



Miami-Dade County Health Department



Pandemic Influenza Preparedness and Response Plan

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Acronyms

BOE	Bureau of Epidemiology
BOL	Bureau of Laboratories
CDC	Centers for Disease Control and Prevention
CHD	County Health Department
CRI	Cities Readiness Initiative
DEMO	Department of Emergency Medical Operations
DMORT	Disaster Mortuary Operational Response Team
DOACS	Department of Agriculture and Consumer Services
ED	Emergency Department
EOC	Emergency Operations Center
FDOH	Florida Department of Health
IC	Infection Control
ICP	Infection Control Professional
HHS	Department of Health and Human Services
MDCHD	Miami-Dade County Health Department
MDFR	Miami-Dade Fire and Rescue
MDPD	Miami-Dade Police Department
OEDC	Office of Epidemiology and Disease Control
OPA	Office of Public Affairs
PPE	Personal Protective Equipment
SEOC	State Emergency Operations Center
SIP	Special Immunization Program
VAERS	Vaccine Adverse Event Reporting System
WHO	World Health Organization

1. Introduction

Influenza A viruses can cause worldwide epidemics (pandemics), resulting in high rates of illness and death. Pandemics can lead to major disruptions to health care infrastructure, the economy, and society. Appropriate planning is necessary in order to optimize health care delivery through a pandemic. An influenza epidemic will impact multiple communities across Florida simultaneously; therefore Miami-Dade County should be prepared to respond in the context of uncertain availability of external resources and support.

During a pandemic, novel strain detection and disease monitoring are crucial. Pandemic response requires actions from all levels of health service. The Centers for Disease Control and Prevention (CDC) conduct continuous national surveillance, communicating with public health colleagues around the world (including the World Health Organization) for novel virus detection and investigation. The Miami-Dade County Health Department (MDCHD) Pandemic Influenza Preparedness and Response Plan include actions that should take place during each pandemic phase according to World Health Organization (WHO) and CDC guidelines.

1.1 GOAL OF THE MIAMI-DADE COUNTY PANDEMIC INFLUENZA PREPAREDNESS AND RESPONSE PLAN

The primary goal of the Miami-Dade County Pandemic Influenza Preparedness and Response Plan is to minimize infrastructure disruption, morbidity, and mortality among Miami-Dade County residents and visitors.

The objectives of the Miami-Dade County Pandemic Influenza Preparedness and Response Plan are:

- a) To assist and facilitate appropriate planning and response throughout Miami-Dade County government and the health care sector by:
 1. Developing a county plan through a collaborative process that identifies roles and responsibilities.
 2. Recommending planning considerations for appropriate prevention, patient care, and treatment during the pandemic.
 3. Advocating planning considerations for appropriate communications, resource management and preventive measures to minimize infrastructure.
- b) To provide a comprehensive and clearly operational plan that will be reviewed every year to ensure incorporation of new developments and consistencies with best practices.

1.2 ASSUMPTIONS

The following assumptions are made for a worst case-scenario:

- Pandemic influenza occurred every 11 to 39 years in the 20th century; based on history of the 20th century, we would expect an influenza pandemic within the next few years.
- A novel influenza virus strain will likely emerge in a country other than the United States (U.S.), but a novel strain could emerge first in the U.S.
- With the emergence of a novel influenza virus strain, most persons will likely need two doses of vaccine to achieve optimal antibody response.
- A pandemic could affect all geographic areas of a country, even isolated locations
- Emergency response will require the substantial interaction of agencies beyond the local health department.

- The county must be prepared to rely on its own resources to respond. The effect of influenza on individual communities will be relatively prolonged (weeks to months) in comparison to other types of disasters.
- Miami-Dade County’s migrant workers and tourists will substantially increase the target population for potential vaccination.
- If a pandemic occurs, vaccines and medicines might be delayed and in short supply; they will have to be allocated on a priority basis.
- Response to the demand for services will require non-standard approaches, including:
 - a. Discharge of all but critically ill hospital patients
 - b. Expansion of hospital capacity by using all available space and “less than code compliance” beds
 - c. Increase of patient ratio to hospital staff
 - d. Recruitment of volunteers who can provide custodial services under the general supervision of health and medical workers
 - e. Relaxation of practitioner licensure requirements as deemed appropriate, and
 - f. Utilization of general purpose and special needs shelters as temporary health facilities.
- Secondary bacterial infections following influenza illness may stress antibiotic supplies.

The pandemic may occur during time periods not normally associated with our usual influenza season, and the pandemic strain may attack categories of people at different rates than expected during the influenza season.

1.3 PLAN OVERVIEW

The priorities of the MDCHD during a pandemic will be to assure the continuation and delivery of essential public health services while providing assistance to meet emergency needs of the affected population. This plan establishes the framework and guidelines to ensure that an effective system of health and medically-related emergency management is in place to prevent pandemic influenza adverse outcomes.

This plan must be reviewed and updated to ensure that its assumptions, resources and priorities are consistent with current knowledge and changing infrastructure. In the event of a pandemic, the judgment of the public health leadership, based on the epidemiology of the virus and the extent of disease transmission in the community, may alter or override anticipated strategies and plans.

1.4 ROLES AND RESPONSIBILITIES

MDCHD and other appropriate local agencies hold responsibility for the countywide coordination of pandemic influenza response, including surveillance, coordination of health and other appropriate services, coordination with state and federal liaisons, and coordination of the vaccine and antiviral supply (including infrastructure procurement, vaccine allocation, management, and funding). These responsibilities include:

- a. Seeking an Executive Order from county and city mayors in order to activate local resources for the pandemic response. The MDCHD will assume the role of Incident Command at the County Emergency Operations Center (EOC), providing leadership to other local agencies and resources in the management of this type of event.
- b. Ensuring distribution of plans to all organizations that may be involved in the pandemic response and coordinating with these partners on an ongoing basis.

