MARYLAND DEPARTMENT OF HEALTH

Pandemic Influenza Annex

Version 7.3
February 2025

Letter of Promulgation

Under the powers vested in me, I approve and promulgate the "Maryland Pandemic Influenza Annex." This plan denotes the concept of operations and roles and responsibilities of State agencies regarding an incident wherein multiple agencies would coordinate to support a Maryland response to pandemic influenza.

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Acting Secretary
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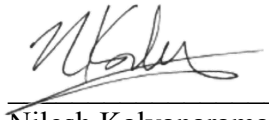

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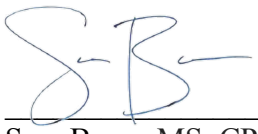

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RECORD OF CHANGES

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Acronym List

ACIP	Advisory Committee on Immunization Practices
APHIS	Animal and Plant Health Inspection Service
CDC	Centers for Disease Control and Prevention
COMAR	Code of Maryland Regulations
EIP	Emerging Infections Program
EMAC	Emergency Management Assistance Compact
EMSOP	Emergency Medical Services Operational Programs
FAERS	FDA Adverse Event Reporting System
FDA	Food and Drug Administration
HAN	Health Alert Network
HHS	U.S. Department of Health and Human Services
HPAI	Highly Pathogenic Avian Influenza
HSEEP	Homeland Security Exercise and Evaluation Program
ICS	Incident Command Structure
IDEORB	Infectious Disease Epidemiology and Outbreak Response Bureau
IFA	Immunofluorescence Assay
ILI	Influenza-Like Illness
IHC	Immunohistochemistry
JIS	Joint Information System
LABS	Maryland Department of Health Laboratories Administration
LHD	Local Health Department
MSP	Maryland State Police
MDH	Maryland Department of Health
MDEM	Maryland Department of Emergency Management
MEMAC	Maryland Emergency Management Assistance Compact
MIEMSS	Maryland Institute for Emergency Medical Services System
DNR	Maryland Department of Natural Resources
NPI	Non-Pharmaceutical Interventions
NVAC	National Vaccine Advisory Committee
PCR	Polymerase Chain Reaction
PHE	Public Health Emergency
PODS	Points of Dispensing
PPE	Personal Protective Equipment
PSAF	Pandemic Severity Assessment Framework
PUI	Persons Under Investigation
SEOC	State Emergency Operations Center
SNS	Strategic National Stockpile
VAERS	Vaccine Adverse Event Reporting System
USDA	US Department of Agriculture
WHO	World Health Organization

I. Plan Goals and Objectives

A. Goals

- Reduce morbidity and mortality within the State related to an influenza pandemic;
- Mitigate the spread of the disease; and
- Sustain infrastructure likely to be impacted by the pandemic.

B. Objectives

- Ensure all reasonable measures are taken to limit the spread of the pandemic within the State;
- Establish comprehensive and credible preparedness and response capacity with plans that are exercised regularly;
- Establish state and local stockpiles of supplies and distribution systems to support a pandemic response;
- Identify key spokespersons and ensure coordinated crisis communications plans;
- Provide response partners and the public with information and education on pandemic influenza and treatment and prevention interventions.

II. Overview

A. Purpose

The *Maryland Department of Health Pandemic Influenza Annex* provides a framework for coordinating local, state, and federal efforts to prevent, control, and stop the spread of a pandemic influenza. This plan, housed within the Infectious Disease Response Plan, provides operational guidance for the Maryland Department of Health (MDH), supporting agencies, and partners during an influenza pandemic. It will specifically address pandemic influenza response planning processes, procedures, and policies during all pandemic stages.

B. Scope

A pandemic response is primarily a public health response, and many agencies (including local government and local health departments), organizations, and private institutions must collaborate to ensure its effectiveness.

C. Situation

<u>Background</u>

An influenza pandemic is a global outbreak of a novel influenza A virus different from current and recently circulating human seasonal influenza A viruses. Influenza A viruses are constantly changing, making it possible that, on a rare occasion, they can mutate in such a way as to transmit from infected individuals efficiently and easily. There have been four major outbreaks in

the 20th and 21st century collectively: H1N1 in 1918, H2N2 from 1957 to 1958, H3N2 in 1968, and H1N1pdm09 in 2009.[1]

Transmission

Flu viruses mainly spread from person to person through droplets from an infected person's cough, sneeze, or talking (less than 6 feet).[2]

Clinical characteristics

The flu often presents symptoms such as fever, cough, chills, sore throat, runny or stuffy nose, muscle or body aches, headaches, fatigue, vomiting, or diarrhea.[3]

Vaccination and Treatment

Antiviral medications may be used as a treatment for the illness. The United States Government maintains a stockpile of some pre-pandemic flu vaccines. However, during a pandemic, stockpiled antivirals may be in short supply. Vaccines may not be widely available during the early stages of the pandemic, and most persons may require multiple doses.[4]

Risk categories and triggers

Due to the category of the virus (a new virus not previously circulating in humans), it is impossible to predict who would be most at risk of severe complications prior to a pandemic. In past pandemics, even young, healthy adults were at risk.[5]

D. Planning Assumptions and Considerations

The development of the *Maryland Department of Health Pandemic Influenza Annex* is based on the following assumptions provided by the Centers for Disease Control and Prevention (CDC) and the U.S. Department of Health and Human Services (HHS):

- An influenza pandemic is likely to occur in the future. Efficient and sustained person-to-person transmission signals an imminent pandemic;
- People may be asymptomatic while infectious;
- There may be simultaneous or near-simultaneous outbreaks in communities across the U.S., thereby limiting the ability of any jurisdiction to provide support and assistance to other areas;
- There will likely be enormous demands on the healthcare system;

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[1] CDC (Ed.). (2018, August 10). *Past Flu Pandemics*. Centers for Disease Control and Prevention. https://www.cdc.gov/flu/pandemic-resources/basics/past-pandemics.html
[2] CDC (Ed.). (2019, May 7). *How is pandemic flu different from seasonal flu?*. Centers for Disease Control and Prevention. https://www.cdc.gov/flu/pandemic-resources/basics/about.html
[3] CDC (Ed.). (2022, October 3). *Flu symptoms & complications*. Centers for Disease Control and Prevention. https://www.cdc.gov/flu/symptoms/symptoms.htm
[4] CDC (Ed.). (2019, May 7). *How is pandemic flu different from seasonal flu?*. Centers for Disease Control and Prevention. https://www.cdc.gov/flu/pandemic-resources/basics/about.html
[5] CDC (Ed.). (2019, May 7). *How is pandemic flu different from seasonal flu?*. Centers for Disease Control and Prevention. https://www.cdc.gov/flu/pandemic-resources/basics/about.html

