

## Mumps Outbreak In Iowa: Update #1

### Current Situation

Through April 19<sup>th</sup>, the Iowa Department of Public Health has reported a total of 815 cases of mumps; Iowa typically reports about 5 cases of mumps each year. The states of Minnesota, Kansas, Illinois, Nebraska, Wisconsin, Missouri, and Oklahoma have reported a total of 350 cases, and several other states are investigating possible cases. The Iowa Department of Public Health has also identified two cases that were potentially infectious during travel on nine different commercial flights involving two airlines during late March and early April.

### Vaccine Efficacy

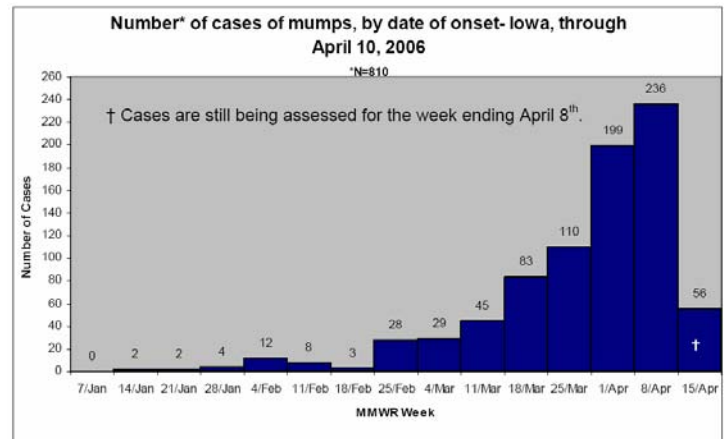
Three-quarters of the reported cases have received at least one mumps-containing vaccine, and nearly two-thirds have been fully vaccinated with two doses. As a result of these findings, questions have arisen about the efficacy of the vaccine, and of the role of waning immunity.

Vaccination coverage in the affected states is around 98%, and the MMR vaccine is about 95% effective in preventing disease. If the entire population of these states were exposed to mumps:

- 2% would get the disease because they were not vaccinated
- 4.9% would get the disease because they were vaccinated, but it was not effective in stimulating an immune response (*i.e.* 98% \* 95% - 2%)

Therefore, based on vaccination rates and vaccine efficacy, 71% of the cases (4.9% / 6.9%) would have been vaccinated. In the ongoing Iowa outbreak, this is what is being observed, indicating that the outbreak is not the result of a problem with the vaccine.

If waning immunity were a problem, age would be directly proportional to the risk of developing disease. In the outbreak, the majority of cases are between the ages of 18 and 22. Although cases have appeared in the older age groups, there is no increased risk of disease, indicating that waning immunity is also not responsible for the outbreak. These findings are the result of a successful vaccination campaign, a less-than-perfect vaccine, and a disease



that is highly contagious.

### Outlook for Southern Nevada

As a tourist destination with about 40 million visitors a year, it is likely that individuals will visit Las Vegas during their infectious period, potentially exposing other visitors and residents to mumps. Although no outbreak-associated cases have yet been reported in local residents, surveillance is ongoing to identify cases as rapidly as possible. Health care providers are encouraged to increase their index of suspicion for mumps, even in persons who have been fully vaccinated against mumps.

### Recommendations for Health Care Providers

Mumps is spread by droplet transmission. Droplet precautions, including gloves, surgical masks, and proper hand washing should be followed when in contact with suspect Mumps cases; no special ventilation or air handling is required. Health care workers should also review their vaccination records, to ensure that they have been vaccinated with two doses of the MMR vaccine. Persons without a documented natural infection, or record of two doses of MMR should be vaccinated in order to prevent disease.

Additional information of the diagnosis and laboratory testing for mumps can be found on the April 4, 2006 technical bulletin entitled "Mumps Outbreak In Iowa". Contact the Office of Epidemiology at 759-1300 if you have not received this bulletin.