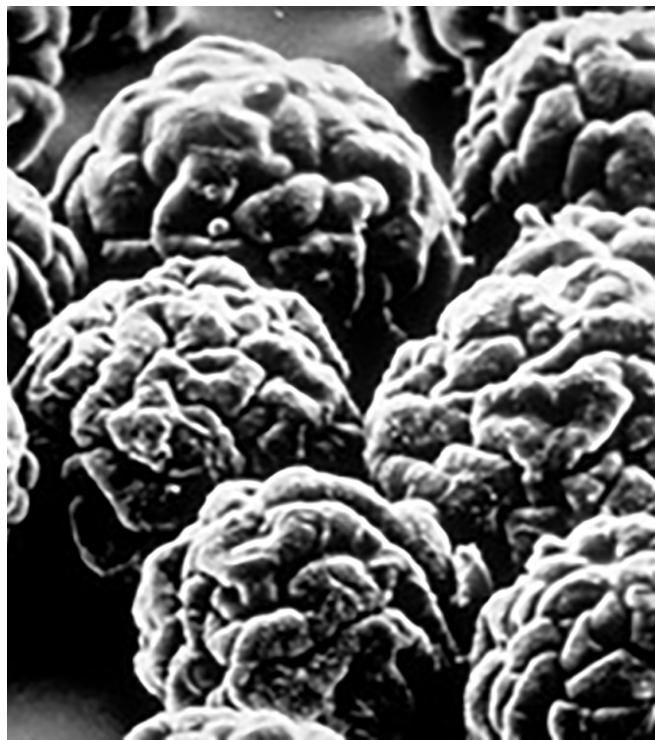




2018 Vaccine Preventable Disease Report



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Vaccine Preventable Diseases in Ottawa County 2018

This is a detailed summary of reported cases of selected vaccine preventable diseases (VPDs) in Ottawa County during 2018. See the Ottawa County Department of Public Health (OCDPH) [2018 Annual Summary of Reportable Diseases](#) for the number of county cases for all reportable diseases.

The VPDs included in this report are:

Congenital rubella
Chickenpox (Varicella)
Diphtheria
Hepatitis A
Hepatitis B
H. Influenzae, serotype b
Measles
Meningococcal disease

Mumps
Polio
Pertussis (Whooping Cough)
Pneumococcal disease
Rubella
Tetanus
Typhoid Fever

Five-Year VPD Trends

Of the **15 notifiable VPDs**, **8 had no reported cases over the past five years**. Table 1 shows annual counts of the selected VPD cases over the last 5 years (2014 to 2018). The **top 2 VPDs** by their 5-year average were:

Pertussis (whooping cough)

23.6 cases/yr

Number of cases
fluctuates from year
to year



Varicella (chickenpox)