- Delays and shortages in the availability of vaccines and antiviral drugs are to be expected, and
- There is a large potential for the disruption of national and community infrastructures, including transportation, commerce, utilities, and public safety, due to widespread illness and death among workers and their families and concern about ongoing exposure to the virus.[6]

E. Infection Control and Clinical Guidelines

Infection control precautions are measures to reduce the transmission and acquisition of infectious agents, including pandemic influenza. Infection control precautions typically practiced by healthcare workers include:

- Proper hand hygiene
- Scrupulous work practices
- Use of Personal Protection Equipment (PPE), including masks, respirators, gloves, gowns, and eye protection
- Social Distancing

The type of infection control precautions instituted are based on the type of infection that the patient or source has and includes the following:

- Standard
- Contact
- Droplet
- Airborne

Based on the current understanding of influenza virus transmission, MDH recommends full barrier infection control precautions (contact and airborne precautions plus eye protection) and standard precautions for healthcare workers caring for known or suspected avian or pandemic influenza-infected patients.

Although developed for use in healthcare facilities, infection prevention and control measures[7] can be modified for the general public in other settings such as workplaces, schools, daycare centers, and homes. Infection control precautions will be critical in slowing and minimizing the transmission of pandemic influenza.

[6] U.S. Department of Health and Human Services (Ed.). (2005, November). HHS Pandemic Influenza Plan. https://www.cdc.gov/flu/pdf/professionals/hhspandemicinfluenzaplan.pdf
[7] Centers for Disease Control and Prevention (2024, August). Healthy Habits to Prevent Flu. https://www.cdc.gov/flu/prevention/actions-prevent-flu.html

III. Concept of Operations

A. Preparedness

Effective preparedness includes establishing plans, policies, and procedures; training and exercising periodically to identify gaps; acquiring adequate resources to be available during a response; and creating risk communication messages and protocols.

General Activities

- Develop, exercise, and update the pandemic influenza annex to include all applicable annexes and supporting agency response plans;
- Train, equip and maintain sufficient public health personnel to ensure competencies and capacities needed to respond to a pandemic influenza emergency;
- Develop strategic partnerships with local community healthcare partners and providers along with local, state, and federal response agencies and their staff;
- Assess surveillance and reporting procedures and strategies ensuring ongoing capability to detect influenza-like illness (ILI) patterns in the population;
- Educate stakeholders about pandemic influenza and recommend protective measures;
- Establish a comprehensive Risk Communications Plan that builds upon the MDH Public Information Communication Plan to address pandemic influenza, to include pre-written media templates and other risk communication tools that may be utilized by partners, to include local health departments;
- Inform and update stakeholders about the potential impacts of a pandemic influenza outbreak or emergency on essential services and city, county, and school infrastructure;
- Stockpile necessary equipment and supplies required to respond to a pandemic influenza emergency;
- Maintain contact systems at each local health department (LHD), as well as epidemiology, laboratory, planners, and informatics teams at MDH, for availability on a 24/7/365 basis; and,
- Document and update all emergency contact information and systems regularly within specified locations of local and state communication networks.

Reportable Conditions

Reporting known or suspected novel influenza cases to public health authorities in Maryland protects the public's health by ensuring the proper identification and follow-up of cases. Public health workers at both local and state levels follow individual cases, ensuring appropriate treatment, identifying potential sources of infection, and providing education to reduce the risk of transmission, identify susceptible contacts, and take other measures to reduce the spread of the disease.

Additionally, Maryland Code Health-Gen §§ 18-201, 18-202, and 18-205 and the Code of Maryland Regulations 10.06.01.03 require the health care providers, clinical laboratories, health care facilities, and others to report specific disease conditions to local and state health authorities.

A list of reportable diseases and conditions in Maryland may be found at:
https://phpa.health.maryland.gov/IDEHASharedDocuments/ReportableDiseas

e_HCP.pdf.

To report an infectious disease that endangers public health as designated by MDH as reportable, download the Maryland Confidential Morbidity Report (MDH 1140) at: https://phpa.health.maryland.gov/Pages/what-to-report.aspx.

The Maryland Department of Agriculture is responsible for investigating animal diseases. MDH and LHDs investigate and control zoonotic disease (i.e. disease caused by germs that spread between animals and people). LHDs are required to report zoonotic disease to MDA per Md. Code Agriculture § 3-104.

Veterinarians are required to report data relating to contagious or infectious disease among livestock or poultry to MDA within 48 hours under Md. Code Agriculture § 3-104 and specified illnesses or symptoms in animal populations to MDH under Md. Code Health-Gen. §18-904(b)(6).

B. Response

1. Framework

Pandemic Intervals Framework

The Pandemic Intervals Framework (PIF) guides pandemic planning and makes recommendations through six intervals. Each of the six pandemic intervals may vary in duration depending on the circulating strain and public health response; each interval describes a stage of a circulating viral strain in the public, the public health activities usually taken, and what public health actions for the general public should be considered. The intervals are as follows (more information in Appendix A):

1. Investigation of cases of novel influenza;
2. Recognition of increased potential for ongoing transmission;
3. Initiation of a pandemic wave;
4. Acceleration of a pandemic wave;
5. Deceleration of a pandemic wave; and,
6. Preparation for future pandemic waves.

Progression through the intervals is not exclusively linear and is meant to enable jurisdictions to respond with appropriate actions for the activity level occurring in their regions. These intervals provide a common orientation and epidemiological picture of pandemic activity to inform interventions. The intervals are flexible enough to accommodate the variable spread of a pandemic in different areas, allowing appropriate local, state, and federal actions for jurisdiction-specific conditions. In addition, state and local health authorities can elect to implement interventions at different times within their jurisdictions, starting with communities that are first affected and then progressing to others. Due to the independent operational nature of the CDC intervals, its indicators and resulting actions may not always align with other national entity frameworks, like the World Health Organization (WHO). Table B.1 provides an illustrative example.

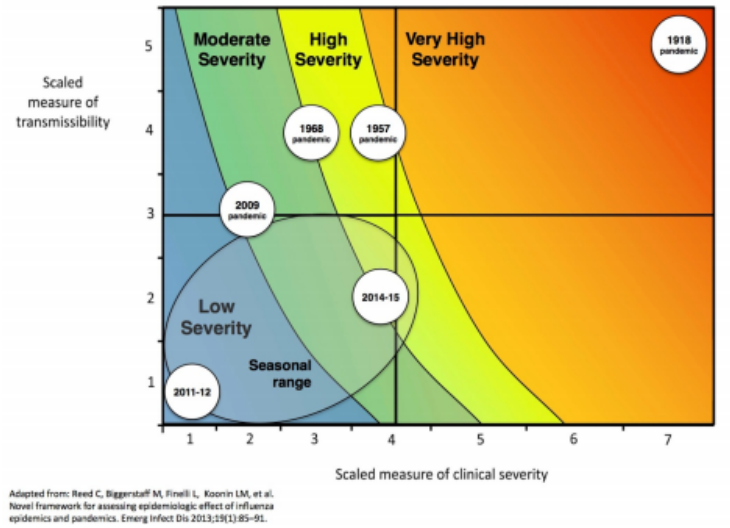
Table B.1. Comparison of WHO and CDC pandemic phases.

