Summary of Vaccine Preventable Diseases Reported to the Michigan Department of Health and Human Services, 2018

This is a summary of reported cases of selected vaccine-preventable diseases in Michigan in 2018. Totals for 2017 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 2018.

Diphtheria – No cases of diphtheria were reported in Michigan in 2018.

***Haemophilus influenzae* invasive disease** –

There were 23 cases cases of invasive *Haemophilus influenzae* disease under the age of 15 years reported in Michigan. These cases ranged in age from newborn to 6 years. *H. influenzae* isolates were recovered from blood in 13 cases (57%), cerebro-spinal fluid in 4 cases (17%), blood and cerebro-spinal fluid in 4 cases (17%), blood and sputum in 1 case (4%), and pleural fluid in 1(4%) case. 21 isolates were serotyped, 2 were identified as serotype b; these occurred in a premature newborn (born at 24 weeks gestation) who died at 16 days from complications of prematurity and necrotizing entercolitis, and an 11 month-old unvaccinated child with a diagnosis of meningitis who survived. The other serotypes included 6 type a, 4 type f, and 9 isolates were non-typeable unencapsulated *H. influenzae* organisms.

Measles –

There were 19 cases of measles in Michigan in 2018. This was the highest annual number of cases in the state since 1994. All cases were the result of exposure during international travel or the result of exposure to an importation case. All 19 cases were confirmed by laboratory testing. Case 1 was a 21-year-old unvaccinated female who was exposed and infected while traveling in India; the viral genotype was determined to be D8. Case 2 was a 49-year-old male resident of Italy with uncertain immunization history who was exposed and infected there and who came to Michigan for a business trip and diagnosed here; the measles genotype was B3. Case 3 was a 36-year-old male with unknown immunization history who was exposed and infected while traveling in the Philippines; measles virus genotype was B3. All three of these

cases returned to Michigan while infectious but did not result in any identified secondary cases. Case 4 was an unvaccinated 22-year-old female who traveled in several European countries, locale of exposure is uncertain but may have occurred in Croatia or Greece. She was infectious upon return and transmitted measles to 6 unvaccinated siblings (cases 5-10) who ranged in age from 4 years to 18 years; all cases in this chain were typed as genotype D8. Cases 11 & 12 were a 2-year-old male and his 25-year-old father who had recently moved to Michigan from Israel where they had been exposed and infected; both were unvaccinated. They were infectious at the time of their move and they in turn transmitted measles to seven unvaccinated members (cases 13-19) of the household in which they lived. The measles genotype was determined to be D8.

Meningococcal disease –

There were 4 cases of meningococcal disease reported in 2018. Cases ranged in age from 30 to 88 years of age. Three of the four cases had serogroup identified, one was serogroup B and 2 were serogroup C. None were in age groups or risk groups specifically targeted for meningococcal immunization.

Mumps –

There were 82 cases of mumps reported in the state in 2018: 10 Confirmed, 32 Probable, 40 Suspect. Excluding the Suspect category (which are less likely to be true cases) cases range in age from 2 years to 83 years with a median of 24 years and a mean of 32.3 years; 57% of cases were male. One outbreak was reported involving 4 Confirmed cases and 6 Suspect cases at a university although definite connections among the cases were not identified.

As in some other recent years, parotitis cases due to influenza (initially suspected to be mumps) were reported in 2018.

Pertussis –

There 651 cases of pertussis reported in 2018. Cases ranged in age from 5 days to 87 years, with a median age of 9 years (mean age 14.3 years). Hospitalization was reported for 40 cases (6.2%); 53% of cases were female. There were no reported deaths due to pertussis. Cases were reported in 58 of Michigan's 83 counties. There were nine reported pertussis outbreaks involving 3 or more cases.

Rubella –

There were no rubella cases in Michigan in 2018.

Tetanus –

There were two reported tetanus cases in Michigan in 2018. A 56-year-old female was diagnosed with probable tetanus following an acute puncture wound to the foot from stepping on a nail two weeks prior. Her available health history indicated an incomplete series of tetanus toxoid vaccination. The second case involved a 20-year-old female who suffered a nail puncture wound to the lower leg and was diagnosed with probable tetanus; her tetanus toxoid history was not indicated in the medical record at the time of diagnosis and care but the state's immunization registry showed a complete series with last dose 8 years prior. Both cases were hospitalized for 2 days and both received tetanus immune globulin.

Varicella –

There were 433 varicella cases reported in 2018, a 20% decline from the 540 cases reported in 2017. Cases ranged in age from 29 days to 85 years, with a median of 7 years and a mean age of 11.9 years. There were slightly more male cases (52%) than females. There were 14 varicella outbreaks reported, ranging in size from 2 cases to 6 cases (mean 3.2 cases, median 3 cases). Nine outbreaks occurred in elementary school settings, 2 in day care/preschool settings, one in a home setting, one in a high school, and one in a correctional facility.

Table 1 - Number of reported cases of selected vaccine preventable diseases,

Michigan, 2017 and 2018 (Confirmed and Probable cases unless otherwise noted).

Disease	**Total Cases 2017**	**Total Cases 2018**
Congenital Rubella	0	0
Diphtheria	0	0
H. influenzae invasive <15 years (serotype b)	26 (1)	23 (2)
Measles	2	19
Meningococcal disease	5	4
Mumps (includes Suspect)	46	82
Pertussis	773	651
Poliomyelitis	0	0
Rubella	0	0
Tetanus	2	2
Varicella	540	433