- c. Undertaking promotional and other activities to decrease morbidity and mortality due to influenza or its complications.
- d. Assisting in the identification and provision of resources needed by the local health care systems to cope with the emergency.
- e. Keeping the public informed during all phases of the pandemic through the MDCHD Office of Communications. The Office of Communications will work closely with the Office of Epidemiology and Disease Control (OEDC) to maintain updated outbreak information.
- f. Identifying and/or developing a framework for conducting process and outcome evaluations of individual and collective responses of all parties to an influenza pandemic.
- g. Assuming responsibility for vaccine and antiviral distribution for specific populations and coordinating with hospitals and other agencies in the distribution and administration of vaccine and antiviral drugs.
- h. Coordinating and targeting communication strategies to keep the public, health professionals, the media, and any other persons or groups informed with respect to the pandemic and recommendations on the use of influenza vaccines and antiviral drugs.
- i. Providing expertise, advice, and recommendations concerning public health, care, treatment, and epidemiology including 1) on-going and timely medical, scientific, and public health advice; 2) review of the pandemic response capacity; 3) equitable allocation of available influenza vaccine during a pandemic; and 4) policy issues requiring immediate resolution.
- j. Assessing influenza vaccine coverage and disease impact.
- k. Communicating on an urgent basis together with the FDOH to resolve any identified urgent policy and operational issue that will affect any pandemic influenza response capacity.
- l. Reviewing, evaluating, and taking measures at the conclusion of an influenza pandemic to improve or enhance its role in response capacity and research activities.
- m. Coordinating ongoing planning with key stakeholders through the Pandemic Influenza Working Group made up of representatives from the Office of Epidemiology and Disease Control (OEDC), the Special Immunization Program (SIP), Miami Branch Laboratory, MDCHD General Counsel, and the MDCHD Office of Communications. Other key stakeholders involved in planning include the Miami-Dade County Office of Emergency Management, as well as the Agency for Health Care Administration, the Department of Corrections, and the Miami-Dade County Public Schools.
- n. OEDC will do the following:
 - i. Conduct surveillance of influenza and related disease activity and provide continuous information on its course and its impact upon the population.
 - ii. Design, organize, and support special studies required to better define disease burden or evaluate pandemic influenza response activity.
 - iii. Recommend post-pandemic studies to assist in evaluation of the response capacity, including any medical, scientific, and technical aspects.
 - iv. Develop and participate in coordinated training and simulation exercises, including the coordination of emergency/contingency plans designed to achieve emergency preparedness.
 - v. Monitor, review, and assess any issues where immediate intervention may be required to ensure the health and safety of residents and visitors.

- o. The Special Immunization Program (SIP) will undertake periodic reviews of immunization prioritization policies for influenza vaccines and antiviral drugs.

Some other responsibilities of MDCHD are as follows:

- a) Ensuring that pandemic influenza contingency plans are developed and adopted and that these plans and appropriate guidelines are regularly updated;
- b) Working with local responders (e.g., emergency responders, hospitals, and mortuary services) and tribes in advance of a pandemic to facilitate a coordinated community response. It is essential that the lines of communication are clear and established in advance of a pandemic;
- c) Developing local plans to assess existing health care resources, coordinate responses with key agencies in the county, and develop contingencies for anticipated shortages of essential services;
- d) Promoting routine influenza and pneumococcal vaccination during the inter-pandemic period to designated high-risk groups;
- e) Participating in state surveillance activities by monitoring and reporting diseases caused by influenza and related diseases/conditions;
- f) Investigating outbreaks and clusters of influenza-like illness (ILI) and assuring that influenza virus isolates are sent to the Bureau of Laboratories; and
- g) Recommending post-pandemic studies to assist in evaluation of pandemic influenza response capacity, including its medical, scientific, and technical aspects.

2. Background

2.1 ESTIMATED IMPACT OF AN INFLUENZA PANDEMIC ON MIAMI-DADE COUNTY

Predicting the impact of the next influenza pandemic is difficult and many factors must be considered: the virulence of the virus, how rapidly it spreads from population to population, and the effectiveness of prevention and response efforts. Nevertheless, estimates of the health and economic impact remain important to aid public health policy decisions and guide pandemic planning for health and emergency sectors.

Historic data show that over 50% of a population may become infected with the novel virus during a pandemic, and the age-specific morbidity and mortality may be quite different from the normal annual epidemics, with a higher proportion of deaths in persons under 65 years of age.

An estimate of the health and economic impact of a pandemic in Miami-Dade County has been performed using software from the CDC (available at <http://www2a.cdc.gov/od/fluaid/>), with assumptions based on U.S. epidemiologic data on various population health outcomes (death, hospitalization, outpatient treatment, and ill but requiring no formal care) for severe influenza A epidemics and data from previous pandemics. The model does not account for the potential impact of antiviral drugs or an effective vaccine. These estimates, while appropriate to use for planning purposes and to raise awareness, may over- or under-estimate the potential impact in Miami-Dade County. See the following table for the number of estimated deaths, hospitalizations, or outpatient care visits using attack rates of 15% and 35%.

Estimated Number of Cases by Outcome						
Outcome	Attack Rate 15%			Attack Rate 35%		
	Mean Number	5 th Percentile	95 th Percentile	Mean Number	5 th Percentile	95 th Percentile
Deaths	1,001	588	1,658	2,336	1,373	3,869
Hospitalizations	4,302	1,604	5,493	10,041	3,743	12,818
Outpatient Care	194,268	151,778	276,858	453,293	354,150	646,003

2.2 LEGAL CONSIDERATIONS

The legal considerations linked to pandemic preparedness and responses are complex and need to take into account the existing federal and state legislation. Provided are several statute references that apply to influenza pandemic preparedness planning and a list of recommendations regarding quarantine and declarations of emergency.

2.2.1 Statutory Authority

Statute	Agency	Authority
Chapter 68, Title 42	Federal Government	-Provides authority to declare and respond to emergencies and provide assistance to protect public health; implemented by the Federal Emergency Management Agency (FEMA)
Title 42 United States Code Section 264 (Section 361 of the Public Health Service [PHS] Act)	Federal Government Centers for Disease Control and Prevention (CDC)	-Under its delegated authority, the CDC is empowered to detain, medically examine, or conditionally release individuals reasonably believed to be carrying a communicable disease. Influenza viruses that cause/ have potential to cause a pandemic are included in the list of quarantinable diseases.
Chapter 252, Florida Statutes Emergency Management Act Section 381.003, F.S.	Governor Florida Division of Emergency Management	- Allows Governor to declare a state of emergency - Gives Governor and Division direction and control of emergency management - Allows Governor and Division to delegate authority to carry out critical functions to protect the peace, health, safety, and property of the people of Florida
Chapter 381, F.S. Section 381.0011, F.S. Communicable Disease and Quarantine Section 381.00315, F.S. Public Health Emergencies and Advisories	Department of Health	-Authorizes the department to administer and enforce laws and rules relating to control of communicable disease - Authorizes the department to declare, enforce, modify, and abolish quarantine of persons, animals, and premises - Authorizes the department to specify the conditions and procedures for imposing and releasing a quarantine - Authorizes the State Health Officer to declare public health emergencies and issue public health advisories
Section 768.28, F.S. Sovereign Immunity for State Officers and Employees	State Agencies	-Protects state employees who administer immunizations as part of their official duties
Section 120.54, F.S.	State Agencies	-Allows state agencies to adopt temporary emergency rules when there is immediate danger to public health, safety, or welfare without going through the normal rule making process
Section 381.0012, F.S. Enforcement Authority	Department of Health	-Authorizes the department to maintain necessary legal action; request warrants for law enforcement assistance; and directs state and county attorney, law enforcement and city and county officials upon request to assist the department to enforce the state health laws and rules adopted under Chapter 381, F.S.