22.8 cases/yr

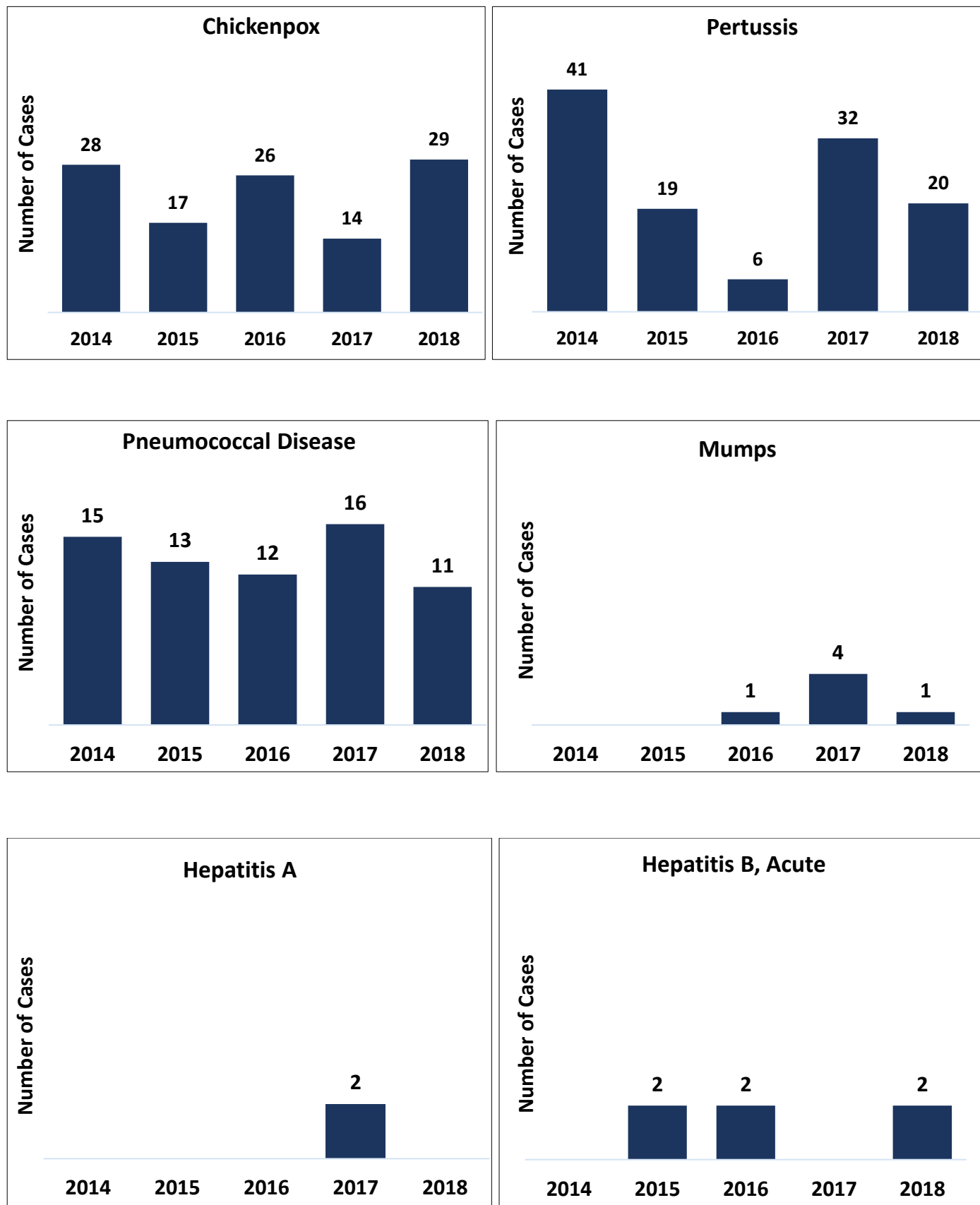
Two-fold increase
in number of cases
from 2017 to 2018



Table 1. Confirmed, probable or suspect VPD cases reported to OCPDH over the past five years.

Vaccine Preventable Disease (VPD)	2014 Cases	2015 Cases	2016 Cases	2017 Cases	2018 Cases	5-Year Total Cases
Congenital Rubella	0	0	0	0	0	0
Chickenpox (Varicella)	28	17	26	14	29	114
Diphtheria	0	0	0	0	0	0
H. influenzae, serotype b	0	0	0	0	0	0
Hepatitis A	0	0	0	2	0	2
Acute Hepatitis B	0	2	2	0	2	6
Measles	0	0	0	0	0	0
Meningococcal Disease (<i>Neisseria</i>)	0	0	1	0	0	1
Mumps	0	0	1	4	1	6
Pertussis (Whooping Cough)	41	19	6	32	20	118
Pneumococcal Disease	15	13	12	16	11	67
Polio	0	0	0	0	0	0
Rubella	0	0	0	0	0	0
Tetanus	0	0	0	0	0	0
Typhoid	0	0	0	0	0	0

Figure 1. Five-year trends of selected VPDs in Ottawa County, 2014-2018.



2018 Details by Disease

Congenital Rubella Syndrome – There were no reported cases of infants born with congenital rubella syndrome among Ottawa County residents in 2018.

Year of last case: before 1984¹

Vaccine²: MMR; 2 doses, typically first given at 1 year of age

Diphtheria – There were no reported cases of diphtheria among Ottawa County residents in 2018.

Year of last case: before 1984¹

Vaccine²: DTaP; 5 doses, typically first given at 2 months of age

Invasive *Haemophilus influenzae*, serotype b (Hib) – There were no reported cases of H. influenzae serotype b among Ottawa County residents. The current vaccine protects against serotype b only. There were 3 invasive *H. influenzae* laboratory-confirmed adult cases of unknown type reported in 2018³.

Year of last case: Not known

Vaccine²: Hib; 3-4 doses, typically first given at 2 months of age

Hepatitis A – There were no reported cases of Hepatitis A (Hep A) among Ottawa County residents in 2018, a decrease from 2 reported cases in 2017. No recent cases of Hep A have been linked to the [ongoing outbreak in Michigan](#).

Year of last case: 2017

Vaccine²: Hepatitis A; 2 doses, typically first given at 1 year of age

Hepatitis B – There were 2 reported cases of acute hepatitis B infections in 2018. Both cases were White and were born in the United States (U.S.).

