


<p><b>Epidemiology/incidence</b></p>	<ul style="list-style-type: none"> <li>From January 1 to February 25 2017, 37 states and the District of Columbia reported mumps infections in 1,077 people to CDC. In 2016, there were 5,311 cases reported to the CDC.</li> <li>Most incidences of mumps occur during the end of winter, and in spring.</li> <li>Mumps is found in people of any age, but is more common in older children.</li> <li>Barrington High School officially has a mumps outbreak (March 2017).</li> </ul>
<p><b>Etiology/pathophysiology</b></p>	<ul style="list-style-type: none"> <li>Mumps is caused by a paramyxovirus, a member of the Rubulavirus family.</li> <li>After the initial entry into the respiratory system, the virus replicates locally in the nasopharynx and the lymph nodes. Viral dissemination then occurs to target tissues, such as the salivary glands (parotid glands) and extrasalivary locations (CNS). It can spread to the testes, pancreas, ovaries, breast, brain, and meninges.</li> <li>Antibodies produced by parainfluenza and Newcastle disease cross-react with mumps.</li> </ul>
<p><b>Transmission</b></p>	<p>Mumps spreads from person to person via <b>droplets</b> of saliva or mucus from the mouth, nose, or throat of an infected person, usually when the person coughs, sneezes, or talks. The virus may also be spread indirectly when someone with mumps touches items or surfaces without washing their hands and then someone else touches the same surface and rubs their mouth or nose. Mumps is less contagious than measles or chickenpox.</p> <p>A <b>major factor contributing to mumps outbreaks</b> is being in a crowded environment, such as attending the same class, playing on the same sports team, or living in a dormitory with a person who has mumps. Also, behaviors that result in exchanging saliva, such as kissing or sharing utensils, cups, lipstick or cigarettes, might increase spread of the virus.</p>
<p><b>Susceptibility</b></p>	<ul style="list-style-type: none"> <li>Mumps can affect anyone of any age who has not had the disease or been vaccinated against it.</li> <li>Mumps usually occurs in children, although older people may contract the disease. The greatest risk of infection occurs among older children.</li> <li>Lack of immunization, international travel, and immune deficiencies are all factors that increase risk of infection by the Paramyxovirus mumps virus.</li> </ul>
<p><b>Incubation/ communicable periods</b></p>	<ul style="list-style-type: none"> <li>Patients are most contagious for 1 to 2 days before parotid swelling and for up to 5 days after parotid swelling.</li> <li>The incubation period is usually 16–18 days, but can range from 12–25 days.</li> <li>Symptoms usually develop 14-18 days after initial infection.</li> </ul>
<p><b>Clinical S&amp;S</b></p> 	<p>A third of patients who contract the virus are asymptomatic. In mild cases, symptoms generally last three to four days.</p> <p><b>Common symptoms include:</b></p> <ul style="list-style-type: none"> <li>Usually first feel sick with nonspecific symptoms like headache, muscle aches (myalgias), loss of appetite, low-grade fever and malaise</li> <li>Usually involves pain, tenderness, and swelling in one or both parotid salivary glands (cheek and jaw area). Swelling is first visible in front of the lower part of the ear. It then extends downward and forward as fluid builds up in the skin and soft tissue of the face and neck. As swelling worsens, the angle of the mandible below the ear is no longer visible. Swelling usually peaks in 1 to 3 days then subsides during the next week.</li> <li>Swelling and tenderness of testes in males after puberty</li> <li>Meningitis; Impaired renal function (glomerulonephritis) may occur.</li> </ul>
<p><b>Prevention strategies</b></p>	<ul style="list-style-type: none"> <li><b>Vaccination:</b> After the mumps vaccine was approved in December 1967 the reported incidence of mumps substantially decreased.</li> <li>One dose of vaccine, given in combination with measles and rubella (called MMR), is recommended for all children at 12 to 15 months and a second dose at 4 to 6 years of age. The vaccine usually produces life-long immunity.</li> <li>Persons who are ill with mumps should limit their contact with others for up to five days after the onset of S&amp;S when they are most likely to easily transmit the virus to others through their saliva.</li> </ul>

<p><b>PPE/BSI for EMS</b></p>	<ul style="list-style-type: none"> <li>• <b>Droplet precautions</b> (have patient wear a surgical mask), and standard BSI precautions, (eye shields, surgical mask, gloves.) for responders</li> <li>• <b>Thoroughly wash hands and arms</b> after patient contact. Because mumps is spread through contact with an infected patient’s saliva, take special care when handling anything that has come into contact with the patient’s mouth or mucous membranes.</li> <li>• Carefully dispose of used tissues and <b>thoroughly disinfect inside of ambulance</b> after transporting a patient with suspected mumps.</li> </ul>