2.2.2 Recommendations Regarding Quarantine and Declarations of Emergency

For emergency preparedness planning, the projected scale of pandemic influenza mitigates against any practical and ameliorative application of and reliance on traditional quarantine or isolation of persons and buildings under Chapter 381, Florida Statutes (F.S.). A more practical and effective use of legal tools should be directed towards preparation of one or more Declarations of Emergency under Chapter 252, F.S., alone or together with one or more Declarations of Public Health Emergency under section 381.00315, F.S.

3. Main Components of the Plan

3.1 Planning and Coordination

Inter-Pandemic Period – Phases 1 and 2

No new influenza virus subtype has been detected in humans. There may be risk to humans from a currently circulating animal virus

- Establish a county pandemic influenza working group.
- Advocate the importance of pandemic planning to relevant decision-makers.
- Develop and periodically update local plans in close collaboration with relevant partners, including those outside the health sector, and with reference to current WHO, CDC, and BOE guidance.
- Monitor and evaluate available information to advise MDCHD administration on influenza-related issues.
- Develop a comprehensive county pandemic influenza preparedness and response plan
- Develop tools to estimate seasonal and pandemic influenza disease burden and the public health value and cost-effectiveness of interventions, including seasonal vaccination.
- Facilitate/negotiate agreements among partners, (e.g. EOC, Miami-Dade Police Department and other organizations), nongovernmental organizations, and the private sector to facilitate implementation of the plan.
- Identify, brief regularly, and train key personnel to be mobilized in case of emergence of a new influenza virus strain.
- Develop surge-capacity contingency plans for the county to facilitate management of resources and staff during a pandemic.
- Update the MDCHD plan periodically based on guidance from FDOH and other health agencies
- Exercise pandemic plans and use the results to improve plans and preparedness.
- Provide the county with guidance on food safety, safe agricultural practices and other public health issues related to infected animals.

If Miami-Dade County is affected:

- Activate joint mechanisms for actions with animal health authorities and other relevant organizations.
- Assess preparedness status and identify immediate actions needed to fill gaps
- Ensure ability to mobilize and rapidly deploy a multisectoral expert response team.
- Ensure ability to rapidly deploy stockpile resources to field locations.
- Decide whether to request part of the stockpile components according to risk assessment (in conjunction with the Miami-Dade County mayor and Secretary of Health).

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

- Monitor reports from the WHO, CDC, and FDOH; disseminate this information to MDCHD employees (via Epicom, teleconferences, and meetings), local agencies, residents and tourists.
- Review MDCHD emergency response procedures.
- Prepare for mass testing of specimens (MDCHD, BOL)
- Increase communication with the CDC Miami Quarantine Station, veterinary associations, and the Department of Agriculture and Consumer Services (DOACS) to revise/update procedures
- Prepare for the possibility that a novel virus alert could progress to phase 4 or 5
- Target initial doses of vaccine to high-risk groups and /or emergency responders, since a relative shortage of vaccine is anticipated in the early phases

If Miami-Dade County is affected:

- Activate local pandemic contingency planning arrangements
- Implement interventions to reduce disease burden in the initial foci and contain or delay the spread of infection.
- Mobilize local response and provide guidance to relevant authorities in reviewing, updating and implementing contingency plans.
- Brief appropriate officials in all relevant Miami-Dade County government departments regarding the status of the incident and the potential need for additional resources, interventions and the use of emergency powers.

Pandemic Alert Period - 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

- Recruit local pharmacies to report number and type of antiviral prescriptions filled.
- Maintain communication with FDOH concerning laboratory findings.
- Coordinate with Bureau of Laboratories to ensure that the following are maintained: an inventory of supplies, a plan for possible staff turnover and hiring of additional employees, authorization for special funding for additional specialized laboratory technicians from CDC, and a plan for re-

certification of non-traditional labor pool and redirection of staff with appropriate skills to alleviate needs for additional laboratory personnel

If Miami-Dade County is affected:

- Ensure highest levels of political commitment for ongoing and potential interventions/ countermeasures.
- Activate procedures to obtain additional resources; consider invoking emergency powers.
- Activate overarching command and control of response activities
- Deploy operational response teams
- Ensure cross-jurisdictional collaboration with neighboring countries for information-sharing and coordination of emergency responses.
- Identify needs for state and federal assistance.

If Miami-Dade County is not affected:

- Activate county pandemic contingency planning arrangements.
- Reassess current state of preparedness; implement actions required to close priority gaps.

Pandemic Alert Period - 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]).

If Miami-Dade County is affected:

- Assist in the ongoing evaluation of interventions.
- Finalize preparations for imminent pandemic, including activation of internal organizational arrangements (within command-and-control system) and staffing surge capacity.
- Adjust and maximize efforts and resources to reduce disease burden and contain or delay the spread of infection.
- Consult with FDOH and MDCHD Administrator to declare affected localized areas in state of emergency
- Continue to update community educational materials
- Organize health fairs and other prevention activities in non-affected areas of the county (e.g. schools, churches, malls)
- Conduct studies of the efficacy of vaccine/antivirals
- Assess the effectiveness of control measures (e.g. school and business closures).

Pandemic Period - Phase 6

Increased and sustained transmission in general population

If Miami-Dade County is affected:

- Implement all relevant elements of county pandemic plan, including coordination of response and implementation of specific interventions.
- Assess and publicize the current and cumulative local impact.
- Consider applying emergency powers
- Implement emergency medical treatment sites and temporary infirmary locations as needed (e.g. schools, EOC, Red Cross, Salvation Army, nursing homes, healthcare system)
- Consider requesting assistance of National Guard
- Request assistance from FDOH for health care workers to prevent local staff burnout
- Recommend changes in priority groups for receiving vaccine or antivirals.
- Assist in analyzing morbidity and mortality findings

Post Pandemic Period/ Between Waves

- Determine need for additional resources and powers during subsequent pandemic waves.
- Declare end of emergency command-and-control operations, states of emergency, etc.
- Support rebuilding of essential services, including rest and recuperation of staff.
- Review county plan based on experiences from the event.
- Address psychological impacts in the community and health care force.
- Acknowledge contributions of all stakeholders (including the public) and essential staff towards fighting the disease.
- Consider offering assistance to remaining counties with ongoing widespread activity.
- Assist in writing a cumulative report of pandemic activities, emphasizing planning and coordination of preventative activities, community response, affected sectors of the community, cost and expenses of the pandemic, admissions due to influenza, mortality, impact on community morale, economic impact, and lessons learned.

