OHIO DEPARTMENT OF HEALTH

ANNUAL SUMMARY OF INFECTIOUS DISEASES

OHIO

2019

REPORTED INCIDENCE OF SELECTED NOTIFIABLE DISEASES

PREPARED AND DISTRIBUTED BY:

BUREAU OF INFECTIOUS DISEASES

TABLE OF CONTENTS

Introduction 1

Ohio Notifiable Diseases 2

Ohio County Population Map 4

Tables of Selected Notifiable Diseases 5

- Reported Cases of Selected Notifiable Diseases by Year of Onset, Ohio, 2015-2019 6
- Reported Cases of Selected Notifiable Diseases by Age in Years, Ohio, 2019 8
- Reported Cases of Selected Notifiable Diseases by Sex, Ohio, 2019 12
- Reported Cases of Selected Notifiable Diseases by Month of Onset, Ohio, 2019 14
- Reported Cases of Selected Notifiable Diseases by County of Residence, Ohio, 2019 18
- *Escherichia coli*, Shiga Toxin-Producing Serogroups by Year of Onset, Ohio, 2015-2019 44
- *Haemophilus influenzae*, Invasive Disease Serotypes in Children <5 Years of Age by Year of Onset, Ohio, 2015-2019 45
- Meningococcal Disease Serogroups by Year of Onset, Ohio, 2015-2019 46
- *Salmonella* Serotypes by Year of Onset, Ohio, 2015-2019 47

Graphs of Selected Notifiable Disease Incidence 51

- Campylobacteriosis 52
- Cryptosporidiosis 53
- Cyclosporiasis 54
- *Escherichia coli*, Shiga Toxin-Producing 55
- Giardiasis 56
- *Haemophilus influenzae*, Invasive Disease 57
- Hepatitis A 58
- Influenza-Associated Hospitalization 59
- La Crosse Virus Disease 60
- Legionellosis 61
- Lyme Disease 62

TABLE OF CONTENTS

Malaria 63

Meningitis, Aseptic 64

Meningitis, Other Bacterial 65

Mumps 66

Pertussis 67

Salmonellosis 68

Shigellosis 69

Spotted Fever Rickettsiosis 70

Streptococcal Disease, Group A, Invasive 71

Streptococcal Disease, Group B, in Newborn 72

Streptococcus pneumoniae, Invasive Disease 73

Varicella 74

Vibriosis 75

West Nile Virus Infection 76

Yersinosis 77

Profiles of Selected Notifiable Diseases 78

Candida auris Infection 78

Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE) 79

Outbreak Summaries 85

Community Outbreaks 85

Foodborne Outbreaks 86

Healthcare-Associated Outbreaks 88

Institutional Outbreaks 90

Waterborne Outbreaks 93

Zoonotic Outbreaks 93

TABLE OF CONTENTS

Technical Notes 96

Specific Diseases 96

Outbreaks 97

Rate Calculations 98

Diseases Not Included in Tables 98

Serotypes and Serogroups 98

References 99

INTRODUCTION

The *Annual Summary of Infectious Diseases, Ohio, 2019* provides an overview of the incidence of selected notifiable infectious diseases. The report includes tables of disease by year of onset, age group, sex, month of onset, and county of residence and tables of Shiga toxin-producing *Escherichia coli* serogroups, invasive *Haemophilus influenzae* serotypes in children <5 years of age, meningococcal disease serogroups, and *Salmonella* serotypes. In addition, there are graphs of selected disease incidence, profiles of selected diseases, and outbreak summaries.

The sources of these data are individual case and laboratory reports submitted to the Ohio Department of Health (ODH) by infection preventionists, healthcare providers, laboratories, and city, county, and combined health districts throughout the state and entered into the Ohio Disease Reporting System (ODRS). Data reflect disease incidence for Ohio residents only, but include diseases acquired by Ohio residents while traveling out of state or overseas.

This summary includes confirmed and probable cases. For all diseases, the case criteria used are those provided in:

- The ODH Infectious Disease Control Manual (IDCM).
- The Centers for Disease Control and Prevention (CDC) National Notifiable Diseases Surveillance System's 2019 national notifiable infectious disease case definitions.

HIV/AIDS, non-perinatal hepatitis B, hepatitis C, sexually transmitted diseases, and tuberculosis surveillance data are not included in this report. Please refer to each program's website for summary reports of these diseases as well as previous annual summaries.

Thanks to all Ohio infection preventionists, healthcare providers, laboratories, and local health departments for their hard work and dedication to reporting infectious diseases in the most accurate, complete, and timely manner. These efforts are essential in protecting and improving the health of all Ohioans.

Questions or comments regarding this annual summary may be directed to the ODH Bureau of Infectious Diseases at 614-995-5599.

OHIO NOTIFIABLE DISEASES

Ohio Administrative Code (OAC) 3701-3, effective Aug. 1, 2019

CLASS A

Diseases of major public health concern because of the severity of disease or potential for epidemic spread. Report immediately via telephone upon recognition that a case, a suspected case, or a positive laboratory result exists.

- Anthrax.
- Botulism, foodborne.
- Cholera.
- Diphtheria.
- Influenza A, novel virus.
- Measles.
- Meningococcal disease.
- Middle East respiratory syndrome.
- Plague.
- Rabies, human.
- Rubella, not congenital.
- Severe acute respiratory syndrome.
- Smallpox.
- Tularemia.
- Viral hemorrhagic fever.
  - Ebola virus disease.
  - Lassa fever.
  - Marburg hemorrhagic fever.
  - Crimean-Congo hemorrhagic fever.
- Any unexpected pattern of cases, suspected cases, deaths or increased incidence of any other disease of major public health concern because of the severity of disease or potential for epidemic spread, which may indicate a newly recognized infectious agent, outbreak, epidemic, related public health hazard or act of bioterrorism.

CLASS B

Diseases of public health concern needing timely response because of potential for epidemic spread. Report by the end of the next business day after the existence of a case, a suspected case, or a positive laboratory result is known.

- Amebiasis.
- Arboviral neuroinvasive and non-neuroinvasive disease:
  - Chikungunya virus infection.
  - Eastern equine encephalitis virus disease.
  - La Crosse virus disease.
  - Powassan virus disease.
  - St. Louis encephalitis virus disease.
  - West Nile virus infection.
  - Western equine encephalitis virus disease.
  - Yellow fever.
  - Zika virus infection.
  - Other arthropod-borne disease.
- Babesiosis.
- Botulism, infant.
- Botulism, wound.
- Brucellosis.
- Campylobacteriosis.
- *Candida auris*.
- Carbapenemase-producing carbapenem-resistant Enterobacterales (CP-CRE):
  - CP-CRE *Enterobacter* spp.
  - CP-CRE *Escherichia coli*.
  - CP-CRE *Klebsiella* spp.
  - CP-CRE other.
- Chancroid.
- *Chlamydia trachomatis*.
- Coccidioidomycosis.
- Creutzfeldt-Jakob disease.
- Cryptosporidiosis.
- Cyclosporiasis.
- Dengue.
- *Escherichia coli*, Shiga toxin-producing.
- Ehrlichiosis/Anaplasmosis.
- Giardiasis.
- Gonorrhea.
- *Haemophilus influenzae*, invasive disease.
- Hantavirus.
- Hemolytic uremic syndrome.
- Hepatitis A.
- Hepatitis B, non-perinatal.
- Hepatitis B, perinatal.
- Hepatitis C, non-perinatal.

OHIO NOTIFIABLE DISEASES

Ohio Administrative Code (OAC) 3701-3, effective Aug. 1, 2019

CLASS B, CONTINUED

Diseases of public health concern needing timely response because of potential for epidemic spread. Report by the end of the next business day after the existence of a case, a suspected case, or a positive laboratory result is known.

