Summary of Vaccine Preventable Diseases Reported to the Michigan Department of Health and Human Services, 2019

This is a summary of reported cases of selected vaccine-preventable diseases in Michigan in 2019. Totals for 2018 are provided for comparison in the table on the final page.

Note: case totals presented here may vary somewhat from other publications owing to differences in date variables used. These totals are based on date of case report to the Michigan public health system and CDC-defined dates for the report year.

Congenital Rubella – No cases of congenital rubella were reported in 2019.

Diphtheria – No cases of diphtheria were reported in Michigan in 2019.

***Haemophilus influenzae* invasive disease** –

There were 24 cases of invasive *Haemophilus influenzae* disease reported in Michigan in 2019 in children under the age of fifteen years. Cases ranged in age from newborn to 11 years, with a median of 1½ years. *H. influenzae* was isolated from blood in 17 (71%) cases, cerebro-spinal fluid in 4 (17%) cases, and both blood and cerebro-spinal fluid in 3 (12%). All but one case (which was identified by non-culture antigen detection and had no growth on culture) had isolates serotyped. None of the cases were found to be caused by serotype b (vaccine-preventable). There were 5 serotype a, 5 serotype f, 2 serotype e, and 11 non-typeable cases.

Measles –

There were 46 cases of measles in Michigan in 2019. This was the highest annual number of measles cases in the state since 1991. Forty-two cases were part of an outbreak in Oakland County that started in March and lasted until June. The index case was a 55-year-old male who was infected in Brooklyn NY where he had spent time before coming to participate in fundraising in the Orthodox Jewish community in south Oakland County. Brooklyn and parts of upstate New York experienced a protracted measles outbreak in 2019 centered on various Orthodox Jewish communities with low immunization rates. Cases in the Michigan outbreak ranged in age from 7 months to 63 years with a median of 30 years of age; 28 (66.7%) of the outbreak cases occurred in persons 19 years of age or older, and 30 (71%) were male. All cases were confirmed; viral genotyping was obtained on 36 of the outbreak cases all of which typed as D8 genotype which was consistent with the New York outbreak. Of the 42 cases in

this outbreak, 39 (93%) had never been vaccinated against measles or had unknown measles immunization history.

In addition to the above outbreak cases, there were four additional measles cases diagnosed in Michigan. All of these were separate, individually imported cases relating to international travel or exposure outside of the U.S. None of these resulted in any detected secondary transmission. A 29-year-old male who visited from Germany was infected there or in transit, experiencing illness onset after arriving in Michigan; measles was confirmed serologically. A 9-month-old male child visiting from Lithuania developed rash 6 days after arriving in Michigan, measles confirmed with D8 viral genotype. A 21-year-old female Michigan resident traveled to Ukraine and was likely infected there, developing illness confirmed as measles (genotype D8) 9 days after returning to the state. A 12-month-old who spent 2 months in Bangladesh with family developed measles shortly after return to Michigan (viral genotype was confirmed as B3).

Meningococcal disease –

There were seven cases of meningococcal disease reported in 2019, all adults, with cases ranging in age from 40 to 86 years, none in age or risk groups specifically recommended for meningococcal vaccination. All isolates had serogroup identified; there were 3 serogroup C, 2 serogroup B, 1 serogroup A, and 1 serogroup W135.

Mumps –

There were 29 cases of mumps reported in Michigan in 2019 which included 5 Confirmed, 20 Probable, and 4 Suspect cases. This was a decline of 65% from the 82 cases reported in 2018. Excluding cases in the Suspect category, cases ranged in age from 1 year to 73 years with a median age of 30 years, and males accounted for 68% of cases. There were no reported outbreaks of mumps in the state in 2019.

Pertussis –

A total of 537 pertussis cases were reported in 2019, a decline of 18% from the total in 2018. Cases ranged in age from 16 days to 91 years with a median age of 10 years (interquartile range = 3 years to 19.5 years) and there was a slight preponderance of females (52%). Cases were reported in 49 counties. There were seven outbreaks (3 or more cases) reported, ranging in size from 3 to 14 cases. There were no pertussis-related deaths reported.

Rubella –

There were no rubella cases in Michigan in 2019.

Tetanus –

There was one reported probable case of tetanus in a 59-year-old male who experienced jaw ache and pain following a dob bite incident. The patient last had a tetanus toxoid approximately 10 years prior. The clinician felt tetanus could not be ruled out. The patient was not hospitalized, and tetanus-specific treatment was not administered.

Varicella –

There were 430 varicella cases reported in Michigan in 2019, a similar number to the 433 cases reported in 2018. Cases ranged in age from 10 days to 97 years, with a median age of 8 years (mean 13.6) and an interquartile range of 4 to 18 years; 55.6% of cases were male. Records indicated 15 cases were admitted to hospital; 10.2% of cases 20 years of age or older were hospitalized compared to 1.5% of those under age 20 years ($p<0.0005$). There were six chickenpox outbreaks reported ranging in size from 2 to 16 cases (four outbreaks consisted of 2 cases only). The outbreak settings involved elementary school (1 outbreak), high school (2 outbreaks), a household (1 outbreak), a home day-care (1 outbreak), and a correctional facility (1 outbreak).

Table 1 - Number of reported cases of selected vaccine preventable diseases, Michigan, 2018 and 2019 (Confirmed and Probable cases unless otherwise noted).

Disease	**Total Cases 2018**	**Total Cases 2019**
Congenital Rubella	0	0
Diphtheria	0	0
H. influenzae invasive <15 years (serotype b)	23 (2)	24 (0)
Measles	19	46
Meningococcal disease	4	7
Mumps (includes Suspect)	82	29
Pertussis	651	537
Poliomyelitis	0	0
Rubella	0	0
Tetanus	2	1
Varicella	433	430