Annex 8. Community Disease Control and Prevention

Person responsible: Influenza Surveillance Coordinator
Back up: Infectious Disease Epidemiology Program Manager

Rationale:

Community disease control and containment measures are intended to limit the spread of a pandemic, and mitigate the impact on the people, the infrastructure, the economy, and the society in general. The interventions described here are non-pharmaceutical mitigation strategies with the primary goal of social distancing, which is the decreasing of contact among people in order to slow transmission of influenza. The strategies include both individual and community actions. These measures will be particularly important in the absence of an effective vaccine and a limited supply of antivirals.

Assumptions:

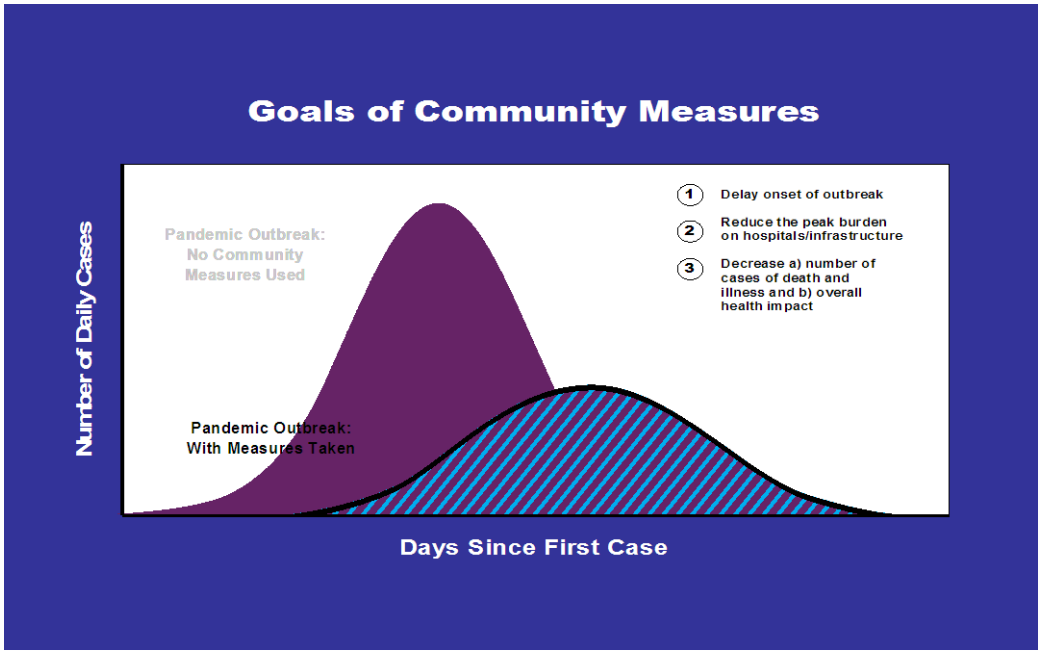
- Vaccines will not be available for up to 6 months from the onset of a pandemic and may be in short supply.
- Antivirals may not be sufficiently available or effective preventatively.
- An informed and responsive public is essential to minimizing the health effects of a pandemic and the resulting consequences to society.
- Attempts to reduce person-to-person viral transmission will prevent or delay influenza outbreaks.
- Community mitigation strategies will decrease the need for health care services (decreasing the likelihood of medical surge on health care facilities).
- Community mitigation strategies should target those at the center of transmission and those most vulnerable to the circulating virus.
- Community mitigation strategies should be initiated early and continue while the virus is still circulating in the community.
- The community mitigation strategies will have negative consequences in-and-of themselves in addition to the effect of the pandemic e.g., school closure on worker absenteeism, public resistance to quarantine and isolation.
- Individual measures will likely be more effective in pre-pandemic and early stages
- Community measures will likely be more effective when transmission is already occurring

Overview:

This Annex will define recommended disease control and containment strategies intended to prevent or decrease viral transmission between people. The use of non-pharmaceutical community disease control and containment measures has three goals:

1. Delay the exponential growth in incident cases and shift the epidemic curve to the right in order to buy time for production and distribution of a specific pandemic strain vaccine,
2. Decrease the epidemic peak, and
3. Reduce the total number of incident cases, thus reducing community morbidity and mortality." HHS, PIP p9

It is thought that a decrease in epidemic peak will reduce the likelihood of a medical surge on health care facilities creating a better fit between medical need and capacity to respond. The chart below illustrates the anticipated impact of effective community mitigation interventions on the distribution of cases over time.



