

Summary of Vaccine Preventable Diseases Reported to the Michigan Department of Public Health, 1995

This report summarizes the occurrence of vaccine-preventable diseases in Michigan in 1995. Features of the descriptive epidemiology of the diseases are provided.

Congenital Rubella - No cases of congenital rubella were reported in 1995, as was the case in 1994.

Diphtheria - No cases of diphtheria were reported in 1995, as was the case in 1994.

Haemophilus influenzae invasive disease - A total of 18 cases of *H. influenzae* invasive disease were reported in 1995. Of these, 5 were designated type b, 4 were either other types or found not typable, and 9 were not typed. Of the 18 cases, 11 (61%) occurred in children under age five years, of which 5 were identified as serotype b.

The trend in *H. influenzae* invasive disease incidence over the past 10 years has been a noticeable decline, coinciding with the licensure and implementation of highly effective Hib vaccines. However, in recent years this decline has leveled off, with 15 - 20 cases reported per year.

A current issue in surveillance for this disease is the frequency of serotyping cultured isolates. Serotyping is important to allow determination of preventability of the disease, since only cases known to be serotype b are preventable by immunization. Serotyping such isolates also improves the ability to track changes in the descriptive epidemiology of Hib. Unfortunately, many clinical labs have discontinued the practice of serotyping *H. influenzae* isolates in recent years.

MDPH, in conjunction with partners in the Michigan Infectious Disease Society, is encouraging laboratories to perform serotyping on all cultured isolates of *H. influenzae*, especially those recovered from infections in children.

Measles - A total of 5 cases of measles was reported in 1995, all 5 were part of a small outbreak in Marquette resulting from an imported case. The index case, a 17 year old visitor from Germany, was incubating the disease at the time of arrival. The subsequent cases occurred over 2 additional generations with cases ranging in age from 18 to 35 years. Of interest in this outbreak are the facts that the index case was an importation, underscoring the ongoing threat of foreign introduction of measles, and that secondary cases occurred principally in adults, highlighting the susceptibility of young adults as a group.

Mumps - Sixty cases of mumps were reported in 1995, nearly identical to the number in 1994 (59). All were reported as sporadic cases, no outbreaks were identified. Slightly more than 70% of cases were reported from Southeastern Michigan. Cases ranged in age from 2 months to 56 years (median 8.5 years). The largest proportion of cases, 38%, occurred in 10 - 19 year olds,

and about 1/3 of cases occurred in children 5 years of age and under. Case investigation including assessment of immunization history was available for 33 (55 %) of cases; of these, 27 (81%) had a documented history of at least one age-appropriate mumps immunization. Ten had documentation of a 2nd mumps immunization.

Few case diagnostic work-ups include serology, with diagnosis established generally by clinical examination. None of the reported cases in 1995 were confirmed by serologic studies. In at least 4 instances where sero-confirmation was attempted, the cases were ruled out by the serology.

The lack of seroconfirmation, along with the documented immunization among a large proportion of cases suggests that several of the reported cases may not have been true mumps.

Pertussis - A total of 103 pertussis cases were reported. Outbreaks in 3 counties (Clare, Gladwin, and Mecosta) among Amish communities which typically have refused childhood immunizations accounted for 63 (61%) of reported cases. Reported cases ranged in age from 13 days to 72 years (median age: 21 months) with slightly more than 2/3 (69%) occurring in children under 5 years of age, and cases were evenly split between genders (51 male, 52 female). Hospitalization was reported for 32 (31%) cases. Reported complications included x-ray confirmed pneumonia in 8 cases (8%) and seizures in 3. A fatal outcome was reported for one case. Overall, over 2/3 of cases (71%) were not age-appropriately vaccinated. Excluding the Amish cases, 40% overall were not age-appropriately vaccinated.

Rubella - Four sporadic cases of rubella were reported in 1995. Three were in adults, one occurred in a 9 month old infant. Three of the cases were sero-confirmed. The infant case was too young to have been immunized. Her mother had a record of rubella immunization after the birth of the child (suggesting that the case lacked passive-acquired maternal antibody). Of the 3 adults, one had a record of rubella immunization. No secondary cases were identified in connection with any of the cases.

Tetanus - A single case of tetanus was reported in 1995. The case was a 27 year-old male with a history of a work-related puncture wound to the thumb from a piece of sheet-metal approximately 2 2 weeks prior to onset. The case had a history of receiving a tetanus toxoid booster 9 months prior to this incident, at the time of treatment for a laceration wound. No written documentation of a completed primary tetanus series was confirmed, and a Td series was scheduled.