



Summary of Vaccine Preventable Diseases Reported to the Michigan Department of Community Health, 2000

This report summarizes reported cases of selected vaccine-preventable diseases in Michigan in 2000. Features of the descriptive epidemiology of the diseases are provided. Totals for 2000 and 1999 for comparison are given in Table 1, below.

Congenital Rubella - No cases of congenital rubella were reported in 2000.

Diphtheria - No cases of diphtheria were reported in 2000 (last Michigan case reported in 1980).

***Haemophilus influenzae* invasive disease** - Eleven *H. influenzae* invasive disease cases were reported in 2000; this number included cases of all ages and due to *H. influenzae* organisms of any or unknown serotype. Three of the 11 cases were reported in children, ages 1 year, 5 years, and 7 years (all other reported cases occurred in adults, all over the age of 50). One of the cases in the children (the 5 year old) was possibly due to serotype b (determined on the basis of an antigen test performed on a CSF specimen; there was no growth on culture and the case is therefore considered Aprobable@ Hib). Of the 2 other cases in children, one was due to type f and one was due to type a.

Measles - Three cases of measles were reported in Michigan in 2000. In January a case occurred in a 3 year old female; this case was the final case of a family-centered outbreak involving a total of 6 cases (the 5 other cases in the family had rash onsets in late December 1999 and are therefore considered 1999 cases. The index case in the outbreak was a 17 year old female who was exposed in England where she was living and attending school). The 3 year-old did not have a history of measles vaccination due to parental philosophic exemption (of a total of 7 children in the family, 6 developed measles, all of whom were unimmunized; the one child who did not get disease had a documented history of measles immunization). The case was confirmed by epidemiologic linkage to other siblings who were laboratory confirmed cases.

In August a confirmed measles case was reported in a 13 month old unimmunized male. A source was not identified but exposure is believed to have occurred either while the child was traveling with family members in Virginia or en-route. The case was confirmed by detection of measles IgM antibody; additional testing at CDC yielded a positive measles culture, which was DNA sequenced and determined to be genotype D5.

Another case of measles occurred in an 18 year old male of unknown immunization status in April but was delayed in reporting and came to the attention of public health authorities well after the fact, in October. The case was born in Poland and came to the US at 5 years of age. Measles IgM titer was positive at a commercial laboratory; clinical signs and symptoms were consistent with a possible measles infection. A source of infection was not determined.

Mumps - Seven cases of mumps were reported in 2000, the lowest annual number of cases reported for the state. Five of the cases occurred in adults (ranging in age from 29 to 57 years), and two cases were children, a 3 year old and a 9 year old. All but one case was confirmed by mumps IgM serology. Immunization history was known for 5 of the 7 cases. Among the adult cases, 3 indicated they had never been immunized against mumps, one was unknown, and one was lost to follow-up. Among the 2 cases in children, both had a history of 2 valid doses of mumps immunization (1st dose on or after the 1st birthday, 2nd dose at least 1 month later).

Pertussis - One hundred twenty seven cases of pertussis were reported in 2000, representing a 72% increase over the number of cases reported in 1999. While no large outbreaks were detected, 11 clusters consisting of 2 or more cases were identified; the numbers of cases in clusters ranged from 2 to 8 cases (median 3). Cases were reported from 33 counties, in all regions of the state.

There were slightly more female cases (66) than male (61, female-to-male ratio 1.08:1). Pertussis cases reported in 2000 ranged in age from 5 days to 58 years. Age distribution of cases was as follows:

Age group	# of cases	% of total
0 - 6 months	65	51
7 - 12 months	5	4
1 - 4 years	18	14
5 - 9 years	10	8
10 - 19 years	13	10
20+ years	16	13

The largest proportion of cases occurred in infants under age 6 months (51%), followed by children aged 1 - 4 years (14%). Culture-positive confirmation of the diagnosis was obtained for 60 (47%) cases; an additional 16 cases not tested or with negative laboratory tests were considered confirmed by epidemiological linkage to a laboratory confirmed case.

Information on immunization history was available for 114 (90%) of cases. Of these, 69 (61%) had received an appropriate number of pertussis-containing vaccine doses for their age. Of 43 cases reported in children aged 3 months - 4 years of age, 27 (63%) did not have documentation of receiving an age-appropriate number of vaccine doses.

Overall, 51 (40%) of cases were hospitalized, with hospitalization most common among infants under 1 year of age (67%). Pneumonia (confirmed by chest x-ray) was reported for 13(10%) of cases; 9 of the 13 cases of pneumonia occurred in infants under one year of age. There were no known deaths among cases reported in 2000.

Rubella - As in 1999, no cases of rubella were reported in 2000.

Tetanus - Three cases of tetanus were reported in 2000. All three cases were females, ages 69, 29, and 70 years. All three cases were preceded by a wound. Documentation of immunization histories were unavailable for all three cases; one (the 29 year old) believed she had last received tetanus toxoid 8 years earlier, the other cases were uncertain of their prior immunization status. All cases were hospitalized, ranging from 3 to 34 days (average length of stay 23 days).

Varicella - Surveillance for varicella in Michigan consists of school- and day-care-based weekly aggregate count case reports. In 2000, 8809 cases were reported, a 28% decrease from the number of cases reported in 1999, and a continuation of the decline in incidence of reported cases since licensure of the varicella vaccine in 1995. Comparing 5-year period prior to vaccine licensure with the 5-year period since, the average annual number of reported cases has declined by 46%.

Table 1 - Number of reported cases of vaccine preventable diseases, Michigan, 2000 and 1999

Disease	Total Cases 2000	Total Cases 1999	Cases < 5 y.o. 2000	Cases < 5 y.o. 1999
Congenital Rubella	0	0	0	0
Diphtheria	0	0	0	0
<i>H. influenzae</i> invasive	11	20	1	8
Hepatitis B	427	509	4	18
Measles	3	6	2	1
Mumps	7	10	1	0
Pertussis	127	74	88	54
Poliomyelitis	0	0	0	0
Rubella	0	0	0	0
Tetanus	3	2	0	0