Interim Pre-pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States , CDC, 2007, p 18.

In this Annex, the community mitigation strategies have been organized within the framework of the Maine Pandemic Levels / Periods. Generally, the recommendations for the Maine Inter-Pandemic and Maine Pandemic Alert Periods focus primarily on public education and preparedness/readiness planning for the implementation of disease control and containment measures. These recommendations emphasize individual level measures including hand hygiene, cough etiquette, isolation of possible cases and quarantine of exposed persons. During the Maine Pandemic Period, with an increasing number of cases in the community, the emphasis is on

broader, community-based containment strategies including cancellation of public events, school closures, movement restrictions, and alternative care sites.

"Decisions about what measures should be used during a pandemic should be based on the observed severity of the event, its impact on specific subpopulations, the expected benefit of the interventions, the feasibility of success…, the direct and indirect costs, and the consequences on critical infrastructure, healthcare delivery, and society." (HHS, PIP, p9) Specific factors to be considered in determining a threshold for initiating containment measures include:

- numbers of cases and close contacts,
- number of cases per town,
- number of cases per week,
- characteristics of local disease transmission (i.e., speed of spread, number of generations)
- pandemic transmissibility is defined as a 20-40% illness rate in the population
- types of exposure categories (travel-related, close contact, health care worker, unlinked transmission, etc.),
- morbidity and mortality rates,
- extent of community influx and efflux,
- availability of local health care and public health resources.

Consider community containment interventions by severity and transmissibility within the context of scalability as noted below:

	HTH Transmissibility (Illness Rate in the Pop)		
	Low Rare	**Medium 5%-20%**	**High 20%-40%**
	Pandemic Severity Index (Case Fatality Ratio)		
Interventions by Setting	**1 Low <0.1 CFR**	**2 and 3 Medium 0.1 - <1.0 CFR**	**4 and 5 High 1.0- = >2.0 CFR**
Planning and education	Recommend	Recommend	Recommend
Individual isolation • Ill persons	Home exclusion	Home exclusion	Home exclusion
• Close contacts	Generally not recommended	Consider home exclusion	Consider home exclusion
Community settings • Schools/daycares	Exclude ill	Consider limiting activities	Consider closure
• Workplaces	Exclude ill	Consider limiting activities	Consider closure

• Places of worship	Exclude ill	Consider limiting activities	Consider closure
• Public events	No recommendations	Consider limiting	Consider cancellations
• Recreational facilities	No recommendations	Consider limiting	Consider closure
• Public transportation	No recommendations	Consider limiting	Consider cancellations

Adapted from: (Interim Pre-pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States CDC, p36)

Implementing community containment interventions too early can lead to "intervention fatigue" and unnecessary hardships. Initiating the interventions too late will limit the public health benefits. It will be a challenge to determine the optimal time to implement, particularly the response strategies. Proper timing will depend on sensitive and timely surveillance. That said, it will be better to err on the side of early actions rather than late. Once placed in a reactive response mode, the situation is likely to be lost from the standpoint of mitigation.

Maine Center for Disease Control (Maine CDC) is the lead state agency for isolation, quarantine, and community-wide infection control recommendations. The Maine Emergency Management Agency (MEMA) is the lead state agency for all other community-level disease containment measures, with Maine CDC making recommendations to activate the measures in consultation with appropriate federal agencies.

Maine CDC will assess disease containment measures on an ongoing basis during a pandemic since the effectiveness, feasibility, and necessity for them will change based on the level of disease transmission in the state as a whole, as well as in particular areas of the state. If community-wide containment measures are implemented, it is also critical to determine when to scale them back. The Maine CDC will make recommendations for lifting community containment measures based on evidence of improving local/regional control of virus transmission.

Annex 8. Community Disease and Control Prevention

Maine Inter-Pandemic Period

Mitigation and Preparedness
ME Level 0, I, II

1. Planning and education
    a. Conduct annual influenza prevention campaign regarding vaccination, respiratory hygiene, staying home when ill, and hand hygiene (No Flu 4 You)
    b. Encourage annual influenza vaccination for everyone over 6 months of age
    c. Provide ongoing public education
    d. Monitor routine communications including weekly surveillance reports, HAN's, press release, and public health updates
    e. Facilitate, support, and engage in pan flu planning regarding community containment measures with community partners regarding least to worst case scenarios (scalable)
    f. Convene Advisory Board of stakeholders for pandemic flu planning
        i. Facilitate, support and engage in training and exercising of the plans with community partners according to NIMS/ICS unified command structure
        ii. Assist with community partners pan flu planning as needed (ie MEMA, police and fire, EMS, hospitals, schools, businesses, etc.)
2. Individual isolation
    a. Ill persons
        i. Recommend all ill individuals isolate themselves at home
    b. Close contacts
        i. Recommend monitoring for illness, no restrictions if asymptomatic
3. Community settings
    a. Schools/daycares
        i. Encourage home isolation of ill individuals
        ii. Recommend monitoring and reporting of outbreaks (ie absenteeism greater than 15% with the majority reporting respiratory symptoms)
        iii. Encourage pan flu planning at the school and district level
        iv. Offer educational materials including signs, symptoms, prevention, respiratory etiquette, and vaccination