Year of last acute case: 2018

Vaccine²: Hepatitis B; 3 doses, typically first given at birth

Age Range of acute cases: 50 to 62 years

When hepatitis B virus remains in a person's body, it can lead to long-term illness and can be spread to others. There were 22 newly identified cases of chronic hepatitis B reported among Ottawa County residents in 2018. About 55% of the reported cases were male and 45% were female. A greater proportion of these cases were White (41%), about 32% were Asian, 14% were Black or African American and 5% Hispanic. A majority of the cases (55%) were foreign born, only about 18% were born in the U.S. and 27% had unknown or missing data.

Measles – There were no reported cases of measles among Ottawa County residents in 2018.

Year of last case: 1991 (two cases)

Vaccine²: MMR; 2 doses, typically first given at 1 year of age

Meningococcal disease (*Neisseria meningitidis*) – There were no reported cases of meningococcal disease caused by the bacterium *N. meningitidis* among Ottawa County residents in 2018.

Year of last case: 2016

Vaccine²: MenACWY; 2 doses, typically first given at 11-12 years of age. MenB; 2 doses, given at 16-18 years of age

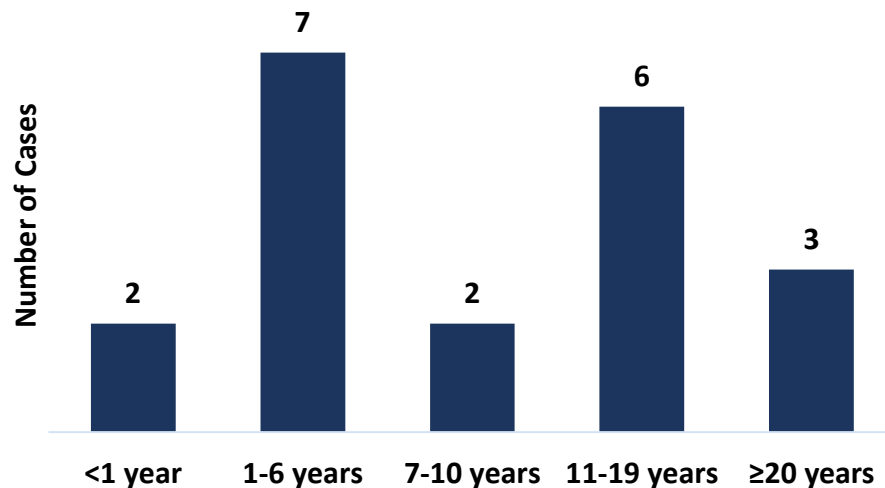
Mumps – There was 1 reported case of mumps among Ottawa County residents in 2018. The source of exposure for this case was not known.

Year of last case: 2018

Vaccine²: MMR; 2 doses, typically first given at 1 year of age

Pertussis (Whooping Cough) – Pertussis, also known as whooping cough, is a highly contagious respiratory disease caused by the bacterium *Bordetella pertussis*. There were 20 cases of whooping cough reported among Ottawa County residents in 2018. Cases were detected from 3 households, indicating the contagiousness of pertussis in intimate settings.

Figure 2. Pertussis Cases in Ottawa County by Age, 2018.



Year of last case: 2018

Vaccine²: DTaP; 5 doses, typically first given at 2 months of age. Tdap; given at 27-36 weeks gestation during each pregnancy, at 11-12 years of age, any adult who has not yet received it.

Age Range of Cases: 8 months to 48 years

Sex: 8 males (40%) and 12 females (60%)

Race/Ethnicity: 16 White (80%); 3 Hispanic (15%)

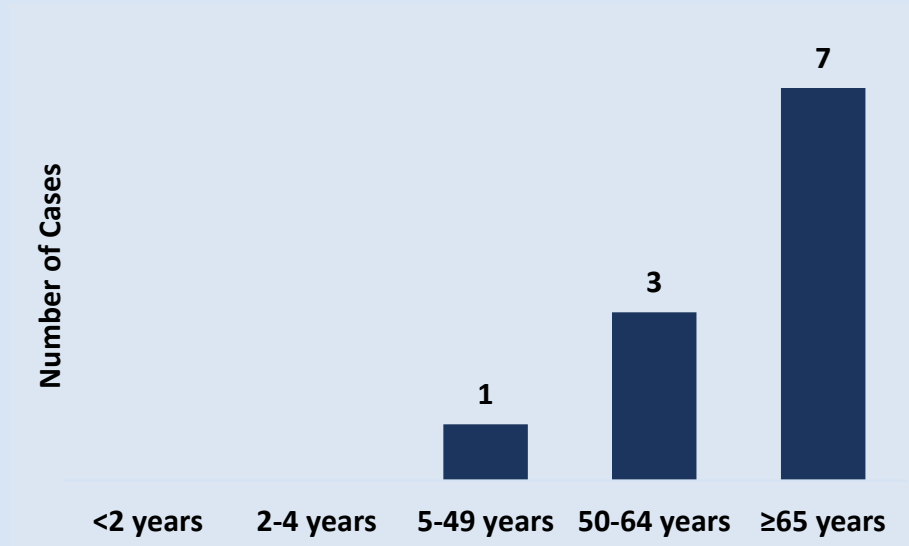
Vaccine Status:

- 15 cases (75%) were up-to-date with the vaccine
- 3 cases (15%) were not up-to-date
- 2 cases (10%) had unknown vaccine status

Pneumococcal disease – Pneumococcal disease is an infection caused by *Streptococcus pneumoniae* bacteria. This disease can cause other illnesses such as ear infections, sinus infections, meningitis, and bacteremia. There were 11 cases of pneumococcal disease caused by *Streptococcus pneumoniae* reported among Ottawa County residents in 2018. There are two vaccines for pneumococcal disease:

- PCV13 is recommended for all children before 2 years of age; all adults 65 years and older; to people 2 through 64 years old with certain medical conditions
- PPSV23 recommended for all adults 65 years and older; people 2 through 64 years with certain medical conditions; to cigarette smokers and those with asthma between the ages of 19 and 64 years old.

Figure 3. Pneumococcal Disease Cases in Ottawa County by Age, 2018.



Year of last case: 2018

Age Range of Cases: 26 to 88 years

Sex: 6 males (55%) and 5 females (45%)

Vaccine²: PCV13 & PPSV23; dependent on age and health status

Vaccine Status:

- 4 cases (36%) were up-to-date with the vaccine(s)
- 2 cases (18%) were not up-to-date with the vaccine(s)
- 5 cases (50%) had unknown vaccine status

Polio – Polio, or poliomyelitis, is a crippling and potentially deadly disease caused by the poliovirus. The virus spreads from person-to-person and can invade an infected person’s brain and spinal cord, causing paralysis. There were no cases of wild-type poliomyelitis reported among Ottawa County residents in 2018.

Year of last case: before 1984¹

Vaccine²: Polio; 4 doses, typically first given at 2 months of age

Rubella – Rubella is a contagious disease caused by a virus. There were no cases of rubella reported among Ottawa County residents in 2018.

Year of last case: 1994 (two cases)

Vaccine²: MMR; 2 doses, typically first given at 1 year of age

Tetanus – Tetanus is an infection caused by *Clostridium tetani* bacteria. There were no reported cases of tetanus among Ottawa County residents in 2018.

Year of last case: before 1984¹

Vaccine²: DTaP; 5 doses, typically first given at 2 months of age. Tdap; given at 27-36 weeks gestation during each pregnancy, at 11-12 years of age, any adult who has not yet received it. Td; typically given every 10 years.

Typhoid Fever – Typhoid fever is a life-threatening illness caused by the bacterium *Salmonella typhi*. Most cases reported in the U.S. are exposed while traveling abroad. It can be prevented through vaccination, by avoiding high-risk foods, and by drinking water from safe sources. There were no cases of typhoid fever reported among Ottawa County residents in 2018.

Year of last case: Not known

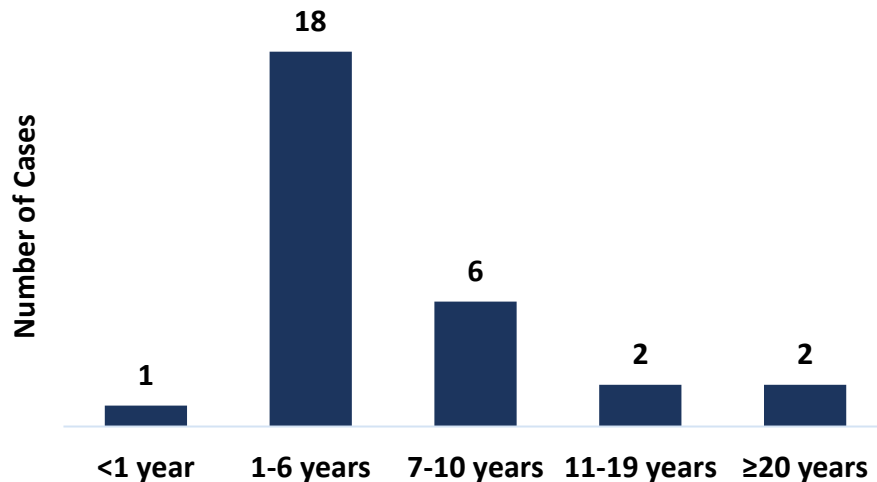
Vaccine²: Inactivated typhoid vaccine; given at 2 years and older; one dose recommended at least 2 weeks before travel. Live typhoid vaccine; 4 capsules administered orally; given at 6 years and older. Last dose taken at least 1 week before travel.