- Hepatitis C, perinatal.
- Hepatitis D.
- Hepatitis E.
- Influenza-associated hospitalization.
- Influenza-associated pediatric mortality.
- Legionellosis.
- Leprosy (Hansen disease).
- Leptospirosis.
- Listeriosis.
- Lyme disease.
- Malaria.
- Meningitis, aseptic.
- Meningitis, other bacterial.
- Mumps.
- Pertussis.
- Poliomyelitis.
- Psittacosis.
- Q fever.
- Rubella, congenital.
- *Salmonella* Paratyphi infection.
- *Salmonella* Typhi infection.
- Salmonellosis.
- Shigellosis.
- Spotted fever rickettsiosis.
- *Staphylococcus aureus*, vancomycin resistant or intermediate resistant.
- Streptococcal disease, group A, invasive.
- Streptococcal disease, group B, in newborn.
- Streptococcal toxic shock syndrome.
- *Streptococcus pneumoniae*, invasive disease.
- Syphilis.
- Tetanus.
- Toxic shock syndrome.
- Trichinellosis.
- Tuberculosis.
- Varicella.
- Vibriosis.
- Yersiniosis.

CLASS C

Report an outbreak, unusual incidence or epidemic (e.g., histoplasmosis, pediculosis, scabies, staphylococcal infections) by the end of the next business day.

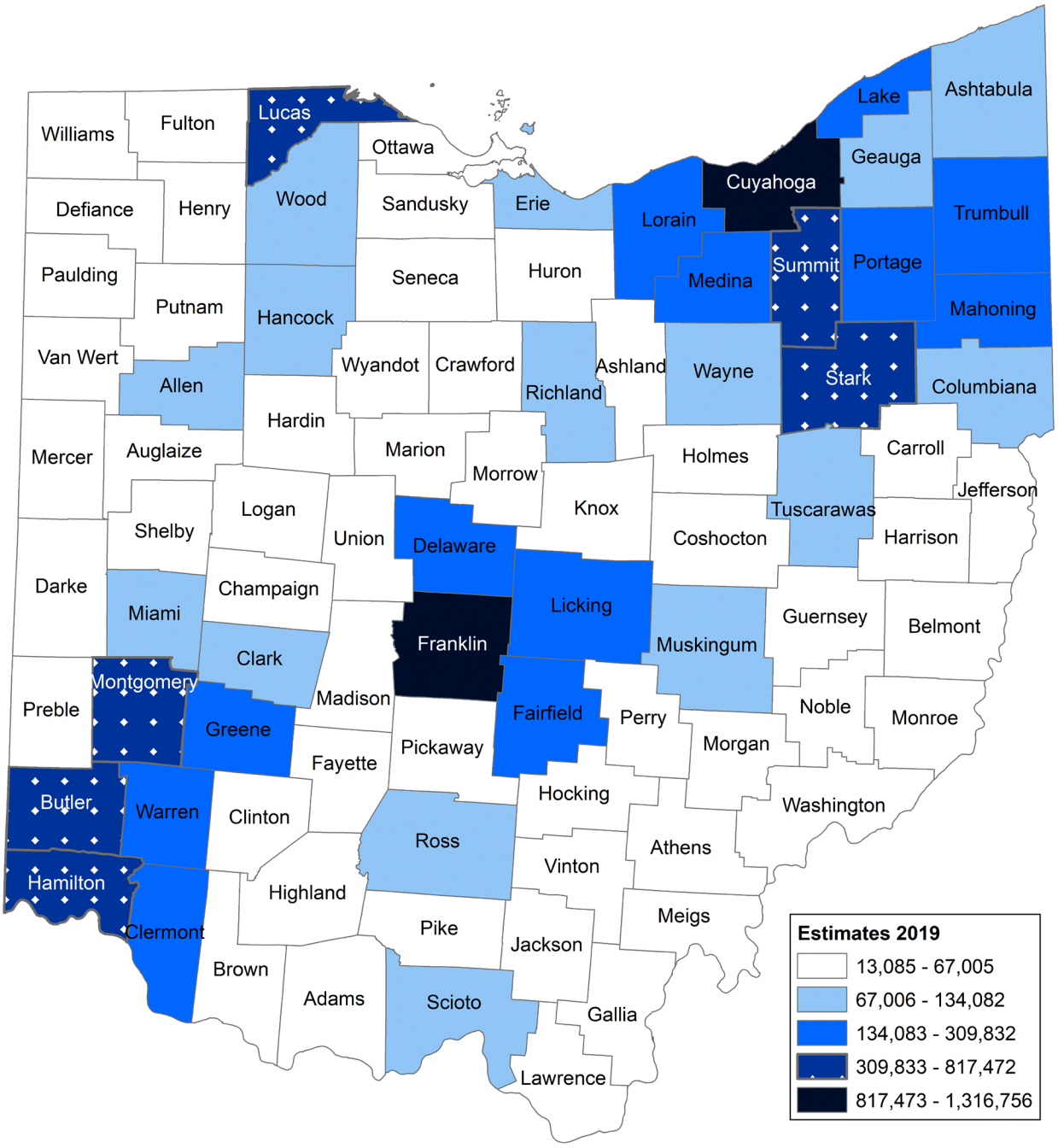
- Community.
- Foodborne.
- Healthcare-associated.
- Institutional.
- Waterborne.
- Zoonotic.

AIDS AND HIV REPORTING

Cases of AIDS (acquired immune deficiency syndrome), AIDS-related conditions, HIV (human immunodeficiency virus) infection, perinatal exposure to HIV, all CD4 T-lymphocyte counts, and all tests used to diagnose HIV must be reported on forms and in a manner prescribed by the director.

For the current list of reportable diseases in Ohio, please see Know Your ABCs: A Quick Guide to Reportable Infectious Diseases in Ohio or OAC 3701-3-02 and 3701-3-12.

OHIO COUNTY POPULATION MAP



Source of population data: 2019 U.S. Census estimates.

TABLES OF SELECTED NOTIFIABLE DISEASES

BY YEAR OF ONSET TABLE *Pages 6-7*

This table displays case counts and rates for five years of data and the median and mean counts and rates during 2015-2019. Medians and means were calculated only when five years of data were available. Population data come from the U.S. Census estimates for each year. Data are by year of onset with the exception of outbreaks, which are shown by date of report for all years.

BY AGE TABLE *Pages 8-11*

This table provides case counts and rates by age group (in years) for 2019. Age refers to the patient's age at the earliest known date associated with the case. Population data come from the 2019 U.S. Census estimates. Outbreak data are not included in this table.

BY SEX TABLE *Pages 12-13*

This table contains case counts and rates by sex for 2019. Population data come from the 2019 U.S. Census estimates. Outbreak data are not included in this table.

BY MONTH OF ONSET TABLE *Pages 14-17*

Case counts and percentages by month of onset for 2019 are presented in this table. Month refers to the month of symptom onset except for outbreaks, which are by month of report, and for influenza-associated pediatric mortality, which is by month of death.

BY COUNTY OF RESIDENCE TABLE *Pages 18-43*

This table displays case counts and rates by county for 2019. County refers to the patient's county of residence. If the county of residence is unknown, then the county in which the physician, hospital, or local health department is located is used. Population data come from the 2019 U.S. Census estimates.

***ESCHERICHIA COLI*, SHIGA TOXIN-PRODUCING SEROGROUPS TABLE** *Page 44*

This table shows Shiga toxin-producing *Escherichia coli* case counts by serogroup during 2015-2019. The bacteriology laboratory at ODH performs serogrouping of Shiga toxin-producing *E. coli* isolates.

***HAEMOPHILUS INFLUENZAE*, INVASIVE DISEASE SEROTYPES TABLE** *Page 45*

This table shows invasive *Haemophilus influenzae* case counts in children <5 years of age by serotype during 2015-2019. The meningitis laboratory at CDC performs serogrouping of *H. influenzae* isolates.

MENINGOCOCCAL SEROGROUPS TABLE *Page 46*

This table shows meningococcal disease case counts by serogroup during 2015-2019. The bacteriology laboratory at ODH performs serogrouping of *Neisseria meningitidis* isolates.

***SALMONELLA* SEROTYPES TABLE** *Pages 47-50*

Salmonella case counts by serotype during 2015-2019 are contained in this table. Serotypes, untyped serogroups, and untyped/ungrouped isolates are provided. The bacteriology laboratory at ODH performs serotyping of *Salmonella* isolates.