b. Workplaces
    i. Encourage home isolation of ill individuals
    ii. Recommend monitoring and reporting of outbreaks
    iii. Encourage pan flu planning at the individual site level
    iv. Offer educational materials including signs, symptoms, prevention, respiratory etiquette, and vaccination
c. Places of worship
    i. Encourage home isolation of ill individuals
    ii. Offer educational materials including signs, symptoms, prevention, respiratory etiquette, and vaccination
d. Public events
    i. Encourage home isolation of ill individuals
    ii. Offer educational materials including signs, symptoms, prevention, respiratory etiquette, and vaccination
e. Recreational facilities
    i. Encourage home isolation of ill individuals
    ii. Offer educational materials including signs, symptoms, prevention , respiratory etiquette, and vaccination
f. Public transportation
    i. Offer educational materials including signs, symptoms, prevention, respiratory etiquette, and vaccination

Maine Pandemic Alert Period

Heightened Preparedness: On Standby
ME Levels III, IV

1. Planning and education
    a. Monitor weekly/daily surveillance reports
    b. Supply timely situational awareness to partners and citizens as frequently as needed
    c. Continue public education efforts
2. Individual isolation
    a. Ill persons
        i. Recommend all ill individuals isolate themselves at home
    b. Close contacts
        i. Consider isolation of exposed individuals (either through contact with ill individual, or through geographic exposure (time and place))
        ii. Recommend all contacts monitor for symptoms

3. Community settings
    a. Schools/daycares
        i. Recommend enhanced surveillance to monitor for illness
        ii. Continue education efforts
    b. Workplaces
        i. Recommend enhanced surveillance to monitor for illness
        ii. Continue education efforts
    c. Places of worship
        i. Continue education efforts
    d. Public events
        i. Continue education efforts
    e. Recreational facilities
        i. Continue education efforts
    f. Public transportation
        i. Continue education efforts

Maine Pandemic Period

Activate Response Plan
ME Levels V, IV

1. Planning and Education
    a. Monitor and supply timely situational awareness, ongoing; as frequently as indicated
    b. Continue public education efforts
2. Individual isolation
    a. Ill persons
        i. All ill individuals should be isolated at home or in a designated isolation or quarantine area
    b. Close contacts
        i. Consider isolation or quarantine either at home or in a designated area
3. Community settings
    a. Schools/daycares
        i. Consider limiting activities or closure, depending on available information

ii. Enhance surveillance for ill individuals

b. Workplaces
   i. Consider limiting activities (ie telecommute, cancel conferences meetings, staggered schedules)
   ii. Consider closure
   iii. Enhance surveillance for ill individuals

c. Places of worship
   i. Consider limiting activities (ie cancelling social activities)
   ii. Consider closure of facilities

d. Public events
   i. Consider limiting or cancelling activities

e. Recreational facilities
   i. Consider limiting or cancelling activities

f. Public transportation
   i. Consider limiting use or canceling services
      1. May consider implementing screening prior to use (ie airport screening)

Maine Post Pandemic Recovery

Recovery Activities
ME Levels VII

1. Planning and education
   a. Monitor routine surveillance reports
   b. Supply timely situational updates as needed
   c. Keep public informed with resources available (what is open, where supplies are located, where counseling may be available etc.)
2. Individual isolation
   a. Ill persons
      i. Return to home isolation for all ill individuals
   b. Close contacts
      i. Lift quarantine and isolation restrictions
      ii. Encourage close contacts to monitor for symptoms
3. Community settings

a. Schools/daycares
    i. Reopen or resume normal activities
    ii. Continue educational efforts
b. Workplaces
    i. Reopen or resume normal activities
    ii. Continue educational efforts