Varicella (Chickenpox) – Chickenpox is a very contagious disease caused by the varicella-zoster virus (VZV). There were 29 chickenpox cases reported among Ottawa County residents in 2018. Eleven (38%) of the cases were epidemiologically linked to other varicella cases.

Year of last case: 2018

Vaccine²: Varicella; 2 doses, typically first given at 1 year of age

Figure 4. Varicella (Chickenpox) Cases in Ottawa County by Age, 2018.



Age Range of Cases: 11 months to 34 years

Sex: 17 males (59%) and 12 females (41%)

Vaccine Status:

- 25 cases (86%) were not up-to-date with the vaccine
- 4 cases (14%) were up-to-date with the varicella vaccine

2018 Highlights

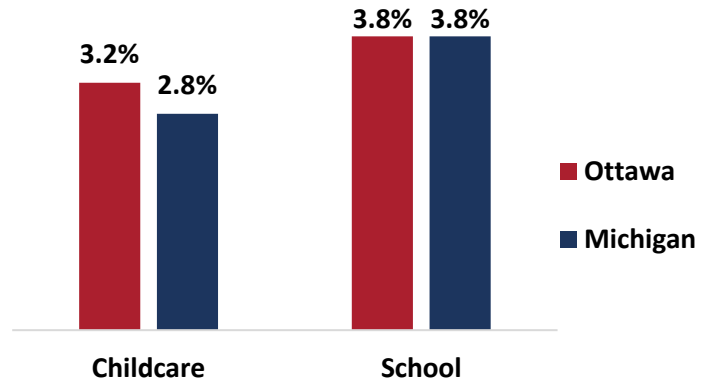
A slightly higher percentage of Ottawa County children have non medical waivers objecting to one or more vaccines for philosophical or religious reasons (Figure 5) than the State of Michigan⁴. In Ottawa County, only 72.5% of children have all of the recommended vaccines by the time they are three years old. Children without medically documented immunity from a disease or a record of vaccination can be excluded from school or child care for up to 3 weeks or more if exposed to a VPD. However, Ottawa County ranks 1st among Michigan's counties for the percentage of young children who are fully vaccinated and 10th among Michigan's counties for the percentage of fully vaccinated adolescents⁴.

All VPDs can lead to severe sickness and even death. Because a high level of immunity is needed to prevent the spread of these diseases, vaccination is strongly recommended for persons with no contraindications. Some children and adults are not recommended to be vaccinated because of their medical condition(s). Vaccination not only protects the one being vaccinated, it also protects others by preventing transmission.

Because many VPDs occur less frequently than in the past, healthcare providers may have less experience recognizing symptoms. To confirm a diagnosis, OCDPH [requests an appropriate laboratory test](#) to confirm the diagnosis of any suspect vaccine preventable disease. Chickenpox (varicella), whooping cough (pertussis) and mumps are easy to misdiagnose, leading to delayed treatment and

further spread of disease. Report all suspected VPDs within 24 hours to the Ottawa County Department of Public Health at (616) 393-5266.

Figure 5. A higher percentage of school-aged children have vaccine waivers than children in childcare/preschool in 2018.



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References

1. Electronic data are available from 1984 to the present. There may have been a case of this disease among Ottawa County residents prior to 1984, however this data is not currently obtainable.
2. Centers for Disease Control and Prevention (CDC) Recommended Immunization Schedule for children, teens and adults for detailed information on ages and the number of doses needed for all vaccines. <https://www.cdc.gov/vaccines/schedules/index.html>.
3. Serotyping is mandatory for patients who are under 15 years of age.
4. Vaccine waiver and immunization coverage data through September 30, 2019 from the Michigan Department of Health & Human Services' County Quarterly Immunization Report Card. https://www.michigan.gov/documents/mdch/Ottawa_447497_7.pdf.

Note

Case data for this report is obtained from the Michigan Disease Surveillance System (MDSS).

To learn more about vaccines and vaccine preventable diseases, visit <https://www.cdc.gov/vaccines/vpd/>.

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Front Cover Image: Scanning electron microscope view of the wild polio virus;
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