



Summary of Vaccine Preventable Diseases Reported to the Michigan Department of Community Health, 2001

This report summarizes reported cases of selected vaccine-preventable diseases in Michigan in 2001. Features of the descriptive epidemiology of the diseases are provided. Totals for 2001 and 2000 for comparison are given in Table 1, below.

Congenital Rubella - No cases of congenital rubella were reported in 2001.

Diphtheria - A probable case of diphtheria was reported in 2001 (the last Michigan case reported previously was in 1980). The case was a 19 year old foreign-born female, previously a resident of California, with an incomplete history of diphtheria toxoid immunization.

***Haemophilus influenzae* invasive disease** - Fourteen cases of invasive *Haemophilus influenzae* disease were reported to MDCH in 2001. Only one involved a child under 5 years of age: the case was a 4 year-old male who had received 3 doses of Hib vaccine. The isolate was not serotyped. This underscores the need to arrange for serotyping of *H. influenzae* isolates, especially in persons under age 15 years, to help identify if such cases were vaccine preventable. Eleven *H. influenzae* invasive disease cases were reported in 2000, one under 5 years of age.

Measles - No cases of measles were reported in Michigan in 2001, the first recorded measles-free year in the state. Three cases of measles were reported in Michigan in 2000,

Mumps - Five cases of mumps were reported in Michigan in 2001, the fewest annual number of cases ever reported. Cases included a 3 year-old (unvaccinated), a 13 year-old and an 18 year-old (both with 2 documented vaccine doses), and 2 adults (ages 26 and 56 years old). Four of the five cases were serologically confirmed. Seven cases of mumps were reported in 2000.

Pertussis - One hundred forty nine cases of pertussis were reported in 2001, representing a 17% increase over the 127 cases reported in 2000, and the fifth successive year of an increase in reported cases over previous years. Two separate outbreaks among Amish communities, one involving 43 cases and one involving 18 cases, contributed significantly to the pertussis morbidity this year. In addition to the Amish outbreaks there were 5 clusters of cases involving 2 or more cases, ranging in size from 2 to 6 cases. Pertussis cases were reported from 33 counties, in all reporting regions of the state.

Males accounted for 76 (51%) of reported case. Cases ranged in age from 10 days to 58 years, with a median age of 3 years. Age distribution of cases was as follows:

Age group	# of cases	% of total
0 - 6 months	49	33
7 - 12 months	13	9
1 - 4 years	26	17
5 - 9 years	28	19
10 - 19 years	18	12
20+ years	15	10
Total	149	100

The largest proportion of cases occurred in infants under age 6 months (33%), followed by children aged 1 - 4 years (17%). Culture-positive confirmation of the diagnosis was obtained for 39 (26%) cases; an additional 29 cases that were not tested or with negative laboratory tests were considered confirmed on the basis of epidemiological linkage to a laboratory confirmed case.

Information on immunization history was available for 138 (93%) of cases. Of these, 48 (32%) had received an age-appropriate number of pertussis-containing vaccine doses for their age (when Amish-related cases, who belong to communities that generally do not seek immunizations, are excluded this proportion increases to 51.1%). Of 44 cases reported in children aged 3 months - 4 years of age, 38 (86%) did not have documentation of receiving an age-appropriate number of vaccine doses, and potentially represent cases in this age group that might have been prevented if all vaccine doses had been administered.

Among 128 cases with information available, the median duration of cough was 35.5 days (range 10 days - 108 days). Paroxysmal coughing was reported in 139 (93%) cases, post-tussive vomiting was reported in 99 (55%) cases, whoop was reported in 62 (42%) cases, and apnea was reported in 49 (33%) cases.

Overall, 38 (26%) of cases were hospitalized; among infant cases under 6 months of age, 67% were hospitalized. Pneumonia confirmed by chest x-ray was reported for 9 (6%) of cases overall, and was more common in cases among infants under 6 months of age (6 of 55 cases). There were no reported pertussis deaths in 2001.

Rubella - As in 2000, no cases of rubella were reported in 2001.

Tetanus - No cases of tetanus were reported in Michigan in 2001 (3 were reported in 2000).

Varicella - Surveillance for varicella in Michigan consists of school- and day-care-based weekly aggregate count case reports. In 2001, 6,698 cases were reported. This represents a 24% decrease from the 8,809 number of cases reported in 2000, and continues the declining trend in varicella incidence observed since 1995, when varicella vaccine was licensed for use in the US. The 2001 incidence rate based on reported cases in Michigan is 67 per 100,000 population; the annual incidence rate prior to vaccine licensure (based on the annual average number of reported cases in the 5 year period preceding licensure) was 385 cases per 100,000.

Table 1 - Number of reported cases of vaccine preventable diseases,
Michigan, 2001 and 2000

Disease	Total Cases 2001	Total Cases 2000	Cases < 5y.o. 2001	Cases < 5 y.o. 2000
Congenital Rubella	0	0	0	0
Diphtheria	1	0	0	0
<i>H. influenzae</i> invasive	14	11	1	1
Hepatitis B	618	427	7	4
Measles	0	3	0	2
Mumps	5	7	1	1
Pertussis	149	127	88	88
Poliomyelitis	0	0	0	0
Rubella	0	0	0	0
Tetanus	0	3	0	0