Annex 8. Community Disease Control and Prevention Summary Matrix

Service / Function: **Community Disease Control & Prevention**	**Maine Inter-Pandemic Period: Awareness** **Mitigation/ Preparedness** **ME Level 0, I, II**	**Maine Pandemic Alert Period: Standby** **Heightened Preparedness** **ME Levels III, IV**	**Maine Pandemic Period: Activate Response Plan** **Response** **ME Levels V, IV**	**Maine Post Pandemic Recovery Period** **Recovery** **ME Levels VII**
Planning and education	Influenza prevention, ongoing public education, pan flu planning and support, communication to the public→	Monitor surveillance data, situational reports, public education→	Monitor and supply situational reports, public education→	Monitor routine surveillance reports, supply situational reports, keep public information of resources available
Individual isolation • Ill persons	Home isolation→	Home isolation→	Home isolation or isolation in designated area→	Home isolation
• Close contacts	Monitor for illness→	Consider isolating or quarantining persons with epi link, monitor for illness→	Consider isolating or quarantining persons with epi link, monitor for illness →	Monitor for illness
Community settings • Schools/daycares	Home isolation of ill individuals, monitor for outbreaks, pan flu planning, education→	Enhanced surveillance to monitor for illness, education→	Consider limiting activities or closure, enhanced surveillance→	Reopen or resume normal activities, education
• Workplaces	Home isolation of ill individuals, monitor for outbreaks, pan flu planning, education →	Enhanced surveillance to monitor for illness, education →	Consider limiting activities or closure, enhanced surveillance→	Reopen or resume normal activities, education
• Places of worship	Home isolation of ill individuals, education→	Education→	Consider limiting activities or closure→	Reopen or resume normal activities, education

• Public events • Recreational facilities • Public transportation	Home isolation of ill individuals, education→	Education→	Consider limiting or cancelling activities→	Resume normal activities, education
	Home isolation of ill individuations, education→	Education→	Consider limiting or cancelling activities→	Resume normal activities, education
	Education→	Education→	Consider limiting use or cancelling services, may implement screening→	Reopen or resume normal operations, education

Appendix to Annex 8 Community Disease Control and Prevention

The following Appendices elaborate on the disease control and community containment measures, and guide community planning (Information source: HHS, PIP):

I. Isolation and Quarantine
II. Isolation and treatment of Ill Persons
III. Quarantine of Household Contacts of Ill Individuals
IV. Preparedness Checklist for Community Containment Measures
V. Containment Measures: Terms and Definitions

I. HHS Isolation and Quarantine

1. **Isolation and quarantine** are strategies that may be used as part of the overall effort to prevent and control the transmission of a novel influenza strain among humans. Isolation of patients with certain communicable diseases occurs routinely in healthcare facilities. Patients who are infectious with a novel influenza virus will be isolated while hospitalized during all phases of an influenza pandemic. In addition, non-hospitalized infectious patients will be requested to isolate themselves at home during the infectious period during a pandemic. In contrast, the use of quarantine of individuals to control the spread of a novel influenza virus would be expected to be limited to the very early and perhaps the late phases of a pandemic. Because influenza has a short incubation period and people infected with the virus are infectious prior to development of symptoms, quarantine may be a resource-intensive strategy with little benefit for disease control when there is sustained transmission of a novel influenza virus in a community. Quarantine of close contacts may be most effective during the pandemic alert period when limited human-to-human transmission has been documented and during the early pandemic period when the scope of the outbreak is focal and limited.

Isolating influenza cases separates them from healthy persons and restricts their movement, thereby preventing transmission to others. It also allows for the focused delivery of specialized health care to ill persons. Quarantining persons who may have been exposed to influenza, but who are not ill, is intended to identify those at greatest risk for developing influenza and to prevent transmission to others. Quarantine allows for the monitoring of symptoms and the institution of appropriate isolation procedures as soon as symptoms are detected. In this way, quarantine reduces both the period of infectiousness and the number of persons potentially exposed.

It is anticipated that most people who are requested to isolate or quarantine themselves would so do voluntarily upon recommendation of Maine CDC. However, Maine CDC may seek court orders for isolation and quarantine if it determines that legal action is appropriate to protect public health. In appropriate circumstances, measures short of quarantine may be implemented to slow or limit disease spread including symptom watch and active monitoring (without movement restrictions) of people who may have been exposed to a novel influenza virus. Isolation and quarantine may occur in Maine at the request of federal or state authorities, or on Indian lands. Maine CDC will work closely with the federal CDC to assist with community containment measures for passengers arriving on international or domestic flights (e.g., screening passengers for symptoms, and implementing isolation or quarantine). Maine CDC will also work with tribal health directors, as well as the federal CDC and the Indian Health Service, to make recommendations on disease containment measures on Maine's Indian reservations. When community transmission of a novel influenza virus is occurring in Maine and quarantine of exposed individuals is not effective or feasible, other disease containment measures may be used

Infection control precautions and procedures for cases can be located in Infection Control, Annex 4 of the HHS Plan.