World Health Organization phases	CDC intervals
Pandemic phase: Global spread of human influenza caused by a new subtype	**Initiation** of a pandemic wave
	Acceleration of a pandemic wave
	Deceleration of a pandemic wave
Transition phase: Reduction in global risk, reduction in response activities, or progression toward recovery actions	**Preparation** for future pandemic waves

Pandemic Severity Assessment Framework

When a novel influenza virus has emerged and circulated in human populations with efficient and sustained transmission, the public health impact posed by the pandemic can begin to be assessed. The Pandemic Severity Assessment Framework (PSAF) uses information from surveillance, investigations, initial case series, and other sources to predict the current pandemic viral strain(s) severity compared with past seasonal and pandemic experiences. PSAF focuses on epidemiologic parameters of transmissibility and severity after the virus emerges with efficient and sustained transmission in humans. The system is based on transmissibility and clinical severity parameters and uses different scales for initial assessments and more refined appraisals as additional data becomes available.

Figure B.2. Two-dimensional chart used to plot results of assessment using the Pandemic Severity Assessment Framework (PSAF)



Adapted from: Reed C, Biggerstaff M, Finelli L, Koonin LM, et al. Novel framework for assessing epidemiologic effect of influenza epidemics and pandemics. Emerg Infect Dis 2013;19(1):85–91.

The initial assessment, performed early in the outbreak when data about the strain is limited, uses a low-to-moderate versus moderate-to-high transmissibility scale and clinical severity. PSAF results can be compared with historical data, such as previous pandemics or particularly severe influenza seasons. Additionally, the system can be updated as the pandemic progresses.

2. Criteria for Assessing and Reporting Possible Pandemic Influenza Cases

Assessment

Criteria for assessment may need to be modified throughout the pandemic phases according to the circulating virus and the known epidemiology of the infection at that time.

Reporting

Maryland's year-round influenza surveillance systems will assist the state in rapidly detecting pandemic influenza. During the early stages of a pandemic, surveillance activities may be intensified through extensive case investigations and contact tracing to rapidly detect initial cases of novel influenza virus and track identified cases. The state will work with LHDs to ensure enhanced surveillance activities occur in the early stages of the pandemic.

Once pandemic influenza has been confirmed in Maryland, individual case reporting will likely not be feasible. Surveillance will focus on data collection mechanisms to assess morbidity and mortality during the pandemic. Tracking the number of pandemic influenza-associated deaths during this period will be necessary. In addition, select individual case investigations may need to be conducted to guide prevention and control recommendations.

Once a novel strain detected abroad exhibits sustained human-to-human transmission (WHO Phase 6), recommendations for further intensified virologic and disease surveillance will be issued. These include enhanced disease surveillance at ports of entry.

Clinicians should immediately contact MDH when they suspect a human case of infection with an avian or animal strain of influenza or with any other novel human influenza strain. The clinical guidelines in this plan provide clinical algorithms for managing patients with possible novel influenza infections.

MDH will, in turn, immediately report to the CDC any influenza cases that:

- Test positive for a novel influenza subtype *or*
- Meet the enhanced surveillance case definition in effect at that time *and*
- The case cannot be subtyped in the state public health laboratory because appropriate reagents or biocontainment equipment is unavailable.

3. Notification

The WHO will notify the CDC and other health agencies regarding new pandemic influenza strains. The CDC will then guide MDH and other states about pandemic stages, information about the virus, vaccine availability, recommendations for vaccine and antiviral/antibiotic administration and availability, national response coordination, and other recommended strategies for pandemic detection, control, and response. MDH will be the main dissemination point for its Local Health Departments (LHDs) and other associated healthcare partners.

The LHDs are the primary point of contact for confirmed or suspected cases of reportable disease. Each LHD is required to maintain a 24/7/365 contact system. The LHD communicable disease staff, under the authority of the local health officer, will collect preliminary information on the infectious disease outbreak and notify the MDH Infectious Disease Epidemiology and

Outbreak Response Bureau (IDEORB) within 24 hours of the outbreak report or immediately for diseases noted in the MDH Policy on Outbreak Investigation. The MDH IDEORB is responsible for informing other MDH units, states, the CDC, and other federal agencies of significant outbreaks and other LHDs as needed.

MDH assists LHDs when local resources are exhausted. Additionally, MDH will maintain constant situational awareness communication with LHDs during a pandemic influenza event. Communications with the LHDs may be conducted in various ways, including web-based conference calls, HAN messaging, or other appropriate avenues.

The public health response to an infectious disease most often starts at the local level. However, an infectious disease emergency resulting from a case or cases of a novel or unidentified infectious disease, a large number of cases or rapid spread, a particularly virulent or contagious disease, or spread across multiple jurisdictions or states will likely require state support from the MDH.

The Maryland Secretary of Health is responsible for investigating and controlling infectious disease outbreaks, pursuant to Md. Code Ann., Health-General § 18-101 and §18-102. The Code of Maryland Regulations (COMAR) 10.06.01 delegates this responsibility to local health officers, as described in COMAR.

Federal assistance will be required for any infectious disease incident considered a possible act of bioterrorism, as well as any infectious disease emergency that involves multiple states or countries or a particularly virulent disease such as pandemic influenza. A prolonged or intense infectious disease emergency response may require a presidential disaster declaration.

4. Public Health Surveillance and Epidemiological Investigation

The goals of routine infectious disease surveillance and investigation are to:

- Detect disease, initiate case and contact investigations, and determine the source of pandemic influenza by reportable conditions, reporting requirements, and recommendations;
- Ensure early detection of clusters of the disease that might signal an outbreak; and,
- Inform and assist local, state, and federal agencies involved in detecting, investigating, and controlling the pandemic influenza, including monitoring the effectiveness of interventions.

MDH and LHDs use several platforms to conduct infectious disease surveillance and thus monitoring of pandemic influenza. For an entire list of monitoring platforms, see *Maryland Infectious Disease Response Plan.*[8]

Pandemic influenza surveillance includes surveillance for influenza viruses (virologic surveillance) and surveillance for influenza-associated illness, hospitalizations, and deaths (disease surveillance). Information compiled includes laboratory testing data, nosocomial outbreak reports, influenza-like illness by age group, hospitalizations, and pediatric deaths. These routine systems could be enhanced during an influenza pandemic.