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY YEAR OF ONSET, OHIO, 2015-2019

GENERAL INFECTIOUS DISEASES	2015		2016		2017		2018		2019		MEDIAN		MEAN	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Amebiasis	16	0.1	19	0.2	6	0.1	12	0.1	10	0.1	12	0.1	13	0.1
Botulism	35	0.3	8	0.1	3	0.0	2	0.0	6	0.1	6	0.1	11	0.1
Foodborne	29	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	6	0.0
Infant*	5	*	8	*	3	*	2	*	6	*	5	*	5	*
Wound	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Campylobacteriosis	1,786	15.4	1,962	16.9	2,080	17.8	2,192	18.8	2,438	20.9	2,080	17.8	2,092	18.0
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	–	n/a	–	n/a	–	n/a	393	3.4	382	3.3	–	n/a	–	n/a
Coccidioidomycosis	13	0.1	23	0.2	28	0.2	19	0.2	19	0.2	19	0.2	20	0.2
Creutzfeldt-Jakob Disease (CJD)	8	0.1	4	0.0	20	0.2	14	0.1	20	0.2	14	0.1	13	0.1
Cryptosporidiosis	429	3.7	1,949	16.8	643	5.5	638	5.5	684	5.9	643	5.5	869	7.5
Cyclosporiasis	1	0.0	6	0.1	23	0.2	92	0.8	146	1.2	23	0.2	54	0.5
Escherichia coli, Shiga Toxin-Producing	265	2.3	263	2.3	287	2.5	537	4.6	591	5.1	287	2.5	389	3.4
O157:H7	105	0.9	77	0.7	60	0.5	68	0.6	74	0.6	74	0.6	77	0.7
Not O157:H7	135	1.2	159	1.4	166	1.4	135	1.2	168	1.4	159	1.4	153	1.3
Unknown Serotype	25	0.2	27	0.2	61	0.5	334	2.9	349	3.0	61	0.5	159	1.4
Giardiasis	376	3.2	395	3.4	427	3.7	499	4.3	451	3.9	427	3.7	430	3.7
Haemophilus influenzae, Invasive Disease	162	1.4	180	1.5	256	2.2	272	2.3	353	3.0	256	2.2	245	2.1
Hemolytic Uremic Syndrome (HUS)	3	0.0	7	0.1	5	0.0	4	0.0	5	0.0	5	0.0	5	0.0
Hepatitis A	36	0.3	38	0.3	51	0.4	1,838	15.7	1,624	13.9	51	0.4	717	6.1
Hepatitis E	1	0.0	5	0.0	2	0.0	2	0.0	0	0.0	2	0.0	2	0.0
Legionellosis	566	4.9	510	4.4	583	5.0	950	8.1	803	6.9	583	5.0	682	5.9
Leprosy (Hansen Disease)	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Listeriosis	25	0.2	36	0.3	26	0.2	30	0.3	30	0.3	30	0.3	29	0.3
Meningitis, Aseptic	746	6.4	664	5.7	482	4.1	634	5.4	646	5.5	646	5.5	634	5.4
Meningitis, Other Bacterial*	81	0.7	134	1.2	146	1.3	143	1.2	148	1.3	143	1.2	130	1.1
Salmonella Paratyphi Infection*	–	n/a	–	n/a	–	n/a	–	n/a	3	0.0	–	n/a	–	n/a
Salmonella Typhi Infection*	–	n/a	–	n/a	–	n/a	–	n/a	6	0.1	–	n/a	–	n/a
Salmonellosis	1,373	11.8	1,528	13.2	1,390	11.9	1,507	12.9	1,600	13.7	1,507	12.9	1,480	12.7
Shigellosis	748	6.4	1,076	9.3	616	5.3	517	4.4	425	3.6	616	5.3	676	5.8
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	12	0.1	8	0.1	4	0.0	8	0.1	5	0.0	8	0.1	7	0.1
Streptococcal Disease, Group A, Invasive	310	2.7	419	3.6	635	5.4	682	5.8	780	6.7	635	5.4	565	4.8
Streptococcal Disease, Group B, in Newborn*	73	*	67	*	62	*	63	*	70	*	67	*	67	*
Streptococcal Toxic Shock Syndrome (STSS)	6	0.1	11	0.1	10	0.1	25	0.2	13	0.1	11	0.1	13	0.1
Toxic Shock Syndrome (TSS)	1	0.0	3	0.0	1	0.0	1	0.0	2	0.0	1	0.0	2	0.0
Typhoid Fever	8	0.1	11	0.1	37	0.3	6	0.1	–	n/a	–	n/a	–	n/a
Vibriosis	15	0.1	13	0.1	39	0.3	52	0.4	60	0.5	39	0.3	36	0.3
Vibrio parahaemolyticus Infection	9	0.0	6	0.0	13	0.1	13	0.1	10	0.1	10	0.1	10	0.1
Vibrio vulnificus Infection	0	0.0	0	0.0	1	0.0	2	0.0	0	0.0	0	0.0	1	0.0
Other (Not Cholera)	6	0.1	7	0.1	25	0.2	37	0.3	50	0.4	25	0.2	25	0.2
Yersiniosis	44	0.4	57	0.5	51	0.4	54	0.5	112	1.0	54	0.5	64	0.6
SUBTOTAL	**7,140**	**61.5**	**9,396**	**80.9**	**7,913**	**67.9**	**11,186**	**95.7**	**11,432**	**97.8**	**9,396**	**80.9**	**9,413**	**80.7**

OUTBREAKS*														
Community*	49	n/a	46	n/a	30	n/a	38	n/a	25	n/a	38	n/a	38	n/a
Foodborne*	81	n/a	83	n/a	65	n/a	79	n/a	68	n/a	79	n/a	75	n/a
Healthcare-Associated*	97	n/a	79	n/a	103	n/a	122	n/a	148	n/a	103	n/a	110	n/a
Institutional*	163	n/a	292	n/a	228	n/a	258	n/a	187	n/a	228	n/a	226	n/a
Waterborne*	8	n/a	20	n/a	9	n/a	8	n/a	9	n/a	9	n/a	11	n/a
Zoonotic*	11	n/a	17	n/a	13	n/a	15	n/a	17	n/a	15	n/a	15	n/a
SUBTOTAL	**409**	**n/a**	**537**	**n/a**	**448**	**n/a**	**520**	**n/a**	**454**	**n/a**	**454**	**n/a**	**474**	**n/a**

N = number of cases reported.
Rates use U.S. Census estimates for each year and are per 100,000 population.
n/a = not applicable.
(–) indicates a condition not reportable at the time.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY YEAR OF ONSET, OHIO, 2015-2019

