



**Department of Health and Social Services**  
William H. Hogan, MSW, Acting Commissioner  
Jay Butler, MD, Chief Medical Officer  
3601 C Street, Suite 540  
Anchorage, Alaska 99503

<http://www.epi.Alaska.gov>

**Division of Public Health**  
Beverly Wooley, Director  
Local (907) 269-8000  
24 Hour Emergency (800) 478-0084

**Editors:**  
Joe McLaughlin, MD, MPH  
Bradford D. Gessner, MD, MPH  
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## Influenza B Virus Outbreak in Southwest Alaska, Spring 2008

### Background

The influenza season in the United States occurs from October through mid-May; however, influenza activity in Alaska can occur year-round.<sup>1</sup> Although influenza A viruses were more frequently identified in the United States throughout the 2007–2008 flu season, influenza B has predominated in all United States surveillance regions from March 23–April 5, 2008.<sup>2</sup>

On April 17, 2008, the Section of Epidemiology was notified by a southwestern Alaska sub-regional clinic of a cluster of upper respiratory illness (URI) among persons living in two adjacent villages (Village A and B) and people working at a nearby mineral exploration worksite (Worksite A). On April 21, the Section of Epidemiology began an investigation to determine the cause of the outbreak and to assist with prevention efforts.

### Methods

Cases were identified by reviewing school and worker absentee reports, performing chart reviews of URI cases, and interviewing acutely ill patients. A case was defined as an acute onset of fever, cough, or sore throat among persons living in Village A or B or persons working at the worksite, whose onset was between March 21 and April 21, 2008. Clinical specimens were collected from acutely ill patients and evaluated at the Alaska State Public Health Laboratory; culture-positive isolates were sent to the Centers for Disease Control and Prevention (CDC) for further classification.

### Results

Of the 77 people identified who met the case definition, 29 (35%) were evaluated by a health care provider, and 11 (14%) were acutely ill during the time of the investigation. Symptoms included cough (80%), fever (55%), chills (52%), difficulty breathing (45%), productive sputum (33%), and coryza (23%). Dates of illness onset ranged from March 21–April 21 (Figure 1). Forty-three (56%) cases were in worksite employees.

Nasopharyngeal swabs were obtained from the 11 acutely ill patients. Four village residents including one worksite employee tested positive for influenza B by polymerase chain reaction. Two of those specimens were also culture-positive for influenza B. All persons who tested positive for influenza B denied receiving a 2007–08 seasonal influenza vaccination.

One-hundred thirty employees worked at Worksite A; 33% (43/130) of the workforce reported sick during the time period (average workdays lost: 2.3 days). While some employees were residents of the nearby villages, most lived outside the area and were flown in to the site by commercial and charter air service. Employees rotated in and out of the area from various locations. Employees were housed in a dormitory-style environment, with two people per room. Employees

shared common areas for living and dining, and were transported in communal vans. Influenza prevention educational flyers were distributed to worksite employees and to the clinic and school.

### Discussion

This large outbreak of influenza B infection highlights the potential for rapid transmission of influenza virus in the community and the workplace. It also underscores the impact of influenza on worker productivity resulting from employees requiring sick-leave. Dates of illness onset suggest that the outbreak likely began in the village and spread to the worksite population.

Although vaccination histories were only obtained from a small subset of the patients involved in this outbreak, all who were asked denied receiving this year's vaccine. While the majority of influenza B viruses sent to CDC for testing have not been optimally matched to the 2007-08 influenza vaccine strains, influenza vaccination has been shown to provide measurable protection against influenza infection with viruses related to vaccine strains, even when the vaccine strains are not optimally matched to circulating strains.<sup>3</sup>

### Recommendations

1. Health care providers should encourage all persons aged  $\geq 6$  months to receive the seasonal influenza vaccine.
2. Health care providers should instruct patients to cover their mouth and nose when they sneeze or cough; wash their hands frequently with soap and water or alcohol-based sanitizers when soap and water are not available; and avoid touching their eyes, nose, and mouth.
3. Refer to the CDC advisory on influenza antiviral use for treating or preventing influenza virus infection <http://www.cdc.gov/flu/professionals/antivirals/>
4. Report confirmed cases of influenza and suspected outbreaks to the Section of Epidemiology by calling 907-269-8000, during business hours, or 1-800-470-0084, after hours.
5. Submit clinical specimens from persons with symptoms compatible with influenza to the Alaska State Virology Laboratory, 907-474-7017, for free viral culture.

### References

1. Alaska Section of Epidemiology. Summer Influenza in Alaska, 2003. *Bulletin* No. 23 August 27, 2003. Available at: [http://www.epi.alaska.gov/bulletins/docs/b2003\\_23.pdf](http://www.epi.alaska.gov/bulletins/docs/b2003_23.pdf)
2. Centers for Disease Control and Prevention. Update: Influenza Activity—United States, September 30, 2007–April 5, 2008, and Composition of the 2008–09 Influenza Vaccine. *MMWR* 2008; 57(15) 404-409. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5715a4.htm>
3. The 2007–2008 Flu Season. Available at: <http://www.cdc.gov/flu/about/qa/season.htm>

**Figure 1.** Cases of Upper Respiratory Illness among Village Residents and Worksite Employees by Date of Onset — Southwest Alaska, March–April, 2008

