

## **SECTION II: PANDEMIC FLU, COMMUNITY MITIGATION & SCHOOL CLOSURE**

### **Pandemic Flu = a worldwide outbreak of serious influenza illness**

Influenza is a highly infectious viral respiratory illness that causes yearly seasonal epidemics. Human influenza outbreaks have been reported since at least the early 1500s. The virus is spread through droplets produced from the coughing and sneezing of an infected person, and by direct close contact with an infected person. Because it is so highly infectious, once the virus is present in a population, person-to-person transmission is rapid and widespread.

In the U.S., complications of influenza cause an average of 36,000 deaths each year, primarily among the elderly. Complications include pneumonia and worsening of underlying cardiopulmonary or other chronic diseases, resulting in significant rates of illness and death during a widespread outbreak.

Based on the history of pandemics, the progression of the current bird flu illness overseas, and the fact that modern transportation can speed the transmission of illness globally, an influenza pandemic is considered to be a 'high probability' event. There may be as little as one to six months' warning from the time that a new and severe human flu virus is identified in another part of the world to the first cases in North America.

Outbreaks are expected to occur throughout much of the country and in Vermont simultaneously. The impact of the next pandemic could have devastating effects on the health and wellbeing of Vermonters. Estimates suggest that up to 186,000 people (approximately 30 percent of the state's population) could become clinically ill, with the severity of the pandemic leading to high rates of hospitalization and death.

This is why preparing for the possibility of a pandemic by all sectors of society, including schools, is so very essential.

### **Mitigation = actions taken to control spread of illness and lessen the impact of a pandemic**

It is highly unlikely that the most effective tool for mitigating a pandemic (i.e. a well-matched pandemic flu strain vaccine for humans) will be available at the start of a pandemic. This means that we must be prepared to face the first wave of the next pandemic without vaccine and perhaps without a sufficient supply of antiviral medications. As a result, non-medical (also called non-pharmaceutical) interventions will be needed until each wave of pandemic flu subsides or sufficient pharmaceutical interventions become available.

Decisions about what non-medical interventions are to be used during a pandemic will be based on the observed severity of illness, its impact on specific populations, the

expected benefit of the interventions, likelihood for success, direct and indirect costs, and consequences to critical infrastructure, healthcare delivery, and communities.

Strict interventions to slow the spread of illness — such as prolonged closing of schools and childcare programs — are not needed during normal influenza seasons. During a normal flu season, the decision to close a school is sometimes made for practical reasons (such as high numbers of absent students or staff) rather than for mitigation purposes. If we are facing a less severe form of pandemic flu, individual or district-wide school closing recommendations may be made based on this same criteria, or to slow transmission in a particular community. If, however, we are facing a more severe form of pandemic, it may be important to close schools *before* influenza transmission starts to occur.

**Activation Triggers = events or conditions that signal the start of a pandemic and need to take action or make interventions**

The primary activation trigger for interventions would be the identification of a laboratory-confirmed cluster of infection with a novel influenza virus and evidence of community transmission (i.e., epidemiologically-linked cases from more than one household) within the U.S.

From a pre-pandemic planning perspective, the steps between recognizing a pandemic threat and the decision to activate a response are critical to successful implementation. For this reason, a key component for planning is developing scenario-specific plans for pandemic response that identify key personnel, critical resources, and processes.

**Alert, Stand-by, Activate**

To emphasize the importance of this concept, this section introduces the terminology of *Alert*, *Standby*, and *Activate*, reflecting the key steps that lead up to responding to pandemic flu:

1. *Alert* means notifying critical systems and personnel of impending activation.
2. *Standby* means starting the decision-making processes for imminent activation, including the mobilization of resources and personnel.
3. *Activate* refers to implementing specified pandemic mitigation measures, such as school closing.

Pre-pandemic planning for the use of these interventions should be directed to decreasing the time it takes to transition between *Alert*, *Standby* and *Activate*, as well as supporting prevention activities through education.

## Community Mitigation Measures & Pandemic Severity

Community mitigation measures (non-pharmaceutical or non-medical interventions) taken will be based on the severity of the pandemic, and may include:

- ❑ **Isolation** - Asking ill people to voluntarily stay at home and not go to work or out in the community for about 7 to 10 days — or until they are well and can no longer spread the infection to others.
- ❑ **Quarantine** - Asking other healthy members of a household with a person who is ill to voluntarily stay at home during the period of time they would be expected to develop illness — most likely 7 days, or the number of days designated by the Health Department.
- ❑ **School Closing** - Closing schools (public and private elementary/secondary schools, as well as colleges and the University) and school-based activities for up to 12 weeks.
- ❑ **Child Social Distancing** – School closing would be combined with social distancing measures to protect children and young people, such as minimizing out-of-school social contacts and community mixing. Childcare programs could be closed, or restricted to caring for small numbers of children.
- ❑ **Adult Social Distancing** - Recommending social distancing measures for adults in the community. This may include canceling large public gatherings, changing workplace environments, schedules and practices to keep people distanced from each other without disrupting essential services, and ensuring that work leave policies provide incentives for, and promote adherence with, these measures.

## School Closing & Pandemic Severity Index

One measure for decreasing transmission of influenza is increasing the distance between people in the community and in school settings. Schools, pre-schools and child care settings are “socially dense” environments, and children are disproportionate contributors to influenza transmission in that they usually shed more influenza virus, for longer periods, and are less able to consistently behave in a manner that decreases disease transmission.

Public health officials have created a system for rating the severity of pandemics for planning purposes. Just as hurricanes have categories 1 through 5, based on the potential for damage, a pandemic will be rated by category based on the severity of illnesses caused by the pandemic strain.

Recommendations for school closure will depend upon the severity of the pandemic. The current three-tiered planning approach includes 1) no closures in a Category 1 pandemic, 2) consideration of short-term closures (up to four weeks) during a Category 2 or Category 3 pandemic, and 3) prolonged (up to 12 weeks) schools closures during a severe influenza pandemic (Category 4 or Category 5 pandemic).

**Table 1: *State of Vermont Interventions for School Closures and Reducing out of School Social Contacts***

Pandemic Severity Index (Category)			
Intervention	1	2 and 3	4 and 5
School closures and school based activities, and closure of large childcare programs.	Generally not recommended	Consider: ≤4 weeks.	Recommend: ≤12 weeks

Planning now for a severe pandemic will ensure that schools are prepared to implement the community interventions that may be recommended. For example, in a very severe pandemic, the duration of these public health measures could be 12 weeks, and this would have educational implications for students. School districts in some parts of the country are exploring potential methods for providing continued instruction during a period of prolonged school closure.