VACCINE-PREVENTABLE	2015		2016		2017		2018		2019		MEDIAN		MEAN	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Hepatitis B, Perinatal Infection*	0	*	0	*	3	*	2	*	0	*	0	*	1	*
Influenza-Associated Hospitalization	3,799	32.7	4,130	35.6	11,819	101.4	14,438	123.5	10,886	93.1	10,886	93.1	9,014	77.3
Influenza-Associated Pediatric Mortality*	2	*	1	*	9	*	2	*	6	*	2	*	4	*
Influenza A Virus, Novel Human Infection*	1	0.0	6	0.1	18	0.2	4	0.0	0	0.0	4	0.0	6	0.0
Measles	1	0.0	0	0.0	1	0.0	0	0.0	1	0.0	1	0.0	1	0.0
Imported	1	0.0	0	0.0	1	0.0	0	0.0	1	0.0	1	0.0	1	0.0
Indigenous	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Meningococcal Disease	18	0.2	8	0.1	12	0.1	7	0.1	13	0.1	12	0.1	12	0.1
Mumps	14	0.1	74	0.6	60	0.5	38	0.3	69	0.6	60	0.5	51	0.4
Pertussis	798	6.9	971	8.4	830	7.1	668	5.7	956	8.2	830	7.1	845	7.2
Streptococcus pneumoniae , Invasive Disease	965	8.3	977	8.4	1,235	10.6	1,293	11.1	1,273	10.9	1,235	10.6	1,149	9.8
Ages < 5 Years*	56	*	58	*	85	*	62	*	61	*	61	*	64	*
Drug Resistant, Ages 5+ Years*	269	*	249	*	314	*	347	*	338	*	314	*	303	*
Drug Susceptible, Ages 5+ Years*	640	*	670	*	836	*	884	*	874	*	836	*	781	*
Tetanus	1	0.0	2	0.0	0	0.0	2	0.0	0	0.0	1	0.0	1	0.0
Varicella	494	4.3	450	3.9	471	4.0	444	3.8	413	3.5	450	3.9	454	3.9
SUBTOTAL	**6,093**	**52.5**	**6,619**	**57.0**	**14,458**	**124.0**	**16,898**	**144.6**	**13,617**	**116.5**	**13,617**	**116.5**	**11,537**	**98.9**
ZOONOSES														
Babesiosis	1	0.0	0	0.0	1	0.0	1	0.0	4	0.0	1	0.0	1	0.0
Brucellosis	1	0.0	3	0.0	0	0.0	2	0.0	0	0.0	1	0.0	1	0.0
Chikungunya Virus Infection*	10	0.1	4	0.0	4	0.0	3	0.0	14	0.1	4	0.0	7	0.0
Dengue	11	0.1	6	0.1	6	0.1	7	0.1	12	0.1	7	0.1	8	0.1
Ehrlichiosis/Anaplasmosis	19	0.2	13	0.1	20	0.2	20	0.2	28	0.2	20	0.2	20	0.2
Anaplasma phagocytophilum *	1	0.0	5	0.0	3	0.0	3	0.0	5	0.0	3	0.0	3	0.0
Ehrlichia chaffeensis *	17	0.1	8	0.1	17	0.1	17	0.1	23	0.2	17	0.1	16	0.1
Unknown	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
La Crosse Virus Disease*	24	0.2	9	0.1	13	0.1	39	0.3	26	0.2	24	0.2	22	0.2
Leptospirosis	0	0.0	1	0.0	2	0.0	3	0.0	0	0.0	1	0.0	1	0.0
Lyme Disease	147	1.3	159	1.4	270	2.3	295	2.5	460	3.9	270	2.3	266	2.3
Malaria	36	0.3	63	0.5	60	0.5	56	0.5	59	0.5	59	0.5	55	0.5
Q Fever	4	0.0	3	0.0	1	0.0	3	0.0	4	0.0	3	0.0	3	0.0
Acute	4	0.0	2	0.0	0	0.0	2	0.0	3	0.0	2	0.0	2	0.0
Chronic	0	0.0	1	0.0	1	0.0	1	0.0	1	0.0	1	0.0	1	0.0
Rabies, Animal*	26	n/a	41	n/a	20	n/a	55	n/a	42	n/a	41	n/a	37	n/a
Spotted Fever Rickettsiosis*	13	0.1	23	0.2	39	0.3	35	0.3	49	0.4	35	0.3	32	0.3
Trichinellosis	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Tularemia	1	0.0	0	0.0	2	0.0	1	0.0	0	0.0	1	0.0	1	0.0
West Nile Virus Infection	35	0.3	17	0.1	34	0.3	65	0.6	3	0.0	34	0.3	31	0.3
Zika Virus Infection*	–	n/a	95	0.8	4	0.0	0	0.0	0	0.0	–	n/a	–	n/a
SUBTOTAL	**328**	**2.6**	**438**	**3.4**	**476**	**3.9**	**585**	**4.5**	**701**	**5.6**	**476**	**3.9**	**506**	**4.0**
GRAND TOTAL	**13,970**	**116.5**	**16,990**	**141.3**	**23,295**	**195.8**	**29,189**	**244.8**	**26,204**	**219.9**	**23,295**	**195.8**	**21,930**	**183.7**
POPULATION	**11,613,423**		**11,614,373**		**11,658,609**		**11,689,442**		**11,689,100**		**11,658,609**		**11,652,989**	

N = number of cases reported.
Rates use U.S. Census estimates for each year and are per 100,000 population.
n/a = not applicable.
(–) indicates a condition not reportable at the time.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY AGE IN YEARS, OHIO, 2019

GENERAL INFECTIOUS DISEASES	0–4		5–9		10–14		15–19		20–29		30–39	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Amebiasis	0	0.0	0	0.0	1	0.1	0	0.0	1	0.1	2	0.1
Botulism	6	0.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Infant*	6	*	0	*	0	*	0	*	0	*	0	*
Campylobacteriosis	215	31.1	66	9.3	51	7.0	107	14.2	280	18.0	257	17.4
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	4	0.6	0	0.0	2	0.3	2	0.3	9	0.6	16	1.1
Coccidioidomycosis	0	0.0	0	0.0	1	0.1	0	0.0	2	0.1	3	0.2
Creutzfeldt-Jakob Disease (CJD)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Cryptosporidiosis	105	15.2	43	6.1	26	3.6	44	5.8	107	6.9	117	7.9
Cyclosporiasis	0	0.0	0	0.0	0	0.0	3	0.4	16	1.0	25	1.7
Escherichia coli, Shiga Toxin-Producing	111	16.1	33	4.7	27	3.7	52	6.9	86	5.5	74	5.0
O157:H7	21	3.0	6	0.8	6	0.8	7	0.9	12	0.8	8	0.5
Not O157:H7	40	5.8	12	1.7	7	1.0	19	2.5	29	1.9	29	2.0
Unknown Serotype	50	7.2	15	2.1	14	1.9	26	3.4	45	2.9	37	2.5
Giardiasis	62	9.0	23	3.2	18	2.5	14	1.9	65	4.2	54	3.7
Haemophilus influenzae, Invasive Disease	33	4.8	8	1.1	1	0.1	4	0.5	20	1.3	19	1.3
Hemolytic Uremic Syndrome (HUS)	2	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hepatitis A	3	0.4	7	1.0	7	1.0	17	2.2	340	21.9	537	36.4
Legionellosis	0	0.0	1	0.1	0	0.0	1	0.1	14	0.9	43	2.9
Listeriosis	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Meningitis, Aseptic	216	31.3	34	4.8	23	3.1	43	5.7	79	5.1	92	6.2
Meningitis, Other Bacterial*	35	5.1	2	0.3	3	0.4	2	0.3	14	0.9	19	1.3
Salmonella Paratyphi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1	1	0.1
Salmonella Typhi Infection*	0	0.0	2	0.3	0	0.0	1	0.1	2	0.1	1	0.1
Salmonellosis	213	30.8	65	9.2	37	5.1	68	9.0	151	9.7	166	11.2
Shigellosis	112	16.2	50	7.1	14	1.9	6	0.8	45	2.9	59	4.0
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
Streptococcal Disease, Group A, Invasive	15	2.2	14	2.0	5	0.7	6	0.8	75	4.8	127	8.6
Streptococcal Disease, Group B, in Newborn*	70	*	0	*	0	*	0	*	0	*	0	*
Streptococcal Toxic Shock Syndrome (STSS)	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	3	0.2
Toxic Shock Syndrome (TSS)	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0
Vibriosis	1	0.1	3	0.4	2	0.3	0	0.0	6	0.4	5	0.3
Vibrio parahaemolyticus Infection	0	0.0	2	0.3	0	0.0	0	0.0	1	0.1	0	0.0
Other (Not Cholera)	1	0.1	1	0.1	2	0.3	0	0.0	5	0.3	5	0.3
Yersiniosis	20	2.9	9	1.3	2	0.3	4	0.5	3	0.2	6	0.4
SUBTOTAL	**1,225**	**177.3**	**360**	**50.8**	**221**	**30.2**	**374**	**49.5**	**1,318**	**84.9**	**1,626**	**110.1**