3.2 Situation Monitoring and Assessment

The Office of Epidemiology and Disease Control (OEDC), Miami-Dade County Health Department (MDCHD) has two primary responsibilities during an influenza pandemic: 1) disease surveillance, and 2) epidemiological investigations.

Inter-Pandemic Period – Phases 1 and 2

No new influenza virus subtype has been detected in humans. There may be risk to humans from a currently circulating animal virus

- Participate in the Florida Sentinel Physician Influenza Surveillance Network
[Miami-Dade County should have a minimum of 9 (1/250,000 population) healthcare providers/clinics reporting weekly influenza-like illness (ILI) data to BOE year-round via phone or internet. Providers can also send specimens collected from patients with ILI to the State Laboratory for viral culture and strain identification. The BOE influenza coordinator releases weekly summaries of statewide ILI activity to the local CHDs].
- Conduct sentinel hospital ILI surveillance
[Each week, selected hospitals report the number of total visits and the number of ILI visits. As of 01/18/06, six hospitals are participating].
- Conduct surveillance of influenza and pneumonia deaths:
[Each week, the Office of Vital Records provides reports of total influenza-related deaths. All unexplained deaths among individuals \leq 49 years old are monitored by OEDC investigators].
- Facilitate sending isolates from private laboratories to State Laboratories for prompt testing/confirmation of specimens *[Currently active]*
- Investigate any ILI clusters/outbreaks identified via the MDCHD 24-hour reporting system and notify BOE *[Currently active].*
- Monitor calls to the county's 911 system in order to identify disease trend aberrations consistent with an increased number of ILI or pneumonia cases
[This system has been initiated; however, further development is necessary. Calls to the Miami-Dade Fire and Rescue (MDFR) 911 System will be monitored daily by OEDC investigators for aberrations in 4 categories, including trouble breathing].
- Implement an emergency department-based syndromic surveillance system to monitor ILI *[As of 01/18/06, seven Miami-Dade County hospitals provide the OEDC with daily electronic transmission of ED visit data. This data is used to monitor 10 syndrome categories, including respiratory illness and ILI].*
- Maintain a database with contact information for hospital Infection Control Professionals (ICPs), nursing home ICPs, healthcare providers, school nurses, prison/jail nursing staff, day care center providers and other groups *[This database is maintained and updated biannually].*
- Facilitate testing of isolates from: suspected influenza outbreaks (in community or institutional settings); suspected influenza-associated deaths among those \leq 49 years old; suspected influenza-associated encephalitis cases; and severe respiratory cases that meet the clinical and/or epidemiological criteria for Severe Respiratory Infection Surveillance (SRIS) testing *[Currently active]*
- Train epidemiology staff to use the Merlin outbreak module for reporting of ILI clusters

- Conduct school absenteeism surveillance to facilitate early detection of influenza activity *[Pending]*
- Monitor influenza status of high-risk groups by conducting ILI surveillance in sentinel nursing and daycare facilities *[Pending]*
- Conduct animal ILI surveillance in conjunction with appropriate veterinary partners, individuals, and organizations *[Activity pending; Appropriate partners have been identified and contacted]*.
- Monitor bulletins from CDC and BOE regarding virologic, epidemiologic, and clinical findings associated with new variants isolated within or outside the U.S (Phase 2).
- Activate enhanced local human surveillance in coordination with BOE to detect imported cases and local spread by increasing case detection among persons who recently traveled to affected areas and present with ILI, pneumonia, acute respiratory distress syndrome, or other severe respiratory illness (Phase 2).
 - Suspect cases will be reported to BOE and appropriate specimens will be collected to diagnose influenza infection.
 - Specimens should be sent to the Tampa and/or Miami State Laboratories, where isolation and subtyping can be done under stringent conditions. Diagnosis of influenza can be done locally using antigen detection, immunofluorescence or PCR.
- Work with hospitals and healthcare providers to obtain samples for influenza testing on patients who:
 - Were hospitalized with unexplained pneumonia, acute respiratory distress syndrome (ARDS), or severe respiratory illness AND
 - Traveled to affected countries within 10 days of symptom onset; or from less severely ill patients who had contact with poultry in an affected country
- Assist providers with the delivery of specimens from suspect human cases to the Miami or Tampa State Laboratory.
- Develop and review procedures for field investigation of confirmed cases of influenza caused by avian flu to assess exposure and the likelihood of person-to-person transmission
- Evaluate current stock of supplies necessary for outbreak investigation (e.g. specimen collection kits, rapid testing kits)
- Designate and train appropriate staff and volunteers (e.g. Epi Response Team, Medical Reserve Corps) to carry out epidemiologic investigations
- Form partnerships for epidemiologic investigation with community partners (e.g. laboratories, jails, CDC Miami Quarantine Station, veterinarians, Customs and Border Protection, Medical Examiner, nursing homes, schools, daycares)
- Meet with the influenza pandemic planning workgroup, OEDC Director, SIP, and other appropriate partners to review major elements of enhanced surveillance activities if person-to-person transmission of the novel virus is confirmed.

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

- Continue interpandemic activities
- Monitor individuals who have recently traveled to outbreak areas, individuals with ILI, and individuals with confirmed influenza

- Establish daily communication with neighboring counties and BOE to monitor regional and state conditions.
- Update ILI case definition based on CDC/BOE guidance
- Review effectiveness of treatment protocol and infection control measures and revise if necessary

Pandemic Alert Period - 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

If Miami-Dade County is affected:

- Describe and (re) assess the epidemiological, virological and clinical features for infection; identify possible source(s)
- Expand activities in *phase 3*: adjust case definition if necessary
- Initiate plan to test substantially more specimens than usual (BOL).
- Report test results daily to Tallahassee, DOH Headquarters (Miami Branch Laboratory).
- Enhance surge capacity for surveillance

If Miami-Dade County is not affected:

- Continue enhanced surveillance
- Assess the need to screen travelers arriving in the U.S. from affected countries
- In hospitals and emergency rooms, increase laboratory testing for influenza, (this includes use of rapid antigen detection tests for patients with ILI).

Pandemic Alert Period - 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].

