors
    - Infectious Disease physicians
    - State EMS Medical Director, MIEMSS

b. Novel Virus Alert:

1. Notify LHDs and all appropriate partners and stakeholders of a novel virus alert.

2. Notify MEMA and MIEMSS of novel virus alert.

3. Continue to monitor bulletins from CDC or WHO regarding clinical, epidemiological and virologic characteristics of novel variant; disseminate to LHDs, stakeholders and partners.

c. Pandemic Alert:

1. Work with CDC to determine which groups are at high risk for morbidity and mortality.

2. Work with LHDs and private sector providers to ensure that identified high risk groups and others receive vaccine and antiviral medications, as appropriate.

3. Activate procedures to procure public sector vaccine. Store vaccine in pre-selected supply areas.

4. Obtain appropriate reagents from CDC to detect and identify the novel influenza strain.

5. Increase testing for influenza viruses, including pandemic strain(s), in specimens referred by LHDs from travelers to pandemic areas.

6. Send representative and unusual virus isolates to CDC for appropriate testing (to include antiviral resistance studies).

7. Activate routine surveillance systems for influenza (if pandemic alert occurs during non-influenza season).

8. Activate enhanced surveillance system to detect influenza among travelers from areas from which a novel influenza virus strain has been confirmed.

9. Continue to monitor bulletins from CDC or WHO regarding clinical, epidemiological, and virologic characteristics of novel variant, and update LHDs, stakeholders, and partners, as appropriate.

10. Review and revise as needed, drafts of public information documents (fact sheets and guidelines).

11. Prepare translated versions of major public information documents for non-English speaking persons.

d. Pandemic Imminent:

1. Notify all State agencies and other partners of the potential for an influenza pandemic in Maryland.

2. Continue to monitor bulletins from CDC or WHO regarding clinical, epidemiological, and virologic characteristics of novel variant and update LHDs, stakeholders, and partners.

3. Implement antiviral adverse event reporting system (AVAERS) data collection.

4. Coordinate surveillance activities and findings with other states and federal health agencies.

5. Participate in special studies as requested by CDC.

6. Maintain current listings of public-sector vaccine distribution sites within Maryland.

7. Review vaccine distribution plans with stakeholders and partners, and modify as needed.

8. Monitor availability and coordinate distribution and delivery of public-sector vaccines.

9. Request that OCME provide DHMH Laboratory with selected autopsy specimens for influenza testing.

e. Pandemic:

1. Institute control measures in accordance with CDC and other federal recommendations.

2. Ensure that the Emergency Operations Center (EOC) and key health officials are kept informed of all health and medical developments and decisions during pandemic.

3. Monitor response of DHMH units during pandemic; re-allocate resources as needed.

4. Monitor availability and coordinate distribution and delivery of public-sector vaccines.

5. Coordinate activities with other states and federal health agencies.

6. Continue to monitor bulletins from CDC and WHO regarding clinical, epidemiological, and virologic characteristics of novel variant, and update LHDs, stakeholders, and partners.

7. Coordinate the release of health information with MEMA and Public Information Officers (PIOs).

8. Monitor AVAERS weekly and transmit information to CDC so that unexpected adverse events can be detected early and antiviral recommendations altered according to federal recommendations.

9. Send selected influenza A isolates to CDC for antiviral resistance testing so that resistance prevalence can be estimated and appropriate antiviral use recommendations made.

10. Participate in special studies as requested by CDC.

f. "Second Wave"

1. Continue all activities listed under Pandemic phase.

2. Review, evaluate and modify as needed, the DHMH's pandemic response. Update MEMA.

3. Continue to procure vaccine.

4. Monitor resources and staffing needs.

g. Pandemic Over:

1. Summarize findings and report to Secretary, DHMH, on the epidemiological characteristics of the pandemic in Maryland and on the lessons learned.