2. **Management of Close Contacts -** In most situations – even in the earliest stages of a pandemic – it may not be possible to trace and quarantine close contacts of suspected or

confirmed cases within the relatively short time period of incubation for influenza. However, in certain situations, especially during the later phases of the Maine Pandemic Alert Period, efforts to identify exposed individuals or groups may be recommended. Examples may include close contacts of:

- Suspected or confirmed cases of novel influenza in individuals who have traveled to an affected country and have been exposed to sick poultry, pigs or other offending animal, or a laboratory-confirmed case of the circulating virus.
- Suspected or confirmed cases of the novel virus in travelers on airplanes about to arrive in the U.S.
- Suspected or confirmed cases of a novel virus of any type in people with known exposure to sick poultry or birds, pigs or other offending animal in the U.S.
- Clusters of a novel flu virus in small, well-defined settings, such as a National Guard Base
- Cases of laboratory exposure to a novel flu virus with the potential to cause a pandemic

3. **Containment Measures for Individuals** - Patients with suspected or confirmed influenza should be isolated, using appropriate infection control measures. Contact tracing, monitoring, and quarantine of close contacts may be effective only in the earliest stages of a pandemic. Because the usefulness and feasibility of these measures will be limited once the virus has started to spread, consideration should be given to community-based measures that reduce disease transmission by "social distancing." Social distancing measures are aimed at reducing contact among people without regard to exposure status (e.g., suspending public events and conducting work from home). In contrast, individual quarantine focuses on identifying people who have been exposed to disease and restricting the activities of only those people.

4. **Community-based Containment** - HHS divides community-based containment measures into two broad categories: measures that affect groups and measures that affect entire communities.

i. Group measures include:

- Quarantine of specific groups of people with a common exposure to a novel influenza virus (e.g., people exposed at a public gathering, on an airplane, or at their school or workplace)
- Restrictions on use of specific sites or buildings in order to increase social distance (e.g., cancellation of public events, and closure of recreational facilities)

ii. Community-wide measures include:

- Promotion of community-wide infection control measures (e.g., respiratory hygiene and cough etiquette)
- "Snow days" and self-shielding
    - Closure of schools, office buildings, shopping malls, and public transportation
    - Widespread community quarantine (*cordon sanitaire*)

5. General HHS Recommendations

- Isolation of case-patients is recommended during the period of infectivity for pandemic influenza.
- Most patients with pandemic influenza will be able to remain at home during the course of their illness (with family members taking infection control precautions).
- People who have been exposed to influenza may need to stay in quarantine for as long as 10 days (may be modified depending on epidemiology of the virus). Note: Experience with seasonal influenza suggests the incubation period is 1-4 days, with an average length of 2 days. However, the clinical behavior of a novel influenza virus may be different and the incubation period could potentially be as long as 10 days. The HHS Plan states that pandemic influenza preparedness activities should plan for measures that may last between 1-10 days, and 10 days is referred to as the incubation period; however, public health authorities are advised that they should be prepared to adjust the time frame as more is known about the virus.
- "Snow day" may be instituted for an initial 10-day period, with final recommendations and durations based on epidemiological and social assessments. Consideration in planning should be given to personnel who maintain essential functions in the community.
- People at high risk for complications from influenza will be advised to avoid public gatherings when pandemic influenza is in the community.
- Under work quarantine, employees are permitted to work, but must strictly observe activity restrictions (quarantine) while off-duty. Monitoring for influenza-like illness before reporting for work may be required. Work quarantine would apply to people for whom quarantine is indicated, but who provide essential services (e.g., healthcare workers).

II. Isolation and Treatment of Ill Persons

Isolation in Hospital

Preventing influenza transmission requires limiting interactions between influenza cases and others. Influenza cases should be admitted to a health care facility/hospital for the purpose of isolation, especially during early stages of the pandemic, only if their clinical condition warrants, or if isolation in the home or alternate facility cannot be achieved effectively.

If an isolation room is not available for a patient admitted to a health care facility/hospital, the patient should be placed in a room with a patient(s) with suspected or confirmed influenza (cohorting). When a private room is not available and cohorting is not possible, a spatial separation of at least 3 feet should be maintained between the infected patient and other patients or visitors. Special air handling and ventilation is not necessary, and the door may remain open.