- Expand and adjust activities in *phase 4*
- Report spread to BOE through appropriate means (EpiCom, telephone, or email)
- Implement real-time monitoring of essential resources (medical supplies, pharmaceuticals, infrastructure, vaccines, hospital capacity, human resources, etc)
- Conduct enhanced surveillance for respiratory disease in hospitals/ERs, schools, nursing homes, and community health clinics through telephone, mail, or face-to-face surveys
- Monitor the development of antiviral resistance (BOL)

Pandemic Period - Phase 6

Increased and sustained transmission in general population

- Monitor geographic spread of disease in the county using Geographic Information Systems (GIS) methods
- Use enhanced surveillance and Merlin electronic reporting system to identify contacts and track initial geographical spread
- Monitor possible changes in epidemiological, clinical and virological features
- Ensure that resources are in place to monitor vaccine effectiveness
- Monitor global/national/state situation for vaccine/antiviral availability, recommendations for best practice, etc.
- Monitor deaths and hospitalizations. Community impacts could be assessed by measuring absenteeism in key industries or sectors
- Enhance monitoring for antiviral resistance
- Conduct pandemic surveillance
 - a. Monitor hospital admissions of suspected or confirmed cases of pandemic strain influenza
 - b. Monitor deaths of suspected or confirmed cases of pandemic strain influenza
 - c. Monitor workforce absenteeism in services designated as essential
 - d. Monitor vaccine usage for routine and pandemic strain influenza
 - e. Monitor vaccine adverse events attributed to the pandemic strain vaccine
 - f. Monitor antiviral use and adverse events that may be attributed to it

3.3 Health Systems Response

Inter-Pandemic Period – Phases 1 and 2

No new influenza virus subtype has been detected in humans. There may be risk to humans from a currently circulating animal virus

- Identify and prioritize community needs to be met during a pandemic, paying special attention to vulnerable groups
- Train personnel in infection control in order to provide appropriate guidance to hospitals, clinics, and other healthcare facilities and social settings.
- Update and strengthen communication channels with laboratories, healthcare facilities, and infection control practitioners in order to coordinate diagnostic procedures, develop clinical guidelines, and facilitate interaction during the emergency.
- Disseminate DOH-Miami Branch laboratory guidelines on bio-safety and security in handling and shipping specimens and isolates.
- Conduct an inventory of pharmaceuticals and vaccine in healthcare facilities and other settings throughout the county; maintain a contact list of providers of these resources in case the MDCHD needs to directly assist in resource acquisition.

- Develop and conduct training among healthcare providers and MDCHD staff on influenza, avian influenza, and the risk factors associated with them in order to prevent transmission among response personnel and the community.
- Acquire necessary personal protective equipment (PPE) to respond during the pandemic and in a non-emergency mode, and provide training on its proper use.
- Fit test all MDCHD emergency response personnel for respirators
- Develop guidelines for self-care and “respiratory etiquette” to be observed by MDCHD employees.
- Identify the incident command system and personnel that will be in place to respond during the pandemic.
- Link the Pandemic Influenza Preparedness and Response Plan with the Cities Readiness Initiative (CRI) currently being developed by MDCHD and local partners.
- Develop influenza and avian influenza standard operating procedures and disseminate them to both MDCHD personnel and community partners.
- Adopt standard versions of case-finding, treatment and management protocols and algorithms; infection control guidelines; guidance on triaging; surge capacity management guidelines and staffing strategies.
- Review guidelines from WHO/CDC and implement them as appropriate
- Acquire all the resources necessary for appropriate response (e.g. investigation forms, vaccine, antivirals, PPE)
- Collaborate with the Bureau of Laboratories in order to assure coordination between epidemiologic surveillance and laboratory diagnostic activities
- Develop guidelines for healthcare workers to assist in case finding and investigation
- Alert local healthcare providers to consider avian influenza infection in ill patients with epidemiologic links to affected birds. Encourage active case finding (use annual mailing as a strategy; use separate letter to motivate the providers in this regard)
- Alert infection control practitioners (ICPs) about probability of new cases and importance of infection control practices (this can be done via Blast Fax, presentations at APIC meetings, or planned events for ICPs).
- Provide health care providers with resources necessary to facilitate diagnosis and management of cases (such as algorithms and guidelines)
- Ensure readiness of healthcare facilities to manage cases (vaccination of staff, resource stocks)

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

- Review and update current response plans
- Drill and/or exercise the response plan, with the participation of partner agencies
- Test call-down lists
- Test functionality of established incident command
- Train Epi Response team (EpiRT), investigators, and other volunteers in the identification and epidemiologic investigation of cases/clusters
- Ensure compliance with infection control procedures to prevent nosocomial transmission among healthcare workers

- Review and update case definitions, protocols, and algorithms, and provide them to health care providers, both private and public

Pandemic Alert Period - 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

- Coordinate response with neighboring counties
- Continue to review clinical management and infection control protocols in healthcare and long-term care facilities
- Continue to review and update biosafety protocols for both handling & shipment of specimens
- Exercise the response plan for the next phase
- Reinforce messages to health care providers about considering influenza infections in ill patients; findings should be reported to the OEDC.
- Update case definitions, protocols, and algorithms according to WHO, CDC, and state guidelines for case finding, management, infection control, and surveillance.
- Activate contingency plans for response in health care facilities overloaded with cases
- Implement contingency plans for healthcare personnel shortages
- Continue to emphasize infection control measures and maintain stock of personal protective equipment (PPE)

Pandemic Alert Period - 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]

- Assist clinicians in recognition, diagnosis, and reporting of cases; make a hotline service available for health care providers that is operated by healthcare professionals
- Assure the continuation of non-pandemic related healthcare services by implementing the Continuity of Operations Plan (COOP)
- Mobilize existing resources and fully implement the MDCHD Pandemic Influenza Preparedness and Response Plan, coordinating actions with the Office of Emergency Management (OEM); activate the Points of Dispensing (POD) system to provide antivirals and vaccine
- Activate volunteers and coordinate their participation in emergency response
- Allocate resources necessary to meet the needs of persons in quarantine (OEM – FEMA)
- Prepare appropriately for corpse management by initiating contact with the local and state DMORT
- Continue to educate MDCHD staff and healthcare providers, explaining most recent changes in policies and procedures
- Continue to disseminate updated case definitions, protocols, and algorithms for case-finding, management, and infection control to healthcare providers
- Train Epi Response Team (EpiRT) and other volunteers to identify and investigate cases and clusters
- Drill and/or exercise decision-making procedures and chains of command (incident command) with command level, personnel, and general staff

Pandemic Period - Phase 6

Increased and sustained transmission in general population

- Establish and provide clear guidance (based on WHO/CDC/state recommendations) on the triage of influenza vs. non-influenza cases, and on algorithms that facilitate this triage
- Update guidelines on self-care for both MDCHD staff and the community
- Coordinate joint actions with neighboring counties for public education, immunization, and treatment services (An MOA to support counties that are lacking resources could be coordinated by region)
- Maintain and enhance Sentinel Physician component of the response plan, including a larger number of providers
- Design a health care worker surveillance component, involving county hospitals and health care facilities
- Make respiratory hygiene etiquette a mandatory requirement for MDCHD staff
- Implement infection control within the MDCHD, in consistency with guidelines given to county hospitals

If Miami-Dade County is affected:

- Implement response plan in full, providing or assuring the provision of all healthcare services needed
- Maintain epidemiologic surveillance of reportable diseases as well as of influenza, including effectiveness of clinical interventions (infection control, treatment, vaccine)
- Implement vaccination campaign according to priority groups and/or following new guidelines from the CDC and the FDOH.