[8] Maryland Department of Health (2019). *Maryland Infectious Disease Response Plan*

Virologic Surveillance

The Maryland Department of Health Laboratories Administration (LABS) uses PCR to detect novel influenza viruses. If the results are positive, they are sent to the CDC for confirmatory testing.

Outpatient Surveillance

Outpatient surveillance for influenza in Maryland includes the sentinel provider network and syndromic surveillance. 68 healthcare providers across Maryland participate in this network, a collaborative effort among state health departments, healthcare providers, and CDC. During the influenza season, October through May, these healthcare providers voluntarily report the number of weekly outpatient visits for influenza-like illness (ILI) by age group. This data, analyzed weekly, assesses ILI morbidity in the outpatient setting. CDC develops and maintains reporting materials and systems, which serve as a data repository and provide feedback to the states.

Hospital and Healthcare Facility Surveillance and Reporting

- Emerging Infections Program (EIP) project is a collaboration between 12 state health departments, academic institutions, and other key public health stakeholders that builds on national surveillance and notifiable disease reporting by collecting more extensive data on disease characteristics and risk factors to inform public health action directly. EIP translates surveillance and research activities into informed policy and public health practice to address emerging infections.[9]
- Electronic Surveillance System for the Early Notification of Community-Based Epidemics (ESSENCE) is a web-based biosurveillance tool to monitor public health issues such as disease outbreaks or other events, such as severe weather. The platform is for aiding healthcare and public health entities in decision-making processes.[10]
    - For example, ESSENCE collects information about illnesses in Maryland emergency room patients. Visits are grouped into syndromes, including febrile and respiratory syndrome, to categorize clinical presentations of patients seeking medical care in hospital emergency rooms.

Mortality Surveillance

Maryland participates in national tracking of deaths of persons under 18 years of age who had a positive influenza test during their course of illness leading to death.[11] Both influenza-associated pediatric mortality and novel influenza A virus infection are reportable diseases per COMAR 10.06.01.03.

[9] CDC (Ed.). (2024, January 4). *CDC - Emerging Infections Program (EIP) - DPEI - NCEZID*. Centers for Disease Control and Prevention. https://www.cdc.gov/ncezid/dpei/eip/index.html

[10] Burkom, H., Loschen, W., Wojcik, R., Holtry, R., Punjabi, M., Siwek, M., & Lewis, S. (2021, June 21). *Electronic surveillance system for the early notification of community-based epidemics (essence): Overview, components, and Public Health Applications*. JMIR public health and surveillance. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8277331/

[11] MDH FluWatch, Maryland Influenza Surveillance 2024-2025 Season (2025, February 7). https://health.maryland.gov/phpa/influenza/Pages/flu-dashboard.aspx

Influenza-associated adult mortality is not a reportable condition in Maryland. However,surveillance for mortality in hospitalized adults is conducted and reported. MDH also reports deaths due to or with an underlying cause in its mortality reporting.[12]

Industry Surveillance

In Maryland, the Maryland Department of Agriculture (MDA) and the poultry industry conduct surveillance for avian influenza in poultry. Diagnostic testing is performed by MDA and industry laboratories, with confirmatory testing by the U.S. Department of Agriculture (USDA). Surveillance for avian influenza among wild birds is the responsibility of the Maryland Department of Natural Resources (DNR). Should there be an outbreak of avian influenza within a facility, MDH/LHDs will monitor and ensure access to prophylaxis to potentially exposed persons, including workers, or ensure they are managed appropriately.

State-level Assessment of Influenza Activity

Maryland provides the CDC weekly assessments of the overall level of influenza activity (i.e. none, sporadic, local, regional, or widespread) in the state. These assessments are used to compare the extent of influenza activity from state to state.

5. Case Identification and Investigation

- Before starting case screening and investigations, a case definition and, as appropriate, case classifications (e.g., confirmed, suspected, or probable cases) must be established. As more information is gathered about the disease and the situation, case definitions and classifications may change depending on the sources of the pandemic.
- Screening a population at risk for disease can identify persons potentially infected or infectious with pandemic influenza.
- Screening techniques, including laboratory testing, vary depending on the disease.
- In a public health emergency (PHE), surveillance can be enhanced by changing methods used to screen at-risk persons (e.g., use of more or less specific screening criteria), screening of health care workers, screening of visitors and patients in health care facilities, and screening of departing and arriving travelers.
- Collecting standardized screening data is critical for consistently implementing public health interventions and epidemiologic analysis.
- Investigations that involve direct contact with potentially infected persons should always be conducted using appropriate personal protective equipment and infection control protocols.
- Case investigation may require collection of data from multiple sources, which may include:
    - Patient interviews;
    - Interviews with patient proxies;
    - Medical record review;
    - Employment records and workplace information;
    - Transportation records such as flight passenger manifests and,
    - Information from other agencies and partners.

[12] MDH FluWatch, Maryland Influenza Surveillance 2024-2025 Season (2025, February 7). https://health.maryland.gov/phpa/influenza/Pages/flu-dashboard.aspx

Data elements in a case reporting form should include, at a minimum:

- Case demographics and contact information;
- Clinical information symptoms and their dates of onset;
- Possible sources of exposure for the case-patient;
- Risk factors that make the case more likely to transmit the infection to other people, including whether the case spends time in high-risk settings (e.g., daycare, patient care, food service);
- Contacts and travel during infectious period, including dates and locations;
- Laboratory data; and,
- Case classification.

Case investigation data collected at the local and regional levels should be directed to IDEORB. Case data should be entered into a standard case report or investigation form developed or modified for the specific situation provided by MDH.

6. Source Investigation

Attempts to identify the source of an influenza pandemic may include epidemiologic studies, environmental sampling and testing, clinical specimen collection and testing, review of plans or protocols, and review of logs or documentation of routine processes. Resources may be deployed at the local, state, or federal level to conduct these activities.

Investigation of potential sources of infection in a PHE may require collaboration among multiple agencies. State and local health departments will collaborate with agencies appropriate to the threat's nature. Partner agencies should be cooperative and willing to disclose relevant information during such investigations to identify the s, intervene, and implement appropriate control measures.

7. Contact Investigation and Management

The LHDs will lead contact investigations with the assistance of the MDH staff and other agencies as needed, especially if multiple jurisdictions are involved. Contact investigations are extremely resource intensive, and pre-event planning should identify and/or train investigative teams with personnel experienced in:

- Contact tracing;
- Interviewing;
- Data management; and,
- Evaluation and monitoring of contacts.