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY AGE IN YEARS, OHIO, 2019

	0–4		5–9		10–14		15–19		20–29		30–39	
VACCINE-PREVENTABLE	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**
Influenza-Associated Hospitalization	789	114.2	328	46.3	162	22.1	140	18.5	530	34.1	546	37.0
Influenza-Associated Pediatric Mortality*	2	*	0	*	3	*	1	*	0	*	0	*
Measles	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
Imported	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
Meningococcal Disease	3	0.4	0	0.0	1	0.1	0	0.0	2	0.1	1	0.1
Mumps	8	1.2	6	0.8	3	0.4	4	0.5	15	1.0	5	0.3
Pertussis	306	44.3	157	22.2	193	26.4	118	15.6	16	1.0	37	2.5
Streptococcus pneumoniae , Invasive Disease	61	8.8	23	3.2	8	1.1	13	1.7	38	2.4	82	5.6
Ages < 5 Years*	61	8.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Drug Resistant, Ages 5+ Years*	0	0.0	8	1.1	1	0.1	3	0.4	8	0.5	13	0.9
Drug Susceptible, Ages 5+ Years*	0	0.0	15	2.1	7	1.0	10	1.3	30	1.9	69	4.7
Varicella	126	18.2	118	16.7	57	7.8	27	3.6	41	2.6	18	1.2
SUBTOTAL	**1,295**	**187.5**	**632**	**89.2**	**427**	**58.3**	**303**	**40.1**	**643**	**41.4**	**689**	**46.6**
ZOONOSES												
Babesiosis	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
Chikungunya Virus Infection*	0	0.0	0	0.0	1	0.1	1	0.1	4	0.3	4	0.3
Dengue	0	0.0	0	0.0	0	0.0	2	0.3	2	0.1	2	0.1
Ehrlichiosis/Anaplasmosis	0	0.0	0	0.0	1	0.1	1	0.1	4	0.3	2	0.1
Anaplasma phagocytophilum *	0	0.0	0	0.0	0	0.0	1	0.1	1	0.1	0	0.0
Ehrlichia chaffeensis *	0	0.0	0	0.0	1	0.1	0	0.0	3	0.2	2	0.1
La Crosse Virus Disease*	8	1.2	7	1.0	9	1.2	1	0.1	0	0.0	0	0.0
Lyme Disease	31	4.5	65	9.2	50	6.8	24	3.2	35	2.3	45	3.0
Malaria	4	0.6	5	0.7	6	0.8	5	0.7	9	0.6	9	0.6
Q Fever	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
Acute	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
Chronic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Rabies, Animal*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Spotted Fever Rickettsiosis*	1	0.1	0	0.0	0	0.0	1	0.1	5	0.3	7	0.5
West Nile Virus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SUBTOTAL	**44**	**6.4**	**77**	**10.9**	**67**	**9.2**	**35**	**4.6**	**61**	**3.9**	**69**	**4.7**
GRAND TOTAL	**2,564**	**371.1**	**1,069**	**0.0**	**715**	**97.7**	**712**	**94.2**	**2,022**	**130.2**	**2,384**	**161.4**
POPULATION	**690,828**		**708,467**		**731,812**		**755,766**		**1,553,081**		**1,477,095**	

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY AGE IN YEARS, OHIO, 2019

GENERAL INFECTIOUS DISEASES	40−49		50−59		60 +		Unknown		TOTAL	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Amebiasis	1	0.1	2	0.1	3	0.1	0	n/a	10	0.1
Botulism	0	0.0	0	0.0	0	0.0	0	n/a	6	0.1
Infant*	0	*	0	*	0	*	0	n/a	6	*
Campylobacteriosis	276	19.9	383	24.8	801	28.2	2	n/a	2,438	20.9
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	25	1.8	71	4.6	253	8.9	0	n/a	382	3.3
Coccidioidomycosis	2	0.1	5	0.3	6	0.2	0	n/a	19	0.2
Creutzfeldt-Jakob Disease (CJD)	1	0.1	5	0.3	14	0.5	0	n/a	20	0.2
Cryptosporidiosis	64	4.6	63	4.1	115	4.0	0	n/a	684	5.9
Cyclosporiasis	29	2.1	31	2.0	42	1.5	0	n/a	146	1.2
Escherichia coli, Shiga Toxin-Producing	39	2.8	60	3.9	109	3.8	0	n/a	591	5.1
O157:H7	2	0.1	5	0.3	7	0.2	0	n/a	74	0.6
Not O157:H7	8	0.6	10	0.6	14	0.5	0	n/a	168	1.4
Unknown Serotype	29	2.1	45	2.9	88	3.1	0	n/a	349	3.0
Giardiasis	64	4.6	57	3.7	94	3.3	0	n/a	451	3.9
Haemophilus influenzae, Invasive Disease	22	1.6	48	3.1	198	7.0	0	n/a	353	3.0
Hemolytic Uremic Syndrome (HUS)	1	0.1	0	0.0	2	0.1	0	n/a	5	0.0
Hepatitis A	343	24.7	218	14.1	152	5.3	0	n/a	1,624	13.9
Legionellosis	83	6.0	174	11.3	487	17.1	0	n/a	803	6.9
Listeriosis	2	0.1	2	0.1	25	0.9	0	n/a	30	0.3
Meningitis, Aseptic	44	3.2	43	2.8	71	2.5	1	n/a	646	5.5
Meningitis, Other Bacterial*	22	1.6	19	1.2	32	1.1	0	n/a	148	1.3
Salmonella Paratyphi Infection*	0	0.0	0	0.0	0	0.0	0	n/a	3	0.0
Salmonella Typhi Infection*	0	0.0	0	0.0	0	0.0	0	n/a	6	0.1
Salmonellosis	187	13.5	231	15.0	481	16.9	1	n/a	1,600	13.7
Shigellosis	36	2.6	48	3.1	55	1.9	0	n/a	425	3.6
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	1	0.1	0	0.0	3	0.1	0	n/a	5	0.0
Streptococcal Disease, Group A, Invasive	83	6.0	111	7.2	343	12.1	1	n/a	780	6.7
Streptococcal Disease, Group B, in Newborn*	0	*	0	*	0	*	0	n/a	70	*
Streptococcal Toxic Shock Syndrome (STSS)	2	0.1	2	0.1	5	0.2	0	n/a	13	0.1
Toxic Shock Syndrome (TSS)	0	0.0	0	0.0	1	0.0	0	n/a	2	0.0
Vibriosis	9	0.6	11	0.7	23	0.8	0	n/a	60	0.5
Vibrio parahaemolyticus Infection	1	0.1	3	0.2	3	0.1	0	n/a	10	0.1
Other (Not Cholera)	8	0.6	8	0.5	20	0.7	0	n/a	50	0.4
Yersiniosis	6	0.4	12	0.8	50	1.8	0	n/a	112	1.0
SUBTOTAL	**1,342**	**96.7**	**1,596**	**103.5**	**3,365**	**118.4**	**5**	**n/a**	**11,432**	**97.8**

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY AGE IN YEARS, OHIO, 2019

VACCINE-PREVENTABLE	40−49		50−59		60 +		Unknown		TOTAL	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Influenza-Associated Hospitalization	714	51.5	1,598	103.6	6,061	213.2	18	n/a	10,886	93.1
Influenza-Associated Pediatric Mortality*	0	*	0	*	0	*	0	n/a	6	*
Measles	0	0.0	0	0.0	0	0.0	0	n/a	1	0.0
Imported	0	0.0	0	0.0	0	0.0	0	n/a	1	0.0
Meningococcal Disease	1	0.1	2	0.1	3	0.1	0	n/a	13	0.1
Mumps	6	0.4	11	0.7	11	0.4	0	n/a	69	0.6
Pertussis	44	3.2	37	2.4	48	1.7	0	n/a	956	8.2
Streptococcus pneumoniae , Invasive Disease	91	6.6	227	14.7	730	25.7	0	n/a	1,273	10.9
Ages < 5 Years*	0	0.0	0	0.0	0	0.0	0	n/a	61	8.8
Drug Resistant, Ages 5+ Years*	25	1.8	59	3.8	221	7.8	0	n/a	338	3.1
Drug Susceptible, Ages 5+ Years*	66	4.8	168	10.9	509	17.9	0	n/a	874	7.9
Varicella	12	0.9	5	0.3	9	0.3	0	n/a	413	3.5
SUBTOTAL	**868**	**62.6**	**1,880**	**121.9**	**6,862**	**241.4**	**18**	**n/a**	**13,617**	**116.5**
ZOONOSES										
Babesiosis	0	0.0	1	0.1	2	0.1	0	n/a	4	0.0
Chikungunya Virus Infection*	1	0.1	1	0.1	2	0.1	0	n/a	14	0.1
Dengue	3	0.2	1	0.1	2	0.1	0	n/a	12	0.1
Ehrlichiosis/Anaplasmosis	1	0.1	7	0.5	12	0.4	0	n/a	28	0.2
Anaplasma phagocytophilum *	0	0.0	0	0.0	3	0.1	0	n/a	5	0.0
Ehrlichia chaffeensis *	1	0.1	7	0.5	9	0.3	0	n/a	23	0.2
La Crosse Virus Disease*	0	0.0	0	0.0	1	0.0	0	n/a	26	0.2
Lyme Disease	52	3.7	51	3.3	106	3.7	1	n/a	460	3.9
Malaria	7	0.5	11	0.7	2	0.1	1	n/a	59	0.5
Q Fever	0	0.0	0	0.0	3	0.1	0	n/a	4	0.0
Acute	0	0.0	0	0.0	2	0.1	0	n/a	3	0.0
Chronic	0	0.0	0	0.0	1	0.0	0	n/a	1	0.0
Rabies, Animal*	0	n/a	0	n/a	0	n/a	42	n/a	42	n/a
Spotted Fever Rickettsiosis*	9	0.6	13	0.8	13	0.5	0	n/a	49	0.4
West Nile Virus Infection	0	0.0	1	0.1	2	0.1	0	n/a	3	0.0
SUBTOTAL	**73**	**5.3**	**86**	**5.6**	**145**	**5.1**	**44**	**n/a**	**701**	**5.6**
GRAND TOTAL	**2,283**	**164.6**	**3,562**	**231.0**	**10,372**	**364.9**	**67**	**n/a**	**25,750**	**219.9**
POPULATION	**1,387,186**		**1,542,091**		**2,842,774**		**0**		**11,689,100**	