Post Pandemic/Between Waves

- Ensure different personnel shifts at vaccination and treatment sites
- Re-stock medications and supplies according to previous orders and/or requests from either State, CDC, or private providers
- Review case definition, protocols, algorithms, and update them according to new WHO/CDC recommendations and guidelines
- Continue with vaccination program according to plans, priority groups, and availability

3.4 Prevention and Containment

Key participants in prevention and containment strategies include local partners as well as state and federal agencies. The priorities are early identification of cases and their contacts, antiviral treatment, implementation of appropriate infection control strategies (e.g. hand washing, social distancing) and deployment of pandemic vaccine (as it becomes available).

Inter-Pandemic Period – Phases 1 and 2

No new influenza virus subtype has been detected in humans. There may be risk to humans from a currently circulating animal virus

- Develop strategies for acquiring and delivering vaccine during shortages
- Encourage annual influenza vaccination coverage among traditional high-risk groups (e.g. persons aged ≥65 years, those with chronic medical conditions)
- Encourage the Dade County Medical Association and other health care professionals' associations to promote influenza and pneumococcal vaccine coverage in high risk groups
- Identify partners in the community that can assist with mass vaccinations
- Establish vaccination priority groups by occupation, age, and disease risk categories following CDC/FDOH guidelines
- Procure equipment necessary for proper vaccine management and storage
- Establish security plans for vaccine transport, storage, and delivery
- Devise a data management system to track vaccine supply, distribution, and administration
- Develop policies and procedures for mass clinic vaccinations
- Establish legal authority for implementing proposed vaccination distribution plans
- Assess standing policy and legal authority for influenza vaccination of health care workers, workers in essential functions, and persons at high risk. Decide if this policy needs refinement to increase uptake during pandemic alert and pandemic periods.
- Use the Vaccine Adverse Events Reporting System (VAERS) to monitor vaccine safety and efficacy
- Conduct tabletop and field exercises to test and update vaccine distribution and mass clinic plans; use results to improve planning
- Ensure optimal response to animal outbreaks, including measures to reduce infection risk in those involved in the response regarding potential threat, correct use of personal protective equipment, and deployment of antivirals if risk assessment indicates
- Recommend measures to reduce human contact with potentially infected animals (e.g. advice for travelers)
- Prepare for use of further interventions if human infection is detected
- Update information on available supplies of antivirals
- Update recommendations for prophylaxis and treatment with antivirals
- Establish or enhance mechanisms for exchange of epidemiologic data, virological data, and infection control guidance with affected areas.

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

Continue activities from phases 1-2. The follow activities should also be implemented:

- Assess/reassess availability of antivirals
- Review evidence base for effectiveness and safety of antivirals; if necessary, reassess and review strategies, guidelines, and priorities for use with priority organizations
- Reassess emergency methods to increase supply of antivirals
- Review vaccine use strategies with partner organizations
- Resolve liability and other legal issues linked to use of pandemic vaccine for mass or targeted emergency vaccination campaigns, if not yet done
- Assess inventories of vaccines and other material resources needed to carry out vaccinations (e.g. syringes)

If there are any cases in the United States:

- Implement appropriate interventions as identified during contingency planning, in consultation with relevant partners
- Launch a public campaign to encourage prompt self-diagnosis
- Promote handwashing and household disinfection of potentially contaminated surfaces

If there are cases in Miami-Dade County:

- Confine cases (mild and severe) as appropriate to local situation; provide medical and social care
- Conduct voluntary home confinement of symptomatic persons
- Promote use of face masks among symptomatic persons and persons seeking care for respiratory illnesses in risk areas (e.g. waiting rooms)
- Conduct risk assessments among exposed persons; consider recommending masks to them as well
- Conduct trace and follow-up of contacts
- Promote self-health monitoring and reporting if ill among contacts
- Advise persons to avoid contact with high-risk environments (such as infected poultry farms, live-poultry markets)

If associated with animal outbreaks:

- Consider deploying supplies of antivirals for post-exposure (and possibly pre-exposure) prophylaxis of individuals most likely to be exposed to the animal virus
- Promote vaccination with seasonal influenza vaccine to limit risk of dual infection in those most likely to be exposed to the animal virus and decrease concurrent circulation of human strains in the outbreak-affected area

Pandemic Alert Period - 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

Continue activities from previous phases. Also consider these activities:

If there are cases in the United States:

- Implement appropriate interventions identified during contingency planning, and consider any new guidance provided by WHO, CDC, or Bureau of Epidemiology
- Evaluate effectiveness of these measures

If there are cases in Miami-Dade County:

- Use antivirals for early treatment of cases, and consider antiviral prophylaxis for close contacts of cases based on risk assessment and severity of illness in humans
- Conduct voluntary quarantine (such as home confinement) of healthy contacts with health monitoring; provide medical and social care
- Consider closure of schools (including preschool, higher education) in conjunction with other measures (e.g. limiting after-school activities to reduce mixing of children)
- Explore population-wide measures to reduce transmission among adults (close workplaces, discourage mass gatherings)
- Setup fever telephone hotlines with ambulance response
- Setup fever clinics with appropriate infection control interventions
- Assess effectiveness and feasibility of prophylaxis required to contain outbreaks. Determine target population; if intervention agreed, implement as an emergency measure; assess impact.
- Consider deploying prototype pandemic vaccine if available

If there are no cases in the United States:

- Assess need to obtain antiviral stock from national/state level to facilitate rapid implementation of the antiviral strategy (if this becomes necessary).

Recommendations for Dealing with Travel Issues

The CDC and WHO will most likely issue specific alerts related to travel during this phase. Below are some recommendations for travel measures that may be necessary. Many of these measures will not be implemented directly by the health department; the CDC Miami Quarantine Station and Customs and Border Patrol will play an active role in implementation.

- Recommend deferral of non-essential travel to affected areas
- Issue outbreak notices to travelers; recommend that travelers to areas experiencing outbreaks of highly pathogenic avian influenza avoid contact with poultry farms and live animal markets
- Issue health alert notices at borders
- Encourage travelers to and from affected areas to conduct daily self-checking for fever; encourage self-reporting if symptoms appear

- Issue advice on how to behave if ill after travel to affected areas (seek health care, give travel history, receive influenza laboratory test); if pandemic virus detected, patient should be isolated and public health officials notified
- Conduct screening for at-risk travelers (health declaration, questionnaire). This may include screening using thermal scanning or ear temperature measurement.
- Recommend that ill persons postpone travel
- Recommend self-reporting if influenza-like symptoms appear onboard international conveyances from affected areas
- Separate sick travelers (if possible) onboard airplanes, ships, etc.