Grouping patients may be difficult to accomplish in many hospitals, and facilities need to develop plans based on their individual resources (personnel, facility design, etc.). The following is HHS's suggested hierarchical approach:

- When possible, place patients with documented or suspected influenza in a private room

- When the number of patients with influenza exceeds the available private rooms, try to place influenza cases together in multi-bed rooms or wards
- When patients with and without influenza must be placed in a room together, try to avoid including uninfected patients most susceptible to influenza complications
- When multiple influenza cases are admitted, minimize the number of staff having contact with infected patients by assigning all influenza patients to a single or small group of health care personnel, who have been vaccinated and/or are taking antiviral medications for prophylaxis (if medications available and appropriate)
- When numerous cases are identified, consider placing all patients with documented or suspected influenza in one designated unit or ward (i.e., an influenza cohort) and assign vaccinated health care personnel to work in the designated influenza cohort unit

It may be preferable for affected individuals to be monitored in their own homes, if certain requirements are met. For example, if there is an immuno-suppressed person also inhabiting the home, monitoring in an alternate, non-hospital facility may be necessary. An example of a feasible alternate lodging facility may include a motel room, with a separate entrance to the outside/outdoors, a private bathroom, perhaps a small refrigerator and/or microwave, and communication capabilities to the outside (by telephone).

Isolation at Home

The following measures are recommendations for isolating influenza cases in residential settings (homes) and alternate facilities (motels).

Basic Activities

1. Before an influenza case is confined to the home; the residence should be assessed to be certain that it has the features necessary for the provision of proper care and proper infection control measures. The primary caregiver, the patient, or a public health worker may conduct this assessment.

2. Isolation facilities should meet the following minimum requirements:
   a. Primary caregiver (family member) available, if necessary, to assist the patient with basic needs
   b. Functioning telephone, electricity, and drinkable water
   c. Separate bedroom that will be occupied only by the influenza case and with a door that can be kept closed at all times
   d. Separate bathroom that is designated for use only by the influenza case

During the period of isolation, household members of influenza cases who are not providing care to the ill individual should be relocated, if possible. Alternatively, the influenza patient could be relocated to another site within the community (a motel room).

If relocation is not possible, then interactions between the influenza patient and the household members should be minimized. Persons at risk of serious influenza complications—those with

underlying medical diseases such as underlying heart or lung disease, persons with diabetes mellitus, and the elderly—should not interact with the ill individual.

All persons in contact with the influenza case should be educated regarding appropriate infection control practices, including hand hygiene and environmental decontamination. Influenza patients should wear a surgical mask during close contact (less than 3 feet) with uninfected persons to prevent the spread of infectious droplets. If an influenza patient is unable to wear a surgical mask, then household members should don a surgical mask when interacting with the patient.

Enhanced Activities: Isolation of Influenza Patients in Community Facilities

If home isolation is not feasible for certain individual patients, then alternate facilities in the community may need to be used for isolating influenza cases and/or their asymptomatic contacts. Influenza pandemic preparedness planning must address the availability and use of existing structures, the management of patients lodged in these facilities, and resources for securing supplies to isolated and quarantined individuals.

Consider the use of both existing structures (e.g., nursing homes, apartments, motels, and schools) and temporary structures (e.g., trailers, barracks, tents, or "bubble systems")

Consider the following features in assessing appropriateness of sites:

- Separate rooms for patients
- Independent ventilation for each room
- Access control to each room
- Availability of potable water, bathroom, and shower facilities
- Capacity for providing basic needs to patients
- Rooms and corridors amenable to disinfection
- Facilities for collecting and disposing of waste materials
- Facilities for collecting and laundering items
- Ease of access for delivery of supplies
- Legal/property considerations
- Ability to support appropriate infection control measures
- Availability of food services and supplies
- Ability to provide an environment that supports the social and psychological well-being of patients
- Ability to support appropriate medical care
- Access to communication systems that allow for dependable communication within and outside the facility (telephones)

III. Quarantine of Household Contacts of Ill Individuals

Basic Activities

In a limited influenza outbreak, close contacts of influenza cases may be managed through either active or passive monitoring and without any restriction of movement unless they develop symptoms of disease. Consideration should be given to quarantine of contacts with high-risk exposures (e.g., health care workers involved in aerosol-generating procedures on an influenza patient) even in the absence of symptoms.

