

Non-pharmaceutical Interventions During an Influenza Pandemic

In May 2006, the Minnesota Department of Health (MDH) released its *Pandemic Influenza Plan* detailing the activities MDH would perform prior to and in the event of an influenza pandemic. This fact sheet provides a summary of the *MDH Interim Supplement on Mitigation Strategies: Use of Non-pharmaceutical Interventions*, a supplement to this plan.

Background

The threat of a global influenza outbreak continues to be a significant concern. The MDH and other state agencies involved in preparing for and responding to an influenza pandemic are planning strategies in an effort to:

- Limit the spread of a pandemic
- Mitigate disease, suffering, and death
- Sustain infrastructure and ultimately lessen the impact on the economy and communities

A well-matched vaccine would be the most effective method for prevention. However, this will likely be unavailable when a pandemic begins; and if or when one is developed, there will likely be a shortage.

Non-pharmaceutical interventions (NPIs) are measures that focus on infection control and keeping people separated to avoid disease spread.

NPIs have the potential to play a major role during a pandemic by delaying the upswing of cases, lowering the peak of the epidemic, and allowing a better match between the number of ill people and the availability of healthcare resources. Planning ahead is vital.

Non-pharmaceutical Interventions
Although there are multiple methods of intervention, MDH has identified four key categories: isolation, quarantine, social distancing among children and schools, and social distancing in the workplace and community settings.

Isolation

Isolation refers to the separation or restriction of movement of people with a communicable disease in order to prevent disease transmission to others. MDH will recommend self-isolation at home (unless a person requires hospitalization) for people with confirmed or probable pandemic influenza. Isolation may be coupled with antiviral medication if antivirals are effective and in sufficient supply.

Quarantine

Quarantine refers to the separation or restriction of movement of people who have been exposed to a communicable disease but who are not ill, in order to prevent the spread of disease. Voluntary home quarantine of household members of people with confirmed or probable pandemic influenza will be recommended depending on the severity of the pandemic. Quarantine may be coupled with antiviral medications if antivirals are effective and in sufficient supply.

Social Distancing: Children and School

Social distancing aims to decrease disease transmission by decreasing social contact and increasing distance between individuals. Social distancing of children, adolescents, and post-secondary students through dismissal from school (including public and private primary, secondary, and post-secondary schools),



Immunization, Tuberculosis and
International Health Section-
Pandemic Influenza Planning
625 Robert Street North
PO Box 64975
St. Paul, MN 55164-0975
(651) 201-5556, www.health.state.mn.us

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cancellation of school-based activities, and closure of childcare programs may be used in order to decrease exposure to disease in the event of a pandemic outbreak depending on the severity of the pandemic.

The goal of school closures is to decrease contact among children since schools are socially dense environments. Further, children are particularly important in the transmission of influenza viruses- compared with adults, they usually shed more influenza virus and shed for a longer period of time. One challenge school closures raise is children gathering outside of school (e.g., shopping malls). Therefore, depending on the severity of the pandemic, recommendations may also be made to limit congregation of children in community settings.

Social Distancing: Workplace and Community

Social distancing will also be essential for adults in work and community settings. The Minnesota Department of Homeland Security has developed guidance for employers in workplace social distancing (www.hsem.state.mn.us). Additionally, depending on the severity of a pandemic, recommendations or orders for cancellation or postponement of public gatherings may be made.

When NPIs will be recommended

Pandemic Severity Index (PSI)

The Pandemic Severity Index was designed by the Centers for Disease Control and Prevention (CDC) in order to estimate the severity of a pandemic. The PSI is made up of five categories of increasing severity. These categories are based on the estimated case fatality ratio, which reflects the percent of people with the disease who have died from the disease. NPIs may be matched to the PSI to maximize the public health benefit.

Triggers

The primary trigger for initiating interventions is the arrival and transmission of a pandemic virus. Timing is vital, as it will greatly impact NPI effectiveness. If interventions are applied too early, this may result in compliance fatigue, economic hardship, and social hardship without benefit to public health. On the other hand, if interventions are applied late, there will be a decreased benefit to the health of the public.

Response Actions

To aid the timing of intervention initiation, the CDC has introduced three terms which reflect the escalation of response actions: Alert, Standby, and Activate.

1. *Alert*- Notification of critical systems and personnel
2. *Standby*- Initiation of decision-making processes for imminent activation, including mobilization of resources and personnel
3. *Activate*- Implementation of the specified pandemic migration interventions

How is this relevant to you?

Social distancing (including isolation and quarantine) will require support from everyone- parents, employers, and the public on both individual and community levels. It will also be imperative to remember to practice good hand hygiene and respiratory etiquette.

The Importance of NPIs:

NPIs have the potential to decrease the spread of a pandemic significantly. However, in order for NPIs to be successful there are a number of assumptions that must be met:

1. Prompt recognition of illness,
2. Appropriate use of infection control practices,

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3. Adherence to recommendations for isolation, quarantine, and social distancing,
4. Measures to promote voluntary compliance (e.g., timely and effective risk communication),
5. Commitment of employers to support recommendations that ill employees stay home; and
6. Support for the financial, social, physical, and mental health needs of patients and caregivers.

How can I find out more about NPIs?

For more information regarding non-pharmaceutical interventions, contact the Minnesota Department of Health Infectious Disease Epidemiology, Prevention, and Control Division, (651) 201-5414.

The *Pandemic Influenza Plan* and the *MDH Interim Supplement on Mitigation Strategies: Use of Non-pharmaceutical Interventions* is available on the MDH Web page at: <http://www.health.state.mn.us/divs/idepc/diseases/flu/pandemic/plan/index.html>