Illinois Department of PUBLIC HEALTH

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TO: Local Health Departments and Regional Offices of IDPH
FROM: Craig Conover, M.D., M.P.H., Medical Director, Office of Health Protection
Dr. George Dizikes, Director, IDPH Chicago Laboratory
DATE: September 1, 2006
RE: Update on Mumps Diagnostic Services Available through IDPH Labs

Prior to the multi-state mumps outbreak which began early this spring, the IDPH State Laboratory's diagnostic services for mumps were limited to identifying mumps virus through culture and reference testing for immunity (IgG) and infection (IgM) by serology. Culture turn around time requires one to two weeks for results. Over 250 serologies were submitted for mumps testing this year, 95% requested IgG immunity testing, not testing for IgM antibodies, which would be an indicator of infection.

In response to the pressing need for rapid tests to confirm mumps cases during the 2006 outbreak, the Chicago-based IDPH Laboratory, working in conjunction with the CDC, IDPH Immunization program and local health departments statewide, began use of mumps viral RNA testing using a standardized reverse transcriptase - polymerase chain-reaction (RT-PCR) method. Although this test has yet to receive FDA approval, the IDPH laboratory mumps test parallels a similar RT-PCR methodology currently being recommended by the CDC. The turn around time for RT-PCR results is one to two days.

Over 1,000 RT-PCR tests for mumps have been performed to date, with about four percent of the specimens testing positive. In April and May 2006, RT-PCR results were validated against mumps culture results, yielding a high level of confidence in the RT-PCR's usefulness in identifying mumps virus RNA and the test has gained wide acceptance nationally as a useful tool to support a clinical diagnosis of mumps.

Despite the benefits of this rapid test, negative results in persons with mumps-related illness do occur, just as they can occur with culture methodology. Inadequate specimen collection, collection several days after onset of symptoms when viral shedding is reduced, or suboptimal specimen processing, shipping or storage can significantly reduce the likelihood of detecting mumps virus RNA.

As a result of the validation of the RT-PCR test for mumps, laboratory and immunization program staff have agreed to forego routine provision of mumps culture (may still be utilized in certain situations when recommended by IDPH) in lieu of RT-PCR assays for mumps. RT-PCR specimens should be collected **ONLY** from persons with mumps-like symptoms (parotid or other salivary glandular swelling for two or more days, without other apparent cause). Specimen collection from the buccal area of the mouth should occur within 2-5 days of onset of symptoms. Serology for IgM antibodies can also be collected within five days of onset of symptoms and submitted for reference testing. IgM testing may prove useful for patients without typical mumps presentation who are experiencing mumps-related complications like orchitis, oophoritis, mastitis, hearing loss, etc.

Laboratory-related questions can be directed to Joel Price at 312.793.4760. All other mumps-related questions addressing surveillance and case investigation should be directed to Kae Hunt at 217.785.1455.