Identification of contacts may include:

- Members of the case’s household, workplace, social network, and others who might be able to provide identifying and location information;
- Mass gatherings and public spaces or events (i.e., schools, malls, concerts, churches, etc.); and
- Vessels for transportation (i.e., trains, planes, ships, etc.).

Depending on existing information, collection tools for gathering contact information will likely be developed ad hoc. For example, an existing case investigation form may collect the same information from contacts.

8. Monitoring Potentially Exposed Persons

The LHD, in coordination with MDH, assumes responsibility for establishing and maintaining communication with potentially exposed people in accordance with guidance issued by the CDC and the MDH. Monitoring is intended to prevent pandemic influenza from spreading by ensuring that monitored persons receive appropriate health care if they develop symptoms and are tested.

Local and state health department responsibilities may include, but are not limited to:

- Establishing contact with potentially exposed persons and verifying contact information and addresses:
- Establishing a process to obtain information such as symptoms and travel plans during the monitoring period;
- Confirming details of potential exposure, including the date of last contact with a symptomatic individual;
- Contacting monitored individuals with a frequency appropriate to the risk level, type of exposure, and disease of concern (e.g., pandemic influenza);
- Coordinating the transfer of monitoring responsibilities to the appropriate jurisdiction if the monitored individual is traveling during a monitoring period;
- Coordinating with MDH, health care facilities, and other stakeholders to arrange health care evaluations if the monitored individual becomes symptomatic;
- Conducting home visits of monitored individuals lost to follow-up during the monitoring period; and,
- Recording information using tools provided by the CDC or the MDH and entering data into a line list or database provided by the MDH.

Types of Monitoring

- Active monitoring - the monitored individual reports symptoms status to the public health authority on a regular basis.
- Direct Active Monitoring- the public health authority directly observes the monitored individual to regularly review symptom status and monitor health.
- Self-Monitoring - the monitored individual observes his or herself for possible symptoms consistent with pandemic influenza. There is no regular contact with the public health authority.

Symptomatic Potentially Exposed Persons

Any individual with possible symptoms consistent with the pandemic influenza should be reported to the MDH. The LHDs, the MDH, and other stakeholders will arrange for health care evaluations as appropriate. These individuals are referred to as persons under investigation (PUIs).

PUIs should be referred to pre-identified facilities capable of isolating and potentially treating

them. Anyone needing emergency medical treatment should immediately report to the nearest emergency facility.

Management of Close Contacts

Close contacts include a patient's family, friends, colleagues, classmates, fellow passengers, and/or healthcare providers. Contact management might consist of self- or active monitoring without quarantine. Quarantine should be implemented only when there is a high probability that the ill patient is infected with a novel influenza strain that may be transmitted to others.

9. Containment of Small Clusters of Infection

This intervention includes investigating disease clusters, administering antiviral treatment to persons with confirmed or suspected pandemic influenza and providing drug prophylaxis, as available, to all likely exposed persons in the affected community.

10. Transition from Case-Based to Community-Based Interventions

Community-based interventions will be considered if:

- The spread of the disease is no longer limited to known chains of transmission but instead has evolved into community transmission where not all contacts can be traced.
- Continued contact tracing is impossible or impractical
- Mass gatherings pose a risk of furthering the spread of the disease
- There is a risk of spread of the disease within or between communities

11. Community-Wide Infection Control Measures

All persons with signs and symptoms of a respiratory infection will be encouraged to practice infection control practices to prevent exposure of contacts to respiratory secretions. Persons at high risk for complications of influenza will be advised to avoid public gatherings, including public areas such as food stores and pharmacies.

12. Epidemiologic Surge Capacity

If a novel strain of influenza capable of person-to-person transmission is suspected in Maryland, staff may need to be mobilized quickly to conduct surveillance activities, outbreak investigations, contact tracing, and control measures. If additional support for LHDs is required, qualified staff from MDH may be utilized.

Local and state staff serving in any public health role may be mobilized to support field surveillance. Just-in-time training covering case investigations, contact tracing, and control measures will be provided.

Once an influenza pandemic has been confirmed, public health epidemiologic resources may o be diverted from intense case investigation and contact tracing to track the geographic

distribution of illness, calculate the morbidity and mortality, and determine the overall epidemiology of the outbreak.

13. Public Health Laboratory Testing

Collaboration between the MDH LABS Office of Laboratory Emergency Preparedness and Response and IDEORB ensures the ability to receive notification of urgent lab testing requirements and coordinate the arrival of specimens needing immediate actions 24/7/365. Additionally, the LABS maintains an on-call schedule 24/7/365.

Unless other arrangements are made, specimen collection and testing will be coordinated between LHDs and the MDH. Many specimens may be collected at the start of an outbreak or emergency to characterize the pathogen better. The CDC and the MDH will provide specific specimen collection and packaging guidance.

MDH IDEORB will notify the LABS of incoming specimens, special instructions, and other pertinent information related to specimens arriving at the LABS.

Local laboratories should familiarize themselves with their capabilities. Laboratory processing may change depending on the characteristics of the pandemic strain; laboratories should plan to surge testing capacity accordingly. The LABS Administration will communicate with the CDC and forward samples and isolates for confirmatory testing when appropriate. Tests for influenza virus include viral culture, polymerase chain reaction (PCR), rapid antigen testing, and immunofluorescence. Serologic tests are used to diagnose infection retrospectively.

CDC's Interim Guidance on Testing and Specimen Collection for Patients with Suspected Infection with Novel Influenza A Viruses with the Potential to Cause Severe Disease in Humans Testing Procedures for Laboratory Personnel:
https://www.cdc.gov/bird-flu/php/severe-potential/index.html

14. Non-Pharmaceutical Interventions

Non-pharmaceutical interventions (NPIs) are non-medical strategies and recommendations for reducing the spread of infectious diseases by decreasing contact between uninfected and infected individuals. Strategies may include personal hygiene, other protective measures, and social distancing measures (e.g., canceling events, closing facilities, travel advisories, movement restrictions, isolation, and quarantine). NPIs may be recommended or required, focusing on individuals, families, or entire communities.

NPIs may be critical in preparing for, responding to, and recovering from an outbreak or infectious disease emergency, especially if vaccine and antimicrobial or antiviral drugs are unavailable, in limited supply, or ineffective. The timely adoption of NPIs is expected to reduce the transmission of infectious diseases and limit morbidity and mortality rates. The MDH and LHDs must use a combination of surveillance, laboratory testing, epidemiological data, and clinical data to identify the most appropriate NPI measures and populations at risk to minimize the disease and the disruption to the community.