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY SEX, OHIO, 2019

GENERAL INFECTIOUS DISEASES	Female		Male		Unknown		TOTAL	
	N	Rate	N	Rate	N	Rate	N	Rate
Amebiasis	3	0.1	7	0.1	0	n/a	10	0.1
Botulism	3	0.1	3	0.1	0	n/a	6	0.1
Infant*	3	*	3	*	0	n/a	6	*
Campylobacteriosis	1,203	20.2	1,228	21.4	7	n/a	2,438	20.9
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	215	3.6	167	2.9	0	n/a	382	3.3
Coccidioidomycosis	9	0.2	10	0.2	0	n/a	19	0.2
Creutzfeldt-Jakob Disease (CJD)	5	0.1	10	0.2	5	n/a	20	0.2
Cryptosporidiosis	349	5.9	334	5.8	1	n/a	684	5.9
Cyclosporiasis	95	1.6	51	0.9	0	n/a	146	1.2
Escherichia coli, Shiga Toxin-Producing	355	6.0	235	4.1	1	n/a	591	5.1
O157:H7	38	0.6	36	0.6	0	n/a	74	0.6
Not O157:H7	96	1.6	72	1.3	0	n/a	168	1.4
Unknown Serotype	221	3.7	127	2.2	1	n/a	349	3.0
Giardiasis	180	3.0	270	4.7	1	n/a	451	3.9
Haemophilus influenzae, Invasive Disease	201	3.4	152	2.7	0	n/a	353	3.0
Hemolytic Uremic Syndrome (HUS)	3	0.1	2	0.0	0	n/a	5	0.0
Hepatitis A	616	10.3	1,008	17.6	0	n/a	1,624	13.9
Legionellosis	327	5.5	476	8.3	0	n/a	803	6.9
Listeriosis	13	0.2	17	0.3	0	n/a	30	0.3
Meningitis, Aseptic	328	5.5	316	5.5	2	n/a	646	5.5
Meningitis, Other Bacterial*	74	1.2	72	1.3	2	n/a	148	1.3
Salmonella Paratyphi Infection*	1	0.0	2	0.0	0	n/a	3	0.0
Salmonella Typhi Infection*	4	0.1	2	0.0	0	n/a	6	0.1
Salmonellosis	921	15.5	679	11.8	0	n/a	1,600	13.7
Shigellosis	184	3.1	241	4.2	0	n/a	425	3.6
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	2	0.0	3	0.1	0	n/a	5	0.0
Streptococcal Disease, Group A, Invasive	383	6.4	393	6.9	4	n/a	780	6.7
Streptococcal Disease, Group B, in Newborn*	30	*	37	*	3	n/a	70	*
Streptococcal Toxic Shock Syndrome (STSS)	7	0.1	6	0.1	0	n/a	13	0.1
Toxic Shock Syndrome (TSS)	1	0.0	1	0.0	0	n/a	2	0.0
Vibriosis	26	0.4	34	0.6	0	n/a	60	0.5
Vibrio parahaemolyticus Infection	2	0.0	8	0.1	0	n/a	10	0.1
Other (Not Cholera)	24	0.4	26	0.5	0	n/a	50	0.4
Yersiniosis	56	0.9	56	1.0	0	n/a	112	1.0
SUBTOTAL	**5,594**	**93.9**	**5,812**	**101.4**	**26**	**n/a**	**11,432**	**97.8**

VACCINE-PREVENTABLE								
Influenza-Associated Hospitalization	6,077	102.0	4,775	83.3	34	n/a	10,886	93.1
Influenza-Associated Pediatric Mortality*	4	*	2	*	0	n/a	6	*
Measles	1	0.0	0	0.0	0	n/a	1	0.0
Imported	1	0.0	0	0.0	0	n/a	1	0.0
Meningococcal Disease	6	0.1	7	0.1	0	n/a	13	0.1
Mumps	25	0.4	44	0.8	0	n/a	69	0.6
Pertussis	583	9.8	373	6.5	0	n/a	956	8.2
Streptococcus pneumoniae, Invasive Disease	640	10.7	633	11.0	0	n/a	1,273	10.9
Ages < 5 Years*	29	*	32	*	0	n/a	61	*
Drug Resistant, Ages 5+ Years*	167	*	171	*	0	n/a	338	*
Drug Susceptible, Ages 5+ Years*	444	*	430	*	0	n/a	874	*
Varicella	188	3.2	225	3.9	0	n/a	413	3.5
SUBTOTAL	**7,524**	**126.3**	**6,059**	**105.7**	**34**	**n/a**	**13,617**	**116.5**

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY SEX, OHIO, 2019

ZOONOSES	Female		Male		Unknown		TOTAL	
	N	Rate	N	Rate	N	Rate	N	Rate
Babesiosis	3	0.1	1	0.0	0	n/a	4	0.0
Chikungunya Virus Infection*	6	0.1	8	0.1	0	n/a	14	0.1
Dengue	7	0.1	5	0.1	0	n/a	12	0.1
Ehrlichiosis/Anaplasmosis	13	0.2	15	0.3	0	n/a	28	0.2
*Anaplasma phagocytophilum**	3	0.1	2	0.0	0	n/a	5	0.0
*Ehrlichia chaffeensis**	10	0.2	13	0.2	0	n/a	23	0.2
La Crosse Virus Disease*	8	0.1	18	0.3	0	n/a	26	0.2
Lyme Disease	187	3.1	273	4.8	0	n/a	460	3.9
Malaria	17	0.3	41	0.7	1	n/a	59	0.5
Q Fever	1	0.0	3	0.1	0	n/a	4	0.0
Acute	1	0.0	2	0.0	0	n/a	3	0.0
Chronic	0	0.0	1	0.0	0	n/a	1	0.0
Rabies, Animal*	0	n/a	0	n/a	42	n/a	42	n/a
Spotted Fever Rickettsiosis*	16	0.3	33	0.6	0	n/a	49	0.4
West Nile Virus Infection	0	0.0	3	0.1	0	n/a	3	0.0
SUBTOTAL	**258**	**4.3**	**400**	**7.0**	**43**	**n/a**	**701**	**5.6**
GRAND TOTAL	**13,376**	**224.5**	**12,271**	**214.1**	**103**	**n/a**	**25,750**	**219.9**
POPULATION	**5,958,538**		**5,730,562**		**0**		**11,689,100**	

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY MONTH OF ONSET, OHIO, 2019

