

## **Exposure to Mumps During Air Travel --- United States, April 2006**

The state of Iowa has been experiencing a large mumps outbreak that began in December 2005 ([1](#)). As of April 10, 2006, a total of 515 possible mumps cases have been reported to the Iowa Department of Public Health (IDPH) during 2006 ([2](#)). This outbreak has spread across Iowa, and mumps activity, possibly linked to the Iowa outbreak, is under investigation in six neighboring states, including Illinois (n = four), Kansas (n = 33), Minnesota (n = one), Missouri (n = four), Nebraska (n = 43), and Wisconsin (n = four) (CDC, unpublished data, April 10, 2006). The reasons for this outbreak are under investigation.

Mumps is an acute viral infection characterized by a nonspecific prodrome, including myalgia, anorexia, malaise, headache, and fever, followed by acute onset of unilateral or bilateral tender swelling of parotid or other salivary glands ([2](#)). An estimated 60%--70% of mumps infections produce typical acute parotitis ([3](#)). Approximately 20% of infections are asymptomatic, and nearly 50% are associated with nonspecific or primarily respiratory symptoms. Complications include orchitis, oophoritis, or mastitis (inflammation of the testicles, ovaries, or breasts, respectively), meningitis/encephalitis, spontaneous abortion, and deafness. Transmission occurs by direct contact with respiratory droplets or saliva. The incubation period is 14--18 days (range: 14--25 days) from exposure to onset of symptoms. The infectious period is from 3 days before symptom onset until 9 days after onset of symptoms.

IDPH has identified two persons who had mumps diagnosed and were potentially infectious during travel on nine different commercial flights involving two airlines during March 26--April 2, 2006. The commercial airline flights identified with a potentially infectious traveler are listed below by date, carrier, and flight number:

Northwest Airline (NWA) flights:

- March 26 NWA (Mesaba) #3025 from Waterloo, Iowa to Minneapolis, Minnesota
- March 26 NWA #760 from Minneapolis, Minnesota, to Detroit, Michigan
- March 27 NWA #0260 from Detroit, Michigan, to Washington, DC--Reagan National

- March 29 NWA #1705 from Washington, DC--Reagan National to Minneapolis, Minnesota
- March 29 NWA (Mesaba) #3026 from Minneapolis, Minnesota, to Waterloo, Iowa

American Airline (AA) flights:

- April 2 AA #1216 from Tucson, Arizona, to Dallas, Texas (DFW)
- April 2 AA #3617 from DFW to Lafayette, Arkansas (Northwest Arkansas Regional [NAR])
- April 2 AA #5399 from NAR to St. Louis, Missouri
- April 2 AA #5498 from St. Louis, Missouri, to Cedar Rapids, Iowa

Persons on these flights who have symptoms consistent with mumps within 21 days of travel should be evaluated for mumps by a health-care provider. Health-care providers should remain vigilant for mumps among persons with parotitis or other salivary gland inflammation. Cases of suspected mumps should be reported immediately to public health officials.

A multistate investigation has been initiated by CDC and the state health departments in affected states to notify potentially exposed passengers (i.e., those seated in close proximity to the index cases). This investigation is using a new software application, eManifest, developed by the CDC Division of Global Migration and Quarantine (DGMQ) to securely import, sort, and assign passenger-locating information to jurisdictions to facilitate timely identification of exposed persons. These data are securely transmitted to state and territorial health departments via the *Epidemic Information Exchange (Epi-X) Forum* (available at <http://www.cdc.gov/mmwr/epix/epix.html>) for notification of potentially exposed passengers.

Incidence of mumps in the United States began to decrease after vaccine introduction in 1967 and recommendations for routine vaccination of children in 1977. Since the 1990s, a further decrease in the reported incidence of mumps has occurred, which is thought to be attributable to the implementation of the second dose of measles, mumps, and rubella vaccine (3). The risk for transmission of respiratory infectious diseases during air travel might depend on several factors, including 1) immunity of passengers; 2) infectiousness of the organism; 3) degree of shedding of the pathogen by infected passengers; 4) hygienic practices of infectious passengers; 5) proximity of others to infectious passengers; 6) hygienic practices of the other passengers/crew; 7) flight duration; and 8) cabin environment of the aircraft (4). Transmission of other respiratory pathogens during air travel has been reported (5--9). Exposure and transmission of mumps during commercial air travel has not been described previously.

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