NPI measures may include social distancing recommendations, limiting non-essential travel, and quarantine. For a list of recommendations and potential NPI implementations for a pandemic influenza outbreak, consult the *Maryland Infectious Disease Response Plan.*[13] For additional information clarifying authority and enforcement issues, consult Tables 1 and 2, respectively, within the *Maryland Infectious Disease Response Plan*.[14]

15. Pharmaceutical Interventions / Medical Materiel

Antiviral Procurement, Distribution, and Use

The HHS and the National Vaccine Advisory Committee (NVAC), in cooperation with the CDC and the Advisory Committee on Immunization Practices (ACIP), will provide guidance on prioritization during a pandemic based on the characteristics of the virus and populations most likely to be impacted.

Mass Vaccine Procurement, Distribution, and Use

Once available, a vaccine against the circulating pandemic virus strain will be the major focus of pandemic response efforts. Ensuring rapid, efficient, and equitable vaccine distribution is central to pandemic planning to reduce morbidity and mortality. Supplies are likely to be limited during the early stage of the pandemic with more availability over time.

Vaccine Procurement and Distribution

Vaccine administration is central to responding to an influenza pandemic. However, when an effective vaccine is being developed and produced in sufficient quantities, there may be significant morbidity and mortality rates.

The federal government is assumed to control the supply of vaccines in the United States, but states are responsible for vaccine distribution. MDH will use the Strategic National Stockpile (SNS) plan to determine the distribution of a vaccine to local health departments and health care providers for administration to the public.

Cold Chain and Distribution

MDH can maintain vaccines at refrigerated, cold, and ultracold temperatures. Once vaccines are delivered to the vaccinating LHD, the LHD must store, care for, and disseminate them appropriately.

Vaccine Adverse Event Monitoring and Reporting

National surveillance for adverse events following immunization is routinely conducted through the Vaccine Adverse Event Reporting System (VAERS), managed jointly by the CDC and FDA. VAERS acts as an early warning system for safety concerns regarding vaccines. While healthcare professionals are required to report to VAERS, anyone can access and report to the system. During a pandemic, VAERS would remain the major reporting mechanism.

[13] Maryland Department of Health (2019). *Maryland Infectious Disease Response Plan*. p.18
[14] Maryland Department of Health (2019). *Maryland Infectious Disease Response Plan*. p. 20

Serious adverse events associated with using antiviral influenza drugs shall be reported to the FDA using the Med Watch monitoring program. (https://vaers.hhs.gov/reportevent.html).

The FDA's Adverse Event Reporting System (FAERS) collects and analyzes adverse events reported to Med Watch. (https://www.fda.gov/safety/medwatch-fda-safety-information-and-adverse-event-reporting-program).

16. Communication

Continual communications with appropriate stakeholders ensures the sharing of information and the development of effective response tactics.

Pre-event communications will alert the general public on how best to prepare for a pandemic. During a pandemic, timely and accurate communication with the public will help with cooperation and compliance regarding public health actions. Prevention and mitigation messages will be communicated using traditional media, the Internet, and public displays (i.e., posters). In each case, messages will be translated into appropriate languages, ensuring cultural appropriateness.

Effective communication from trusted officials (medical personnel, elected officials, clergy, and others) is critical throughout the various stages of control. The Secretary of MDH, or designee, will be the primary spokesperson regarding emergency health issues related to pandemic flu. All interventions intended to control the spread of disease will require voluntary support from all community groups, individuals, businesses, and institutions. There may also be a substantial number of worried well and those who anticipate that vaccine distribution will be imminent and end the pandemic. Regular, honest, and substantive information and guidance from trusted officials are imperative for the effective management of a pandemic.

Information Release and Joint Information System

During a pandemic, MDH will facilitate expedited review and clearance of communication products, share public messages with key communication partners, and participate in a Joint Information System (JIS). Local health departments may coordinate with MDH Office of Communications for communication products and shared public messages. MDEM will most likely coordinate the JIS at the state level. Local emergency management may establish a local JIS in which local health departments may participate.

A JIS will facilitate a cohesive response, serve as the clearinghouse for accurate, timely information, and enhance the dissemination of health information essential to an effective health emergency response.

The media will be the primary information resource for all target audiences during a pandemic. The media will play an essential role in creating an informed public. However, inaccurate or exaggerated press reports can fuel public concern far in excess of an actual health risk. Thus, there must be a constant source of timely "official" public information to reduce rumors that otherwise will quickly fill an information vacuum.

Operational Communications

MDH and LHDs will maintain regular two-way communications with state and local partners and stakeholders, such as emergency management agencies and the State Emergency Operations Center (SEOC). To ensure communications throughout the emergency, MDH will use various communication media, such as telephone, fax, video conferencing, and the Internet.

17. Scaling Back Community Control and Containment Measures

The decision to discontinue community-level measures must balance the need and desire to lift individual movement restrictions against community health and safety. Generally, the most restrictive or disruptive measures will be discontinued first. MDH recommendations would be communicated to the public through traditional public health methods, such as the media, the Internet, etc.

C. Recovery

The Recovery Phase for an infectious disease outbreak or emergency begins soon after the response starts. During recovery, the Public Health and Medical State Coordinating Function will:

- Transition back to normal operations, providing ongoing disease surveillance, investigation, and control;
- Prepare and disseminate public health information in coordination with the Public Information Office;
- Make available appropriate mental health services for victims, emergency responders, and their families;
- Continue coordination with state and federal response partners;
- Follow proper reconciliation procedures;
- Maintain records for reference and reports;
- Demobilize department resources;
- Inventory lost or damaged equipment;
- Record personnel or equipment accidents;
- Assess the economic and educational impact of the infectious disease response;
- Replenish and/or restock depleted caches of PPE, pharmaceuticals, and supplies;
- Conduct a hotwash or after-action review; and,
- Implement improvement plan activities and review existing planning to address deficiencies.

IV. Concept of Coordination

Other state agencies will support the MDH, their staff, and constituents in preparing for infectious disease emergencies.