Contacts of influenza cases may be advised to:

- Remain vigilant for fever or respiratory symptoms for 6 days after exposure. Temperature readings should be taken and recorded twice a day
- Seek health care if symptoms (e.g., cough, fever, shortness of breath) become severe
- Inform health care provider in advance of presenting at the clinic or hospital that individual has been exposed to influenza and is now symptomatic

Enhanced Activities

In the event of a large influenza outbreak or high-risk exposure (e.g., exposure of health care personnel during intubation of an influenza patient) quarantine of asymptomatic contacts may be considered as a means of interrupting disease transmission.

Quarantine represents a range of possible interventions that could be applied at the level of the individual, small group, or community. Quarantine may be used for:

- Individuals with close contact (e.g., household contact) to a known influenza case
- Small groups with close contact (e.g., co-workers, health care workers with unprotected exposure) to an influenza case
- Larger groups with an unspecified extent of exposures (e.g., social groups, persons in congregate settings, passengers on airplanes) to an influenza case
- Communities in which the extent of influenza exposure for individuals is unknown but interventions are needed to control potential population exposures by increasing social distance and limiting interactions and movement within a community

Types of quarantine include:

- Home quarantine — Quarantine at home is most suitable for contacts that have a home environment in which their basic needs can be met and where the protection of unexposed household members is feasible.
- Quarantine in designated facilities — Contacts who do not have an appropriate home environment for quarantine or contacts who do not wish to be quarantined at home may be quarantined in specific facilities (motels, nursing homes, apartments, etc.) designated for this purpose.
- Work quarantine — This applies to health care workers or other essential personnel who have been exposed to influenza cases and who may need to continue working (with appropriate infection control precautions) but who are quarantined either at home or in a designated facility during off-duty hours.

The minimum criteria that must be met to enable the optimal implementation of home quarantine include:

- Access to educational materials about influenza and quarantine
- Ability to monitor one's own symptoms (or have them monitored regularly by a parent, guardian or caregiver)
- Basic utilities (water, electricity, functional plumbing/septic system, garbage collection, and heating and air conditioning as appropriate)
- Basic supplies (clothing, food, hand hygiene supplies, laundry services, etc.)
- Mechanisms for communication, including telephone (for monitoring by health staff, reporting of symptoms, and accessing support services) and a computer if possible
- Access to food and food preparation
- Access to health care providers, health care centers, and ambulance personnel
- Access to supplies such as thermometers, fever logs, phone numbers for reporting symptoms or accessing services, emergency numbers, etc.
- Availability of mental health/psychological support services

Management of Household Members of Contacts in Home Quarantine

No specific precautions are needed for household members of contacts who are in home quarantine, as long as the person under quarantine remains asymptomatic. Household members of quarantined individuals can go to school, work, etc., without restrictions. If the contact develops symptoms, then s/he should immediately notify medical/public health authorities to obtain medical evaluation, and at that point, household members should remain at home.

Monitoring of ill households including contacts

Maine has multiple means of communicating with community members to obtain information regarding ill members of the household and to provide educational messages and directives.

IV. Preparedness Checklist for Community Containment Measures (HHS, PIP)

General

- Establish an incident command structure that can be used for influenza response.
- Establish a legal preparedness plan.
- Establish relationships with partners, such as law enforcement, first responders, healthcare facilities, mental health professionals, local businesses, and the legal community.
- Plan to monitor and assess factors that will determine the types and levels of response, including the epidemiologic profile of the outbreak, available local resources, and level of public acceptance and participation.

- Develop communication strategies for the public, government decision-makers, healthcare and emergency response workers, mental health professionals, and the law enforcement community.
- Invite key partners to participate in pandemic influenza containment exercises and drills.

Management of cases and contacts (including quarantine)

- Develop protocols, tools, and databases for:
  - Case surveillance
  - Clinical evaluation and management
  - Contact tracing, monitoring, and management
  - Reporting criteria
- Develop standards and tools for home and non-hospital isolation and quarantine.
- Establish supplies for non-hospital management of cases and contacts.
- Establish a telecommunications plan for "hotlines" or other services for:
  - Case and contact monitoring and response
  - Fever triage
  - Public information
  - Provider information
- Plan to ensure provision of essential services and supplies to persons in isolation and quarantine, keeping in mind the special needs of children. Services and supplies include:
  - Food and water
  - Shelter
  - Medicines and medical consultations
  - Mental health and psychological support services
  - Other supportive services (e.g., day care or elder care)
  - Transportation to medical treatment, if required
- Plan to address issues of financial support, job security, and prevention of stigmatization.
- Establish procedures for medical evaluation and isolation of quarantined persons who exhibit signs of illness.
- Develop protocols for monitoring and enforcing quarantine measures, such as:
  - Protocols for follow-up of persons who cannot be reached by telephone. These may include a threshold period for non-responsiveness that should trigger a home visit or other means to locate the person. Partnerships with law enforcement and other community-based resources will be helpful in tracing the whereabouts of persons who have violated restrictions.
  - Protocols for monitoring persons who cannot or will not comply with voluntary home quarantine. These may include:
    - Issuing official, legally binding quarantine orders
    - Posting a guard outside the home
    - Using electronic forms of monitoring
    - Using guarded facilities
  - Protocols for using checkpoints to restrict travel between neighborhoods.