GENERAL INFECTIOUS DISEASES	January		February		March		April		May		June		July	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Amebiasis	0	0%	0	0%	2	20%	0	0%	1	10%	1	10%	1	10%
Botulism	1	17%	1	17%	1	17%	0	0%	1	17%	1	17%	0	0%
Infant*	1	17%	1	17%	1	17%	0	0%	1	17%	1	17%	0	0%
Campylobacteriosis	178	7%	137	6%	110	5%	141	6%	172	7%	291	12%	352	14%
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	24	6%	23	6%	31	8%	37	10%	32	8%	33	9%	40	10%
Coccidioidomycosis	0	0%	3	16%	2	11%	1	5%	0	0%	2	11%	1	5%
Creutzfeldt-Jakob Disease (CJD)	2	10%	1	5%	0	0%	2	10%	0	0%	3	15%	1	5%
Cryptosporidiosis	32	5%	44	6%	39	6%	42	6%	33	5%	53	8%	106	15%
Cyclosporiasis	0	0%	0	0%	0	0%	0	0%	6	4%	89	61%	46	32%
Escherichia coli, Shiga Toxin-Producing	29	5%	31	5%	40	7%	45	8%	36	6%	61	10%	83	14%
O157:H7	1	1%	3	4%	1	1%	4	5%	3	4%	4	5%	7	9%
Not O157:H7	5	3%	5	3%	15	9%	20	12%	10	6%	15	9%	26	15%
Unknown Serotype	23	7%	23	7%	24	7%	21	6%	23	7%	42	12%	50	14%
Giardiasis	36	8%	36	8%	39	9%	43	10%	29	6%	38	8%	47	10%
Haemophilus influenzae, Invasive Disease	31	9%	19	5%	41	12%	39	11%	35	10%	28	8%	19	5%
Hemolytic Uremic Syndrome (HUS)	0	0%	1	20%	0	0%	0	0%	1	20%	0	0%	0	0%
Hepatitis A	309	19%	249	15%	215	13%	227	14%	175	11%	121	7%	110	7%
Legionellosis	40	5%	41	5%	18	2%	23	3%	49	6%	168	21%	88	11%
Listeriosis	1	3%	0	0%	3	10%	3	10%	3	10%	3	10%	6	20%
Meningitis, Aseptic	24	4%	26	4%	29	4%	28	4%	37	6%	53	8%	116	18%
Meningitis, Other Bacterial*	7	5%	12	8%	6	4%	11	7%	12	8%	9	6%	13	9%
Salmonella Paratyphi Infection*	0	0%	0	0%	1	33%	0	0%	0	0%	0	0%	0	0%
Salmonella Typhi Infection*	1	17%	0	0%	1	17%	0	0%	1	17%	1	17%	0	0%
Salmonellosis	77	5%	55	3%	121	8%	133	8%	151	9%	184	12%	217	14%
Shigellosis	32	8%	39	9%	42	10%	32	8%	46	11%	39	9%	53	12%
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	1	20%	0	0%	0	0%	2	40%	1	20%	0	0%	0	0%
Streptococcal Disease, Group A, Invasive	77	10%	80	10%	76	10%	73	9%	67	9%	62	8%	52	7%
Streptococcal Disease, Group B, in Newborn*	3	4%	5	7%	6	9%	4	6%	10	14%	6	9%	5	7%
Streptococcal Toxic Shock Syndrome (STSS)	0	0%	3	23%	2	15%	0	0%	2	15%	1	8%	2	15%
Toxic Shock Syndrome (TSS)	0	0%	0	0%	1	50%	0	0%	0	0%	0	0%	1	50%
Vibriosis	1	2%	7	12%	4	7%	3	5%	5	8%	12	20%	5	8%
Vibrio parahaemolyticus Infection	0	0%	0	0%	0	0%	0	0%	1	10%	4	40%	0	0%
Other (Not Cholera)	1	2%	7	14%	4	8%	3	6%	4	8%	8	16%	5	10%
Yersiniosis	7	6%	4	4%	13	12%	8	7%	7	6%	13	12%	5	4%
SUBTOTAL	**913**	**8%**	**817**	**7%**	**843**	**7%**	**897**	**8%**	**912**	**8%**	**1,272**	**11%**	**1,369**	**12%**

OUTBREAKS*														
Community*	3	12%	1	4%	1	4%	2	8%	1	4%	1	4%	3	12%
Foodborne*	3	4%	6	9%	6	9%	11	16%	6	9%	4	6%	5	7%
Healthcare-Associated*	17	11%	16	11%	34	23%	22	15%	2	1%	4	3%	4	3%
Institutional*	16	9%	13	7%	18	10%	12	6%	18	10%	11	6%	5	3%
Waterborne*	0	0%	1	11%	0	0%	0	0%	0	0%	3	33%	2	22%
Zoonotic*	0	0%	1	6%	0	0%	3	18%	4	24%	2	12%	3	18%
SUBTOTAL	**39**	**9%**	**38**	**8%**	**59**	**13%**	**50**	**11%**	**31**	**7%**	**25**	**6%**	**22**	**5%**

N = number of cases reported.
% = percentage of cases occurring in the month for the disease.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY MONTH OF ONSET, OHIO, 2019

VACCINE-PREVENTABLE	January		February		March		April		May		June		July	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Influenza-Associated Hospitalization	1,404	13%	2,563	24%	4,076	37%	739	7%	57	1%	22	0%	23	0%
Influenza-Associated Pediatric Mortality*	1	17%	3	50%	0	0%	0	0%	0	0%	0	0%	0	0%
Measles	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	100%
Imported	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	100%
Meningococcal Disease	0	0%	2	15%	2	15%	1	8%	0	0%	0	0%	2	15%
Mumps	14	20%	8	12%	4	6%	6	9%	7	10%	4	6%	9	13%
Pertussis	110	12%	32	3%	42	4%	41	4%	86	9%	62	6%	75	8%
Streptococcus pneumoniae , Invasive Disease	136	11%	112	9%	201	16%	131	10%	106	8%	58	5%	51	4%
Ages < 5 Years*	4	7%	3	5%	8	13%	5	8%	4	7%	4	7%	2	3%
Drug Resistant, Ages 5+ Years*	37	11%	24	7%	56	17%	38	11%	32	9%	14	4%	10	3%
Drug Susceptible, Ages 5+ Years*	95	11%	85	10%	137	16%	88	10%	70	8%	40	5%	39	4%
Varicella	29	7%	36	9%	33	8%	56	14%	42	10%	28	7%	22	5%
SUBTOTAL	**1,694**	**12%**	**2,756**	**20%**	**4,358**	**32%**	**974**	**7%**	**298**	**2%**	**174**	**1%**	**183**	**1%**

ZOONOSES														
Babesiosis	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	3	75%
Chikungunya Virus Infection*	0	0%	1	7%	2	14%	1	7%	0	0%	2	14%	0	0%
Dengue	2	17%	0	0%	0	0%	0	0%	1	8%	0	0%	1	8%
Ehrlichiosis/Anaplasmosis	0	0%	0	0%	0	0%	2	7%	3	11%	8	29%	7	25%
Anaplasma phagocytophilum *	0	0%	0	0%	0	0%	0	0%	0	0%	3	60%	1	20%
Ehrlichia chaffeensis *	0	0%	0	0%	0	0%	2	9%	3	13%	5	22%	6	26%
La Crosse Virus Disease*	0	0%	0	0%	0	0%	0	0%	0	0%	1	4%	8	31%
Lyme Disease	9	2%	11	2%	3	1%	22	5%	63	14%	114	25%	95	21%
Malaria	3	5%	6	10%	4	7%	4	7%	4	7%	5	8%	5	8%
Q Fever	1	25%	0	0%	0	0%	0	0%	2	50%	0	0%	0	0%
Acute	1	33%	0	0%	0	0%	0	0%	1	33%	0	0%	0	0%
Chronic	0	0%	0	0%	0	0%	0	0%	1	100%	0	0%	0	0%
Rabies, Animal*	2	5%	0	0%	0	0%	2	5%	6	14%	7	17%	7	17%
Spotted Fever Rickettsiosis*	0	0%	2	4%	0	0%	2	4%	3	6%	14	29%	13	27%
West Nile Virus Infection	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
SUBTOTAL	**17**	**2%**	**20**	**3%**	**9**	**1%**	**33**	**5%**	**82**	**12%**	**151**	**22%**	**139**	**20%**

N = number of cases reported.
% = percentage of cases occurring in the month for the disease.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY MONTH OF ONSET, OHIO, 2019