Table 3: State Agency Roles and Responsibilities in an Infectious Disease Outbreak or Emergency

State Agency	Primary Support Functions for Infectious Disease Response

Maryland Institute for Emergency Medical Services System (MIEMSS)	▪ Coordinate the statewide EMS system. ▪ Monitor the operation of the statewide EMS system to identify suspected PUIs for infectious disease emergencies and conduct the appropriate notifications/activate resources outlined in this plan. ▪ Coordinate with Emergency Medical Services Operational Programs (EMSOP) to provide transportation and emergency medical services for PUIs and patients with infectious diseases who require ambulance transportation to a hospital. ▪ Coordinate operational communications associated with PUIs for individual operations. ▪ Provide guidance to EMSOPs, medical directors, and individual EMS providers on the proper care and treatment of PUIs, personal protective practices associated with that care and transportation, and resources. Modify Maryland Medical Protocols for EMS providers and COMAR Title 30 as required to ensure appropriate care and transportation of PUIs and the protection of personnel associated with that care and transportation. ▪ Update EMSOPs and medical directors on PHE plans, including when to activate EMS emergency operational plans. ▪ Approve applications for Waiver to Licensing Requirements for Inter-facility Transfer for infectious disease PUIs to ensure the appropriate plans and procedures are adequate to meet waiver standards.
Maryland Department of Emergency Management (MDEM)	▪ Support both local government and state agency emergency operations pre-outbreak planning. Encouraging public safety organizations to complete emergency response plans, considering absenteeism, employee protective measures, infection control policies, and maintaining services. ▪ Coordinate all state agencies' overall emergency mitigation, preparedness, and response in an infectious disease emergency. ▪ Maintain communication with the MDH regarding infectious disease emergencies in Maryland. ▪ Support communications via an in-person or virtual Joint Information Center, as appropriate. ▪ Coordinate the activation of the State Emergency Operations Plan in accordance with guidance from the MDH. ▪ Inform the Governor, the Superintendent of the Maryland State Police, the Executive Council, and the legislature of emergency operations. ▪ Facilitate the request for a presidentially declared disaster. ▪ As needed, assist with reconciliation documentation and facilitate any Emergency Management Assistance Compact (EMAC) or Maryland Emergency Management Assistance Compact (MEMAC) requests.

	▪ Support other State entities with contaminated individual needs, as appropriate.
Governor's Office of Homeland Security	▪ Monitor the progress of emergency preparedness planning, implementation, and exercising in state agencies. ▪ Communicate the State's policies and procedures surrounding infectious diseases with the Department of Homeland Security.
Office of the Attorney General	▪ Assist MDH with its infectious disease emergency operations by preparing and reviewing proclamations and special regulations issued by the Governor. ▪ Represent the State on legal issues for isolation, quarantine, and other public health measures.
Office of the Judiciary	▪ Establish policies regarding judicial and legal proceedings during and after an infectious disease emergency, particularly addressing court schedules and operations modifications to accommodate containment strategies. ▪ Provide guidance regarding civil rights and statutory issues.
Comptroller of Maryland	▪ Coordinate emergency fund purchases of resources for isolated or quarantined individuals. ▪ Coordinate purchases needed for an effective emergency response to infectious disease. Assist state and local governments in value-determination efforts about monetary losses sustained due to infectious disease emergencies.
Department of Budget and Management	▪ Assist state agencies in developing and identifying costs associated with supporting local agencies in isolating and quarantining individuals related to an infectious disease response. ▪ Propose strategies for appropriation pertaining to the additional costs.
Department of Commerce	▪ Develop unemployment assistance policies and procedures for eligible individuals whose unemployment results from isolation, quarantine, or hospitalization due to an infectious disease emergency. ▪ Provide an estimate of an infectious disease emergency's immediate and long-term economic impact, as requested by the MDEM.
State Department of Education	▪ Develop a school system communications protocol in coordination with MDH. ▪ Develop protocols, in coordination with MDH, for the following actions: o Closing and opening schools; o Canceling or suspending school activities; o Repurposing school facilities, equipment, and vehicles; o Reassignment of non-school system employees;

	○ Screening of students and staff for infection; and, ○ Recommendations regarding pharmaceutical intervention for staff and students. ▪ Provide support and cooperation for mass vaccination of children and staff, if required.
Maryland Department of Natural Resources	▪ Coordinate the response to diseases regarding wild animals in collaboration with MDH. Assist in the management of vector-borne disease outbreaks, including vectors associated with state parks.
Department of General Services	▪ Effectively communicate service suspensions during an infectious disease outbreak to the public. ▪ Identify valuable resources such as services, personnel, equipment, supplies, or buildings for various stakeholders and establish procedures for their access to and use of these resources.
Maryland Department of Agriculture	▪ Coordinate the response to animal diseases regarding agricultural animals in collaboration with MDH. ▪ In coordination with MDH, assist in the management of mosquitoes and other vectors in vector-borne disease detection.
Department of Housing and Community Development	▪ Inventory available rental property suitable for housing isolated or quarantined individuals if a public health emergency, such as that involving an infectious disease, is declared.
Department of Human Services (DHS)	▪ Coordinate with local social service agencies to shelter isolated or quarantined individuals not currently hospitalized or housed in an MDH facility. ▪ Coordinate with local social service agencies to meet the childcare needs of isolated or quarantined individuals unable to care for their children. ▪ Provide USDA-donated food to disaster relief agencies and emergency feeding programs. ▪ Assist with food distribution and storage through the Emergency Food Assistance Program.
Maryland State Police (MSP)	▪ Available field agents will assist other state agencies in securing PUIs, at-risk contacts, and persons in isolation or quarantine. ▪ Review state and local authorities and protocols for maintaining public order during an infectious disease emergency. ▪ Act as the primary agency for traffic control and law enforcement needs on interstates and highways. ▪ Act as the primary law enforcement agency at mass vaccination or mass prophylaxis sites.

	▪ Assist the Secretary of Health with enforcement of pertinent orders and directives when authorized by Maryland statute.
Department of Public Safety and Corrections	▪ Coordinate public health emergency plans for correctional facilities. ▪ Develop and implement measures to prevent and lower viral contamination in correctional facilities.
Department of Juvenile Services	▪ Coordinate public health emergency plans for juvenile detention facilities. ▪ Develop and implement measures to prevent and lower viral contamination in juvenile detention facilities.

V. Administration and Finance

Costs associated with this mission will be accounted for and documented according to established state and federal-level procedures.

Should a State of Emergency be declared, legal authorities exist to reimburse counties or municipalities, provide mutual aid, and ensure continuity of government operations.

VI. Legal Authority

The *Maryland Infectious Disease Response Plan* (Maryland Department of Health, p. 20) provides additional information to supplement or clarify legal authorities regarding public health actions.

VII. Training, Exercise, and Evaluation

MDH and LHD plans are exercised collaboratively with other local, state, and federal preparedness partners where possible. The primary aim of training and exercises is to bring together a diverse representation of statewide preparedness partners. Including all applicable jurisdictions, agencies, senior officials, and other local, state, and federal stakeholders is imperative.

All MDH and LHD exercises are planned and evaluated using the Homeland Security Exercise and Evaluation Program (HSEEP) guidelines. When appropriate, Exercise Evaluation Guides (EEGs) are used to assess objectives by executing tasks and activities associated with each target capability.