Pandemic Alert Period - 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].

Phase 4 actions should be continued. In addition:

If there are cases in Miami-Dade County:

- Consider use of antivirals for early treatment of ILI cases
- Assess efficacy and feasibility of prophylaxis to contain outbreaks
- Consider deploying prototype pandemic vaccine (if available)

If there are no cases in Miami-Dade County:

- Modify antiviral strategy based on lessons learned and results from areas with cases
- Adjust priority lists of persons to be vaccinated (if applicable)
- Plan for vaccine distribution and accelerate preparations for mass vaccination campaigns

Pandemic Period - Phase 6

Increased and sustained transmission in general population

Activities from previous phases should be considered. Additionally, consider the following actions

- Implement pandemic vaccine procurement plans; update vaccine recommendations; adjust dosage and schedule based on CDC recommendations; plan logistics of delivery (in conjunction with BOE);
- Implement pandemic vaccine program as availability/resources permit; evaluate safety; monitor supply;
- Review/update recommendations for use of antivirals based on emerging data from affected countries, clinical studies, evidence of resistance, changes to WHO and CDC recommendations, and availability and resources.
- Implement appropriate interventions identified during contingency planning, considering WHO, CDC, and BOE guidance

Post Pandemic/ Between Waves

- Review effectiveness of treatments and countermeasures; update guidelines, protocols, and algorithms
- Evaluate antiviral efficacy, safety, and resistance data; review/update guidelines as necessary; assess supply for subsequent waves
- Assess vaccine coverage, efficacy and safety; review/update guidelines as necessary; begin vaccination of persons not yet immunized in line with plans, priority status and availability; consider incorporation of pandemic strain into seasonal vaccine.

3.5 Communications

Information disseminated during pandemic response should be accurate, consistent, and timely. Information should be provided for public health officials, health care providers and external partners, the media and the general public.

Inter-Pandemic Period – Phases 1 and 2

No new influenza virus subtype has been detected in humans. There may be risk to humans from a currently circulating animal virus

Within MDCHD

- Update MDCHD staff about influenza issues via staff meetings, emails, intranet, etc.
- Maintain an updated organizational outline

With Providers and External Partners

- Educate customers and other health care providers, including hospital ICPs, nursing home ICPs, veterinarians, school nurses, prison/jail nursing staff, day care center providers, law enforcement, emergency medical system, and tourism partners (e.g. Greater Miami Convention and Visitors Bureau, Miami Beach Visitor and Convention Authority) via local and national meetings
- Test Blast Fax communication system on a regular basis
- Include updated influenza information in the OEDC Epi Monthly report
- Coordinate external partner calls with the Office of Public Affairs (OPA) as needed

With the BOE and Other CHDs

- Monitor influenza activity and report updates using EpiCom
- Participate on DOH bi-weekly conference calls
- Review and update influenza information on the MDCHD website as indicated

With the Public

- Review updated materials from FDOH, CDC, WHO, and other appropriate websites
- Develop templates for news releases in advance of a pandemic
- Maintain an updated list of MDCHD media representatives (Office of Public Affairs)
- Develop an influenza tool kit following BOE tool kit model
- Maintain a well-trained and prepared PIO team for response
- Provide information to the public in English, Spanish and Creole about flu season, ways to avoid becoming ill, vaccination, and pandemic influenza via the MDCHD website, press releases, health fairs, fact sheets, and monthly reports
- Establish mechanism for coordinating communications with county and state veterinarians
- Provide fast communication system to answer questions from health care-providers and the public
- Provide accurate information about risk of infection, food safety, and animal handling based on WHO recommendations
- Provide clear information about stigmatization of individual/groups in contact with the animal strain

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

Activities from previous phases should continue. Additionally:

- Using appropriate communications kit, prepare public information news releases, background information, FAQs, and other information as necessary in conjunction with the OEDC
- Prepare and keep ready a list of potential questions with available answers
- Review and revise, as needed, drafts of public information documents
- Meet with the PIO partners to devise a plan for collaborative dissemination of regular, relevant, and timely surveillance data
- Continue to maintain updated databases of DOH staff, MDCHD staff, and health care providers
- Continue to test the Blast Fax system as needed
- Receive regular updates from other CHDs, BOE, CDC and the WHO
- Develop appropriate materials and forms in English, Spanish and Creole
- Provide clear information about stigmatization of individual/groups in contact with the animal strain
- Disseminate information about travel recommendations according to CDC guidelines
- Ensure that communication systems and facilities are working properly

Pandemic Alert Period - 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

- Continue phase 3 activities
- Conduct external partner calls as necessary

- Review and approve changes to the county's influenza tool kit
- Disseminate CDC alerts and Advisory Notices when issued via Blast Fax and Epi Monthly
- Customize CDC, WHO, and FDOH guidelines for Miami-Dade partners and distribute as needed
- Review supplies of educational materials; post and distribute to health care partners
- Reinforce messages about prevention of human-to-human spread
- Provide instructions in English, Spanish and Creole about self-protection
- Update local and state authorities and the public about the domestic and international epidemiological situation and disease characteristics
- Review emergency communication plans
- Update information messages
- Develop materials on general health protection education
- Reinforce infection-control measures in health-care settings, long-term care facilities and the community

If Miami-Dade County is affected:

- Provide updated information on outbreak status (on a weekly basis) to FDOH and external partners (e. g. health care providers, media, hospital liaisons, EOC)
- Provide a daily respiratory outbreak status report to the OEDC Director, MDCHD Administrator, BOE, and community partners
- Review daily the CDC, WHO, DOH, and BOE websites
- Review and update weekly the MDCHD website
- Develop organizational plan for epidemiologic and medical consultative hotline
- Provide information on all aspects of the outbreak response and follow-up steps to Miami-Dade County residents and tourists

Pandemic Alert Period - 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]

- Promote rapid sharing of information among health partners and risk communication groups (e.g. law enforcement, emergency management systems, etc.)
- Communicate to the community about influenza disease potential and the local plan of action
- Provide updates to the public about surveillance and vaccine delivery
- Activate the Epidemiology Response Team (EpiRT) and other volunteers to support the public hotline
- Disseminate CDC alerts and advisories through Blast Fax
- Conduct conference calls with the MDCHD administrator as needed
- Review content and update MDCHD website
- Continue daily review of CDC and WHO websites
- Coordinate internal MDCHD conference calls
- Participate on BOE conference calls
- Disseminate WHO and CDC travel recommendations
- Disseminate information about national and international influenza progress

Pandemic Period - Phase 6

Increased and sustained transmission in general population

- Provide information on the progress of the pandemic in affected areas to the public, professional partners, and the media
- Provide messages about the importance of compliance with public health measures
- Review communications strategies and systems in case of imminent pandemic

