

## Varicella in Montana, 2007 to 2011

**Background:** In 2007, chickenpox (varicella infection) was made a reportable condition in Montana. Varicella is a vaccine-preventable disease.

**Etiology, Transmission, and Pathogenesis:** Varicella-zoster virus (VZV) is the causative agent of varicella and member of the herpesvirus family. Infection typically occurs by the virus coming into contact with a susceptible person's conjunctiva or upper respiratory tract mucosa. Person-to-person transmission occurs via direct contact with infected persons, respiratory secretions, airborne droplets, and from direct contact with skin lesions. The incubation period is normally 14 to 16 days. Varicella is most often transmitted to others 1 to 2 days before rash onset through the first 4 to 5 days of illness, or until the lesions have formed crusts. The majority of cases are reported in winter and early spring seasons. Varicella is highly contagious, especially within households with other susceptible persons. Clinical manifestations of varicella include mild fever, malaise, pruritus, and generalized rash without other apparent cause that typically consists of 250 to 500 lesions in differing clinical stages. Severe clinical manifestations (e.g., pneumonia, encephalitis, secondary bacterial infection) can occur in persons without evidence of immunity and who are immunocompromised because of either a pre-existing medical condition or immunosuppressive medications. Pregnant women who become infected during the first half of pregnancy are at risk of the fetus developing congenital varicella syndrome. Congenital varicella syndrome is characterized by low birth weight, cutaneous scarring, limb hypoplasia, and other anomalies. The likelihood of neonatal death is increased for infants born to mothers who develop varicella 5 days before to 2 days after delivery.

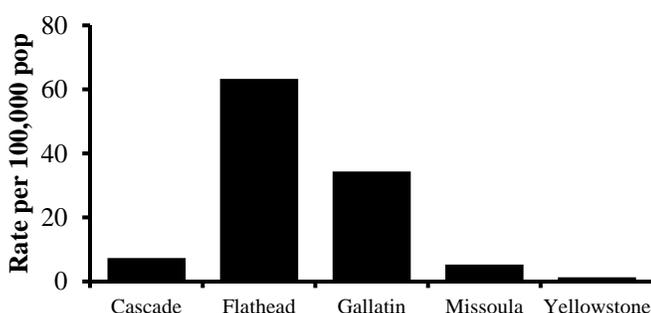
**Trends:** In Montana during 2007 to 2011, 1303 varicella cases were reported. Nearly 1180 (90%) reported cases occurred in persons aged less than 19 years. The median age was 8 years (range: 9 days–86 years). Almost 80% of cases were reported during October through May. The rate of reported varicella cases varied substantially among counties (Figure 1). Three counties (Flathead, Gallatin, and Lewis and Clark counties) accounted for 43% of the total reported cases. In contrast, only 10 varicella cases were reported in Yellowstone County, Montana's most populous county. Montana has an annual average vaccination coverage of 80% for at least one dose of varicella vaccine in Montana children aged 19 to 35 months during 2007 to 2011 (Figure 2). The number of varicella cases is underestimated because patients with mild illness often do not seek care, patients presenting for care sometimes go unrecognized as having varicella infection, and recognized cases are not always reported to public health.

**Prevention:** Varicella vaccine is recommended for all children without existing contraindications and is the best practice for avoiding varicella infection and its related complications. A single dose is recommended for infants aged 12 to 15 months. A second dose is recommended for children aged 4 to 6 years. A second catch-up dose can be administered 3 months after the first dose to children aged 7 to 12 years, and 4 weeks after the first dose to those aged older than 12 years. All adults without evidence of immunity to varicella should receive two doses of varicella vaccine spaced at least 4 weeks apart, or a single dose if they have previously received one dose. Particular attention should be given to vaccinating children and those who are household or close contacts to persons at high risk for severe varicella infection, and to adults at high risk for exposure or transmission (e.g., teachers). Varicella vaccine is a live attenuated vaccine and should not be administered to women who are pregnant and those with malignancies or receiving high-dose systemic immunosuppressive therapy.

**Pregnant women without evidence of immunity to varicella, who are at high risk of severe disease and pregnancy complications, and are exposed to varicella can be given varicella zoster immune globulin (VZIG) for post-exposure prophylaxis.** If used, VZIG should be administered as soon as possible after exposure.

**Varicella is a reportable condition and should be reported immediately to the local public health department.** Case reports submitted by local public health departments to Montana DPHHS should be complete, including vaccine history, to allow for improved surveillance and targeted public health interventions.

**Figure 1.** Annual average rate of varicella case reports for Montana's five most populous counties, 2007 to 2011



**Figure 2.** Varicella vaccination coverage for Montana children aged 19 to 35 months during 2007 to 2011, and Healthy People 2020 goal for percentage of U.S. children vaccinated against varicella