This plan will be reviewed annually and updated as needed. Any changes will be distributed to designated statewide partners as listed in the Concept of Coordination section.

Appendix A: Influenza Intervals and Descriptors

The Centers for Disease Control and Prevention created the Pandemic Intervals Framework (PIF) to describe the progression of an influenza pandemic using six intervals to provide common terminology to describe pandemic activity.[15]

Interval	Description
1) Investigation of cases of novel influenza A virus infection in human	When novel influenza A viruses are identified in people, public health actions focus on targeted monitoring and investigation. This can trigger a risk assessment of that virus with the Influenza Risk Assessment Tool (IRAT), which is used to evaluate if the virus has the potential to cause a pandemic.
2) Recognition of increased potential for ongoing transmission of a novel influenza A virus	When increasing numbers of human cases of novel influenza A illness are identified, and the virus has the potential to spread from person to person, public health actions focus on control of the outbreak, including treatment of sick persons.
3) Initiation of a pandemic wave	A pandemic occurs when people are easily infected with a novel influenza A virus that can spread sustainably from person to person.
4) Acceleration of a pandemic wave	The acceleration (or "speeding up") is the upward epidemiological curve as the new virus infects susceptible people. Public health actions may now focus on appropriate non-pharmaceutical interventions in the community (e.g., school and child-care facility closures, social distancing) and, if available, medications (e.g., antivirals) and vaccines. These combined actions can reduce the disease's spread and prevent illness or death.
5) Deceleration of a pandemic wave	The deceleration (or "slowing down") happens when pandemic influenza cases consistently decrease in the United States. Public health actions include continued vaccination, monitoring of pandemic influenza A virus circulation and illness, and reducing the use of non-pharmaceutical interventions in the community (e.g. school closures).
6) Preparation for future pandemic waves	When pandemic influenza has subsided, public health actions include continuing to monitor pandemic influenza A virus activity and preparing for potential additional waves of infection. A second pandemic wave could be more severe than the initial wave. An influenza pandemic is declared ended when enough data shows that the influenza virus worldwide is similar to a seasonal influenza virus in how it spreads and the severity of the illness it can cause.

[15] Centers for Disease Control and Prevention (2024). Pandemic Intervals Framework. https://www.cdc.gov/pandemic-flu/php/national-strategy/intervals-framework.html Accessed January 10, 2025.

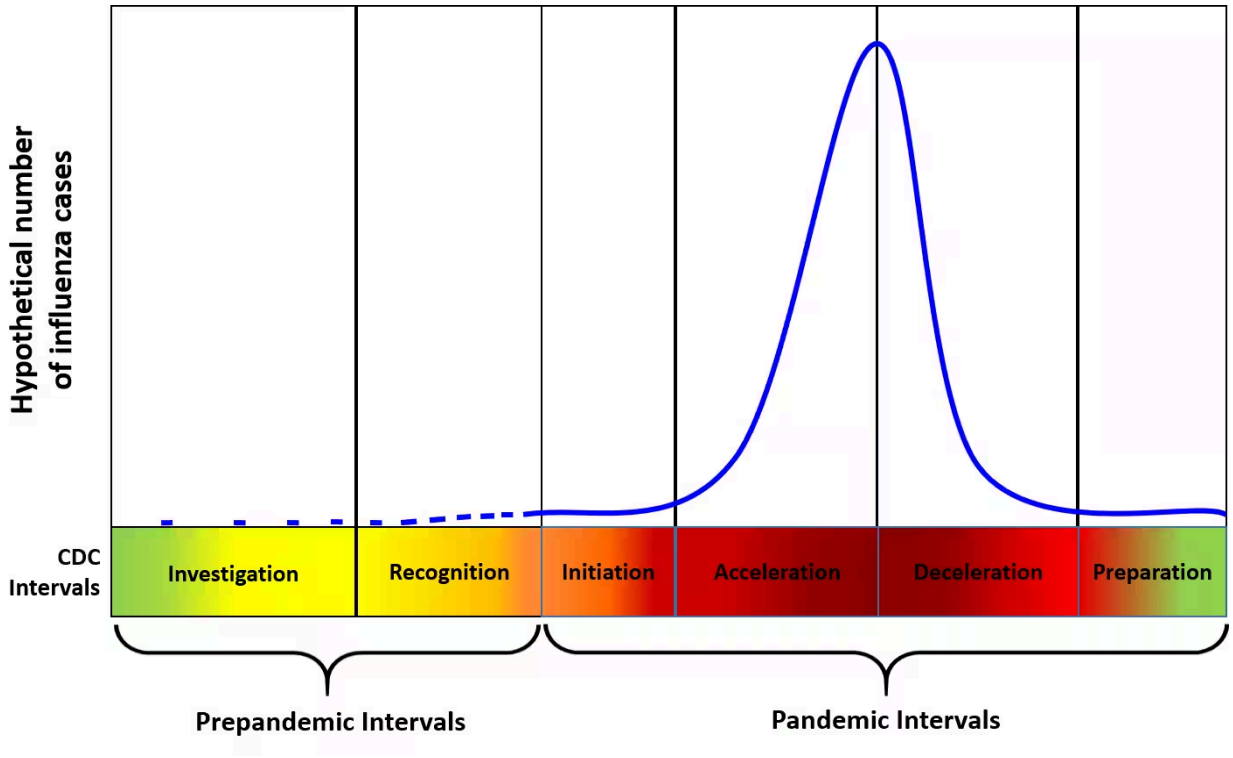


Fig. 1 Preparedness and response framework for novel influenza A virus pandemics: CDC interval.

The figure above, Figure 1, shows a distribution curve of hypothetical pandemic influenza cases across the six CDC intervals. The first two pre-pandemic intervals from left to right include "investigation" and "recognition." The curve is flat during "investigation" and "recognition" intervals, showing zero or low numbers of hypothetical pandemic influenza cases. Following the "recognition" interval are the four pandemic intervals – "initiation," "acceleration," "deceleration" and "preparation." The hypothetical number of influenza cases is normally distributed within the pandemic intervals, where the greatest number of cases are located between the "acceleration" and "deceleration" intervals. From "initiation" to "acceleration," the distribution curve of the hypothetical number of influenza cases greatly increases, showing the greatest number of hypothetical influenza cases at the end of the "acceleration" interval. From "deceleration" and ending with "preparation," the hypothetical number of influenza cases greatly decreases, bringing the number of hypothetical influenza cases close to zero (CDC, 2016).[16]

[16] CDC (Ed.). (2016, November 3). *Preparedness and response framework for novel influenza A virus pandemics: CDC Intervals 508*. Centers for Disease Control and Prevention. https://www.cdc.gov/flu/pandemic-resources/national-strategy/intervals-framework-508.html