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TO: Douglas County Health Care Providers and Laboratories  
FROM: Adi M. Pour, Ph.D., Director, Douglas County Health Department  
Jose´ R. Romero, M.D., Medical Advisor  
SUBJECT: Physician Advisory for Mumps

The Douglas County Health Department (DCHD) received a report of one laboratory confirmed mumps case on February 17, 2006. The patient was an 8 year old that had a complete vaccination history with two doses of MMR vaccine. The individual is recovering at home. Douglas County has not had a confirmed mumps case since 2000. The Iowa Department of Health is reporting 17 laboratory confirmed cases for 2006.

Mumps is a viral illness. The classic symptom of mumps is parotitis, most commonly bilateral, which develops an average of 16 to 18 days after exposure. Nonspecific symptoms associated with mumps include myalgia, anorexia, malaise, headache, and a low-grade fever, which may precede parotitis by several days. Fever may persist for 3-4 days and parotitis, when present, usually last 7-10 days. Persons with mumps are usually considered infectious from 2 days before until 9 days after onset of parotitis. Because mumps outbreaks have occurred in highly vaccinated populations, **the diagnosis of mumps should not be discounted in persons who have received the vaccine.** Mumps is reportable to public health according to the Nebraska Administrative Code (NAC) 173 1-003.02.

Possible explanation of mumps disease in immunized persons include:

1. Primary vaccine failure: not everyone seroconverts and develops immunity following vaccination.
2. Vaccine mishandling: there may be primary vaccine failure due to deteriorated vaccine if it has not been stored properly with cold chain maintenance.
3. Waning of immunity, which seems less likely in persons who have been vaccinated in the recent past.

**Testing:** It is important to confirm the diagnosis in a person suspected of mumps infection. Three tests are recommended: parotid gland swab for viral culture testing; clean-catch urine for viral isolation; and serologic testing to detect IgM antibody in an "acute" specimen or a fourfold or greater rise in IgG antibody in paired acute-convalescent specimens. The collection time between the acute and convalescent specimens needs to be at least two weeks. Ideally specimens for all three types of testing should be collected: urine specimen, parotid gland swab, and serum. At a minimum, a parotid gland swab specimen should be submitted. Contact 444-7214 to report a suspected case and to obtain guidance on testing and forwarding to the Nebraska Public Health Laboratory.

**Vaccination:** Two doses of mumps vaccine, given as combination MMR vaccine, separated by at least 4 weeks, are routinely recommended for all children. The first dose is given on or after the first birthday; the second is given at 4 - 6 years of age. Mumps-containing vaccine given before 12 months of age should not be counted as part of the series. Children vaccinated with mumps-containing vaccine before 12 months of age should be revaccinated with two doses of MMR vaccine, the first of which should be administered when the child is at least 12 months of age. MMR is a live, attenuated vaccine. Pregnant women and persons with immunodeficiency or immunosuppression should not receive live attenuated vaccines.

Because MMR is a live vaccine, proper handling is important to maintain its efficacy. Please go to the following web site for information on handling and storage of this vaccine.

[http://www.cdc.gov/nip/publications/vac\\_mgt\\_book.htm#mmr](http://www.cdc.gov/nip/publications/vac_mgt_book.htm#mmr)

For an excellent discussion about mumps and mumps vaccine:

<http://www.who.int/vaccines/en/mumps.shtml>

Please contact the Douglas County Health Department Epidemiology Section @ 444-7214 with questions or to report a case.