2. Assess State capacity to resume normal public health function.

3. Assess State capacity to resume normal health care delivery.

4. Report results of assessment to Secretary, DHMH.

5. Discontinue AVAERS.

2. Maryland Emergency Management Agency (MEMA)

a. Pre-Pandemic Phase:

1. Develop a template for declaration of a public health emergency.

2. Maintain communication with DHMH.

3. Develop a program to facilitate routine, annual influenza vaccination of staff.

b. Novel Virus Alert:

1. Notify EOC representatives of novel virus alert.

2. Designate a contact person to receive further updates.

c. Pandemic Alert:

1. Review components of the Emergency Operations Plan (EOP) with DHMH.

2. Update EOC representatives.

3. Oversee communications with media.

d. Pandemic Imminent:

1. Consider activating EOC.

2. Consider obtaining declaration of public health emergency.

3. Oversee communications with media.

4. Consider delegating certain aspects of medical and technical information dissemination about the influenza pandemic to Secretary, DHMH.

e. Pandemic:

1. Activate EOC (if not already activated) and operate it as needed during pandemic.

2. Obtain declaration of public health emergency (if not already obtained).

3. Oversee communications with media.

4. Notify DHMH when EOC is deactivated.

f. "Second Wave":

1. Continue all activities listed under Pandemic phase.

2. Review, evaluate and assess impact of State pandemic response.

3. Monitor, bolster and redistribute resources as appropriate.

g. Pandemic Over:

1. Coordinate recovery efforts.

2. Coordinate damage assessment.

3. Coordinate needs assessment.

3. Maryland Institute for Emergency Medical Services Systems (MIEMSS)

a. Pre-Pandemic Phase:

1. Work with DHMH to improve routine annual vaccination of staff, EMS providers, and other emergency personnel throughout the State.

2. Develop vaccination program using EMS providers to administer vaccines.

3. Develop region-wide bed management plan.

4. Develop alternate means for transporting non-critically ill patients to medical facilities.

b. Novel Virus Alert:

1. Notify MIEMSS regional medical directors, jurisdictional and commercial EMS operational programs of novel virus alert.

2. Designate contact person to receive further updates from DHMH.

c. Pandemic Alert:

1. Review components of the Emergency Operations Plan (EOP) with DHMH.

2. Update MIEMSS regional medical directors, jurisdictional and commercial EMS operational programs.

d. Pandemic Imminent:

1. Notify EMS, emergency departments and hospitals to activate their influenza pandemic response plans.

2. Provide regular updates to DHMH about EMS and hospital-based bed system capacity.

e. Pandemic:

1. Monitor status of emergency facilities, hospital beds, other treatment sites, and medical equipment.

2. Coordinate the statewide system of emergency medical services, public safety (EMS operational program), and commercial ambulance services.

3. Apprise DHMH and MEMA of critical gaps in ability to provide emergency medical services.

f. "Second Wave":

1. Continue all activities listed under Pandemic phase.

2. Review, evaluate and modify as needed, pandemic response by MIEMSS. Update DHMH.

3. Monitor resources and staffing needs.

g. Pandemic Over:

1. Assess ability to resume normal provision of emergency medical services.

2. Report results of assessment to DHMH.

4. Other State Agencies

a. Pre-Pandemic Phase:

1. Encourage agency personnel to receive annual influenza vaccine.

2. Encourage agency personnel in identified high risk groups to receive pneumococcal vaccine.

3. Work within agency to develop contingency plans for large scale public health disasters like an influenza pandemic; provide a copy of plan to DHMH.

b. Novel Virus Alert:

1. Notify agency director that a novel influenza virus has been detected.

2. Designate an official contact person to receive updates from DHMH.

c. Pandemic Alert:

Continue all activities listed under Novel Virus Alert phase.

d. Pandemic Imminent:

Review contingency plans for large-scale public health disasters.

e. Pandemic:

1. Implement contingency plans for large-scale public health disasters.

2. Ensure designated agency contact available to receive updates from DHMH.

3. Provide regular updates to MEMA of gaps in agency services.

f. "Second Wave:

1. Continue all activities listed under Pandemic phase.

2. Review, evaluate and modify as needed, pandemic response by agency. Update MEMA.

3. Monitor resources and staffing needs.

g. Pandemic Over:

1. Assess ability to resume normal agency function.

2. Report results of assessment to agency director and to MEMA.

D. Private and Volunteer Organizations:

a. Pre-Pandemic:

1. Work to increase routine annual influenza vaccination coverage among employees and clients.

2. Work to increase pneumococcal vaccine coverage in recommended groups.

3. Develop contingency plans for large-scale public health disaster including an influenza pandemic in coordination with DHMH.

4. Make contact with local EOC, LHD and DHMH.

5. Identify essential staff and develop contingency plans for operations under prolonged staff shortages or shortages of other resources.

b. Novel Virus Alert:

1. Notify organization director that a novel virus has been detected.

2. Maintain contact with LHD for updated information.

c. Pandemic Alert:

1. Notify organization director of pandemic alert.

2. Maintain contact with LHD for updated information.

d. Pandemic Imminent:

1. Notify organization director that pandemic is imminent.

2. Maintain contact with LHD for updated information.

3. Review contingency plans and modify as necessary.

4. Consider or expand facility or institution-sponsored sick care services for the children of employees.

e. Pandemic:

1. Implement contingency plans.

2. Maintain contact with LHD for updated information.

f. "Second Wave":

Continue all activities listed under Pandemic phase.

g. Pandemic Over:

1. Assess ability to resume normal organizational function.

2. Maintain contact with LHD for updated information.

3. Report results of assessment to organization director and to MEMA, if appropriate.

E. Federal Government:

The agencies of the Federal government will assume primary responsibilities for the following activities or resources:

- Vaccine research and development
- Coordination of national and international surveillance efforts
- Assessment and enhancement of vaccine and antiviral supply and coordination of public sector procurement
- Liability protection for vaccine and antiviral manufacturers and for persons who administer vaccines and antiviral medications as part of an influenza pandemic response program
- Development of a national clearinghouse for vaccine availability information and coordination of vaccine distribution mechanisms at national level
- Development of a vaccine adverse effects surveillance system at the national level
- Development of a national information bank on the status of the pandemic, perhaps through the Internet
- Development of recommendations, guidelines, and information templates that can be adapted and used as needed at State and local levels
- Identification and announcements of the beginning and termination of the various phases of a pandemic

- Financial support for State relief efforts, including vaccine supply and administration costs

Appendix A. Estimates of the Health Impact of Pandemic Influenza on Maryland, 1999

Health Impact	Estimated Number of Persons in Maryland[‡] (Range)[§]	
Outpatient Visits	Total: 680,002 (408,002 – 952,003)	High risk: 108,800 (65,280 – 152,320)
		Non-high risk: 571,202 (342,722 – 799,683)
Hospitalizations	Total: 14,833 (8,899 – 20,767)	High risk: 4,302 (2,581 – 6,022)
		Non-high risk: 10,531 (6,318 – 14,745)
Deaths	Total: 3,320 (1,991 – 4,647)	High risk: 2,756 (1,653 – 3,857)
		Non-high risk: 564 (338 – 790)

Reference: Meltzer MI, Cox NJ, Fukuda K. The economic impact of pandemic influenza in the United States: Priorities for intervention. Emerging Infectious Diseases 1999;5:659-671.

[*] Persons are categorized at high risk if they have a pre-existing medical condition that makes them more susceptible to influenza-related complications.

[‡] Estimated number of persons is calculated using most likely number with a 25% gross attack rate.

[§] Range is calculated using most likely number with 15% and 35% gross attack rates. Maryland population is estimated at 5,094,289 using 1999 census data.