Temporary emergency facilities for patient isolation quarantine, and assessment of patients with fever (see Appendix 7 for a list of facility characteristics)

- Identify appropriate community-based facilities for isolation of patients who have no substantial healthcare requirements.
- Develop policies related to use of these facilities.
- Identify facilities for persons for whom home isolation is indicated but who do not have access to an appropriate home setting, such as travelers and homeless populations.
- Ensure that required procedures for assessment of potential isolation or quarantine sites are available and up to date.
- Identify potential quarantine facilities and prepare contingency plans for staffing and equipping them.
- Identify potential sites for fever clinics and prepare contingency plans for staffing and equipping them, including the ability to dispense antiviral drugs to identified cases in the priority groups.

Community containment measures

- Ensure that legal authorities and procedures are in place to implement the various levels of movement restrictions as necessary.
- Establish procedures for medical evaluation and isolation of quarantined persons who exhibit signs of illness. (Additional information on medical evaluation is provided in Annex 5.)
- Develop tools and mechanisms to prevent stigmatization and provide mental health services to persons in isolation or quarantine.
- Identify key partners and personnel for the implementation of movement restrictions, including quarantine, and the provision of essential services and supplies:
    1. Law enforcement
    2. First responders
    3. Other government service workers
    4. Utilities
    5. Transportation industry
    6. Local businesses
    7. Schools and school boards
- Establish procedures for delivering medical care, food, and services to persons in isolation or quarantine. Examples of services that will require the help of non-traditional partners include:
    - Training for responders and healthcare workers, as necessary, in use of personal protective equipment
    - Plans for the mobilization and deployment of public health and other community-service personnel

V. **Containment Measures: Terms and Definitions**

Isolation is the separation and restriction and movement or activities of ill infected persons (patients) who have a contagious disease, for the purpose of preventing transmission to others.

Quarantine is the separation and restriction of movement or activities of persons who are not ill but who are believed to have been exposed to infection, for the purpose of preventing transmission of disease. Individuals may be quarantined at home or in designated facilities; healthcare providers and other response workers may be subject to quarantine when they are off duty.

Quarantine of close contacts refers to the quarantine of individuals exposed to patients with communicable diseases (e.g., family members, work or school mates, healthcare workers).

Quarantine of groups of exposed persons refers to quarantine of people who have been exposed to the same source of illness (e.g., a case of influenza at a public gathering, on an airline, train, or cruise ship, at a school or workplace or apartment complex, or at a recently visited store or office).

Widespread or community-wide quarantine refers to the closing of community borders or the erection of a real or virtual barrier around a geographic area (a *cordon sanitaire*) with prohibition of travel into or out of the area.

Self-shielding refers to self-imposed exclusion from infected persons or those perceived to be infected (e.g., by staying home from work or school during an epidemic).

Snow days are days on which offices, schools, transportation systems are closed or cancelled, as if there were a major snowstorm.

Influenza clinics are special facilities that may be established during a pandemic to provide rapid medical assessment of potentially infected persons. Ill persons would be encouraged to call influenza hotlines that provide advice on whether to stay home or seek help at an influenza clinic. Persons who come to an influenza clinic will be advised on whether they may be best served by hospital care or home care.

Individual-level containment measures include isolation of patients and management of their close contacts.

Focused measures to increase social distance (or decrease social contact) includes measures applied to groups rather than individuals or whole communities (e.g., quarantine of groups of exposed persons and measures that apply to the use of specific sites or buildings).

Containment measures that apply to use of specific sites or buildings include cancellation of public events (e.g., concerts, sports events, movies and plays), closure of office buildings, apartment complexes, or schools; and closure of subways or bus lines. These measures may also

involve restricting entrance to buildings or other sites (e.g., requiring fever screening or use of face maskes before entry to schools, worksites, or airplanes).

Community-based measures to increase social distance include measures applied to whole neighborhoods, towns, or cities (e.g., snow days, establishment of fever clinics, and community-wide quarantine).