If Miami-Dade County is affected:

- Adopt a communications matrix that includes the audience, urgency and sensitivity
- Activate the epidemiology consultative hotline
- Share collected data with all participating facilities
- Review EpiCom content daily
- Conduct daily calls with MDCHD Administrator and Chief Physician
- Conduct daily briefings for medical and epidemiology content
- Review daily the WHO and CDC websites
- Conduct calls with external partners, the Miami-Dade County Office of Emergency Management (OEM), and the State Emergency Operations Center (SEOC) as needed
- Update guidelines for health care professionals
- Continue to provide CDC Alerts and Advisory Notice through Blast Fax
- Disseminate WHO and CDC travel recommendations

Post Pandemic/Between Waves

- Return to inter pandemic phase
- Withdraw from involvement with Miami-Dade OEM
- Evaluate communications response through meetings with the pandemic response partners
- Make revisions to the communications section of the pandemic influenza plan as necessary

4. Appendices

4.1 PANDEMIC INFLUENZA PHASES AND OVERARCHING PUBLIC HEALTH GOALS

Phases	Overarching Public Health Goals
<p>Interpandemic period</p> <p>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.</p> <p>Phase 2. No new influenza virus subtypes have been detected. However, a circulating animal influenza virus subtype poses a substantial risk of human disease.</p>	<p>Strengthen influenza pandemic preparedness at the global, regional, national, state, and local levels.</p> <p>Minimize the risk of transmission to humans; Detect and report such transmission rapidly if it occurs.</p>
<p>Pandemic alert period</p> <p>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.</p> <p>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.</p> <p>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).</p>	<p>Ensure rapid characterization of the new virus subtype and early detection, notification and response to additional cases.</p> <p>Contain the new virus within limited foci or delay spread to gain time to implement preparedness measures, including vaccine development.</p> <p>Maximize efforts to contain or delay spread, to possibly avert a pandemic, and to gain time to implement pandemic response measures.</p>
<p>Pandemic period</p> <p>Phase 6. Pandemic: increased and sustained transmission in general population</p>	<p>Minimize the impact of the pandemic.</p>

- The distinction between **phase 1** and **phase 2** is based on the risk of human infection or disease resulting from circulating strains in animals. The distinction is based on various factors and their relative importance according to current scientific knowledge. Factors may include pathogenicity in animals and humans, occurrence in domesticated animals and livestock or only in wildlife, whether the virus is enzootic or epizootic, geographically localized or widespread, and/or other scientific parameters.
- The distinction between **phase 3**, **phase 4** and **phase 5** is based on an assessment of the risk of a pandemic. Various factors and their relative importance according to current scientific knowledge may be considered. Factors may include rate of transmission, geographical location and spread, severity of illness, presence of genes from human strains (if derived from an animal strain), and/or other scientific parameters.

4.2 GLOSSARY

Influenza-like illness (ILI) definition: consists of fever (≥ 100.4 ° F) and either cough and/or sore throat

4.3 EPIDEMIOLOGY OF PANDEMIC INFLUENZA

Description and cause: Influenza is a highly infectious viral illness. The name “influenza” originated in 15th century Italy from an epidemic attributed to “influence of the stars.” The first pandemic or world-wide epidemic that clearly fits the description of influenza was in 1580. At least four pandemics of influenza occurred in the 19th century and 3 occurred in the 20th century. The pandemic of “Spanish flu” in 1918–1919 caused an estimated 21 million deaths worldwide.

There are three ‘types’ of influenza viruses that cause disease in humans: A, B, and C. Influenza A usually cause pandemics with moderate to severe illness, affecting all age groups. Influenza B generally causes milder disease than type A, and affects only humans, primarily children. Influenza C is rarely reported as a cause of human illness. The nomenclature to describe the type of influenza virus is expressed in this order: (1) virus type, (2) geographic site where it was first isolated, (3) strain number, (4) year of isolation, and (5) virus subtype. Examples are A/New Caledonia/20/99 (H1N1), A/Moscow/10/99 (H3N2)-like virus, B/Hong Kong/330/2001.

Influenza A subtypes are classified by the antigenic properties of surface glycoproteins hemmagglutinin (H) and neuraminidase (N). In addition to the highly transmissible nature of influenza, the virus can change its antigenic structure, resulting in novel sub-types to which humans have little or no immunity. These major shifts in viral subtypes are associated with influenza pandemics. New sub-types of influenza virus may be transmitted globally within 3-6 months.

Symptoms: Seasonal influenza is usually characterized by fever, headache, body ache, prostration, coryza, sore throat and cough. Symptoms in pandemic influenza may vary depending on the circulating viral strain causing the pandemic. Symptoms of avian influenza in humans (which may be caused by H5 or H7 virus subtypes and that has the potential to cause a pandemic) have ranged from typical influenza-like symptoms (fever, cough, sore throat, sore eyes, muscle aches) to eye infections (conjunctivitis), pneumonia, acute distress (breathing difficulty), viral pneumonia, and other severe and life-threatening complications. These symptoms are generally accompanied by a history of visiting a poultry farm or market with known bird infection or a history of processing laboratory samples from patients or birds with the disease.

Mode of transmission: In seasonal influenza epidemics, airborne spread predominates in crowded populations, but direct contact is also implicated. Unprotected coughs and sneezes generally facilitate transmission from hands to mucous membranes. The mode of transmission may not be the same in all pandemics, as pandemics may be caused by varying viral strains with different transmission routes. In the case of the H5N1 viruses currently circulating in Asian and European countries, transmission thus far has occurred through direct contact with infected poultry or contact with surfaces contaminated by droppings and secretions of infected poultry.

Incubation and Period of Communicability: The time from exposure to illness onset is usually short in seasonal epidemics, ranging from 1 to 3 days. The virus is usually transmissible for about 3-5 days after the appearance of symptoms in adults (up to 7 days in young children). The incubation period for the currently circulating H5N1 avian flu virus ranges from 1 to 5 days. The

period of communicability for H5N1 avian influenza has not been determined, in part because effective and sustained human-to human transmission has not been documented.

Prevention: 1- Education in basic personal hygiene is critical for the public and health care personnel. 2- Vaccination for seasonal influenza is recommended. Although it is usually not protective against strains responsible for pandemics, it can decrease the risk of reassortment between the novel strain and currently circulating strains. Healthcare personnel should be immunized annually to prevent absenteeism during epidemics and pandemics. 3- Influenza-like outbreaks and laboratory-confirmed influenza cases should be reported to local health authorities in order to maintain an adequate level of surveillance and a rapid response for preventing further spread. 4- Maintaining an adequate supply of antiviral drugs would be desirable in order to treat high-risk patients and first responders.