<p><b>EMS treatment</b></p>	<ul style="list-style-type: none"> <li>• <b>Supportive care.</b> Patient should be encouraged to stay hydrated and fed, although they can sometimes find eating and drinking painful. IVF as needed.</li> <li>• Treatment of pain: fentanyl, (age/size based dose, 1mcg/kg or 0.5mcg/kg.). These are usually opiate naïve patients without drug tolerance. Opiates not usually needed; consider giving smaller doses if moderate to severe distress from pain.</li> <li>• For nausea, ondansetron adult or peds dose per SOP.</li> </ul>
<p><b>Cleaning/disinfection of EMS equipment/vehicles after transport</b></p>	<ul style="list-style-type: none"> <li>• Clean, decontaminate and disinfect ambulance surfaces (including stretchers, mattresses, railings, medical equipment control panels, and adjacent flooring, walls, work surfaces, and hand holds) that may be contaminated as soon as feasible according to System and employer procedures. All have the potential to transmit infectious diseases. Cleaning and disinfecting of ambulance should be done before transporting another patient.</li> <li>• After thoroughly cleaning all planes and crevices, spray all planes of equipment with System-approved disinfectant registered by the EPA with label claims for viruses (such as, norovirus, rotavirus, adenovirus, poliovirus) and TB. The System prefers Cavi-cide Disinfectant Cleaner (Aseptic Control Products), or a freshly constituted (mixed the same day) 1:100 solution of bleach. Follow manufacturer's instructions.</li> <li>• Allow cleaner / disinfectant to stand on equipment for the manufacturers recommended time to be fully effective against bacteria, viruses and Mycobacterium tuberculosis.</li> <li>• General recommendation: Spray all surfaces with EPA-approved disinfectant; hold cleaning agent dispenser 10” from surface and atomize with quick short strokes, spraying evenly on (potentially) contaminated areas of equipment and affected interior patient compartment or other affected portions of vehicle until wet. Wait 30 seconds. To kill staph, strep, and other virus and bacteria strains, repeat as above, wait 10 minutes.</li> <li>• After allowing disinfectant to remain on equipment for the prescribed time by the manufacturer, wipe down with a clean towel dampened with clean water then dry thoroughly. Doing so to avoid streaking and any unsightly residue that may be left behind from disinfectant.</li> <li>• Replace linen with clean sheets, blankets and towels.</li> </ul>
<p><b>Prognosis</b></p>	<p>The prognosis for patients with uncomplicated mumps is excellent.</p> <p>For pts with <b>encephalitis</b>, the prognosis is generally favorable, however, neurologic damage and death can occur. ~10% of pts develop a mild form of aseptic meningitis, which can be confused with bacterial meningitis.</p> <p>Sensorineural <b>deafness</b> is a serious complication that occurs infrequently, with an estimated frequency of 0.5-5 cases per 100,000 reported cases. Permanent deafness after mumps is rare and, if it occurs, primarily affects unilateral hearing (only 20% bilateral). Minor hearing loss is more likely and is likely reversible.</p> <p><b>Pancreatitis</b> occurs in 5% of persons infected with mumps. The hyperglycemia that results is usually transient, but a few cases of diabetes mellitus have occurred as a post complication.</p> <p><b>Orchitis</b> (usually unilateral) has been reported as a complication in 20-50% of mumps cases in post-puberty males. A degree of testicular atrophy occurs in about 35% of cases. Impaired fertility occurs in 13% of pts.</p> <p><b>Oophoritis</b> is a benign inflammation of the ovaries and occurs in about 5% of post-puberty females.</p> <p>Mumps infection in <b>pregnant women</b> increases the risk of spontaneous fetal loss and fetal death, especially during the first trimester of pregnancy (reported to be as high as 27%). No association found between mumps and congenital anomalies.</p> <p>Death due to mumps is rare; majority of fatalities (&gt;50 %) occur in pts older than 19 years.</p>
<p><b>Citations</b></p>	<p>Hamborsky J, K. A. (2015, July 30). <i>Pinkbook-Mumps-Epidemiology of Vaccine Preventable Diseases-CDC</i>. Retrieved from Centers for Disease Control and Prevention: <a href="http://www.cdc.gov/vaccines/pubs/pinkbook/mumps.html#features">http://www.cdc.gov/vaccines/pubs/pinkbook/mumps.html#features</a> January 8, 2016</p> <p><i>Mumps IDPH</i>. (2016, January 6). Retrieved from Illinois Department of Public Health: <a href="http://dph.illinois.gov/topics-services/diseases-and-conditions/diseases-a-z-list/mumps">http://dph.illinois.gov/topics-services/diseases-and-conditions/diseases-a-z-list/mumps</a> January 8,2016</p> <p><i>Mumps-Signs and Symptoms-CDC</i>. (2017, March). Retrieved from Centers for Disease Control and Prevention: <a href="http://www.cdc.gov/mumps/about/signs-symptoms.html">http://www.cdc.gov/mumps/about/signs-symptoms.html</a></p>