GENERAL INFECTIOUS DISEASES	August		September		October		November		December		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
Amebiasis	1	10%	1	10%	0	0%	2	20%	1	10%	10	100%
Botulism	0	0%	1	17%	0	0%	0	0%	0	0%	6	100%
Infant*	0	0%	1	17%	0	0%	0	0%	0	0%	6	100%
Campylobacteriosis	299	12%	243	10%	183	8%	183	8%	149	6%	2,438	100%
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	27	7%	36	9%	34	9%	36	9%	29	8%	382	100%
Coccidioidomycosis	3	16%	2	11%	1	5%	2	11%	2	11%	19	100%
Creutzfeldt-Jakob Disease (CJD)	2	10%	3	15%	1	5%	2	10%	3	15%	20	100%
Cryptosporidiosis	119	17%	67	10%	69	10%	42	6%	38	6%	684	100%
Cyclosporiasis	2	1%	0	0%	1	1%	2	1%	0	0%	146	100%
Escherichia coli, Shiga Toxin-Producing	104	18%	50	8%	45	8%	45	8%	22	4%	591	100%
O157:H7	16	22%	12	16%	8	11%	12	16%	3	4%	74	100%
Not O157:H7	37	22%	16	10%	9	5%	6	4%	4	2%	168	100%
Unknown Serotype	51	15%	22	6%	28	8%	27	8%	15	4%	349	100%
Giardiasis	46	10%	48	11%	40	9%	25	6%	24	5%	451	100%
Haemophilus influenzae, Invasive Disease	26	7%	17	5%	31	9%	33	9%	34	10%	353	100%
Hemolytic Uremic Syndrome (HUS)	1	20%	0	0%	1	20%	1	20%	0	0%	5	100%
Hepatitis A	80	5%	41	3%	35	2%	29	2%	33	2%	1,624	100%
Legionellosis	89	11%	80	10%	79	10%	71	9%	57	7%	803	100%
Listeriosis	3	10%	2	7%	1	3%	3	10%	2	7%	30	100%
Meningitis, Aseptic	88	14%	94	15%	70	11%	44	7%	37	6%	646	100%
Meningitis, Other Bacterial*	13	9%	24	16%	16	11%	14	9%	11	7%	148	100%
Salmonella Paratyphi Infection*	0	0%	1	33%	1	33%	0	0%	0	0%	3	100%
Salmonella Typhi Infection*	2	33%	0	0%	0	0%	0	0%	0	0%	6	100%
Salmonellosis	181	11%	159	10%	143	9%	89	6%	90	6%	1,600	100%
Shigellosis	46	11%	28	7%	27	6%	14	3%	27	6%	425	100%
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	0	0%	0	0%	0	0%	0	0%	1	20%	5	100%
Streptococcal Disease, Group A, Invasive	38	5%	53	7%	48	6%	62	8%	92	12%	780	100%
Streptococcal Disease, Group B, in Newborn*	6	9%	9	13%	7	10%	6	9%	3	4%	70	100%
Streptococcal Toxic Shock Syndrome (STSS)	0	0%	0	0%	0	0%	2	15%	1	8%	13	100%
Toxic Shock Syndrome (TSS)	0	0%	0	0%	0	0%	0	0%	0	0%	2	100%
Vibriosis	10	17%	5	8%	4	7%	0	0%	4	7%	60	100%
Vibrio parahaemolyticus Infection	3	30%	1	10%	0	0%	0	0%	1	10%	10	100%
Other (Not Cholera)	7	14%	4	8%	4	8%	0	0%	3	6%	50	100%
Yersiniosis	12	11%	11	10%	17	15%	7	6%	8	7%	112	100%
SUBTOTAL	**1,198**	**10%**	**975**	**9%**	**854**	**7%**	**714**	**6%**	**668**	**6%**	**11,432**	**100%**

OUTBREAKS*												
Community*	3	12%	3	12%	4	16%	2	8%	1	4%	25	100%
Foodborne*	3	4%	6	9%	8	12%	3	4%	7	10%	68	100%
Healthcare-Associated*	3	2%	5	3%	5	3%	9	6%	27	18%	148	100%
Institutional*	7	4%	16	9%	23	12%	25	13%	23	12%	187	100%
Waterborne*	2	22%	1	11%	0	0%	0	0%	0	0%	9	100%
Zoonotic*	1	6%	1	6%	1	6%	0	0%	1	6%	17	100%
SUBTOTAL	**19**	**4%**	**32**	**7%**	**41**	**9%**	**39**	**9%**	**59**	**13%**	**454**	**100%**

N = number of cases reported.
% = percentage of cases occurring in the month for the disease.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY MONTH OF ONSET, OHIO, 2019

VACCINE-PREVENTABLE	August		September		October		November		December		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
Influenza-Associated Hospitalization	13	0%	28	0%	70	1%	176	2%	1,715	16%	10,886	100%
Influenza-Associated Pediatric Mortality*	0	0%	0	0%	0	0%	0	0%	2	33%	6	100%
Measles	0	0%	0	0%	0	0%	0	0%	0	0%	1	100%
Imported	0	0%	0	0%	0	0%	0	0%	0	0%	1	100%
Meningococcal Disease	1	8%	0	0%	3	23%	1	8%	1	8%	13	100%
Mumps	3	4%	5	7%	2	3%	3	4%	4	6%	69	100%
Pertussis	72	8%	68	7%	116	12%	131	14%	121	13%	956	100%
Streptococcus pneumoniae , Invasive Disease	32	3%	71	6%	71	6%	119	9%	185	15%	1,273	100%
Ages < 5 Years*	1	2%	8	13%	3	5%	7	11%	12	20%	61	100%
Drug Resistant, Ages 5+ Years*	11	3%	12	4%	18	5%	38	11%	48	14%	338	100%
Drug Susceptible, Ages 5+ Years*	20	2%	51	6%	50	6%	74	8%	125	14%	874	100%
Varicella	37	9%	37	9%	28	7%	30	7%	35	8%	413	100%
SUBTOTAL	**158**	**1%**	**209**	**2%**	**290**	**2%**	**460**	**3%**	**2,063**	**15%**	**13,617**	**100%**

ZOONOSES												
Babesiosis	1	25%	0	0%	0	0%	0	0%	0	0%	4	100%
Chikungunya Virus Infection*	1	7%	3	21%	1	7%	2	14%	1	7%	14	100%
Dengue	3	25%	0	0%	4	33%	1	8%	0	0%	12	100%
Ehrlichiosis/Anaplasmosis	2	7%	0	0%	2	7%	2	7%	2	7%	28	100%
Anaplasma phagocytophilum *	1	20%	0	0%	0	0%	0	0%	0	0%	5	100%
Ehrlichia chaffeensis *	1	4%	0	0%	2	9%	2	9%	2	9%	23	100%
La Crosse Virus Disease*	9	35%	4	15%	4	15%	0	0%	0	0%	26	100%
Lyme Disease	39	8%	46	10%	24	5%	22	5%	12	3%	460	100%
Malaria	13	22%	4	7%	3	5%	5	8%	3	5%	59	100%
Q Fever	0	0%	1	25%	0	0%	0	0%	0	0%	4	100%
Acute	0	0%	1	33%	0	0%	0	0%	0	0%	3	100%
Chronic	0	0%	0	0%	0	0%	0	0%	0	0%	1	100%
Rabies, Animal*	6	14%	7	17%	3	7%	1	2%	1	2%	42	100%
Spotted Fever Rickettsiosis*	11	22%	2	4%	1	2%	1	2%	0	0%	49	100%
West Nile Virus Infection	0	0%	3	100%	0	0%	0	0%	0	0%	3	100%
SUBTOTAL	**85**	**12%**	**70**	**10%**	**42**	**6%**	**34**	**5%**	**19**	**3%**	**701**	**100%**

GRAND TOTAL	**1,460**	**6%**	**1,286**	**5%**	**1,227**	**5%**	**1,247**	**5%**	**2,809**	**11%**	**26,204**	**100%**

N = number of cases reported.
% = percentage of cases occurring in the month for the disease.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

GENERAL INFECTIOUS DISEASES	Adams		Allen		Ashland		Ashtabula		Athens		Auglaize		Belmont	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Amebiasis	0	0.0	1	1.0	0	0.0	0	0.0	0	0.0	1	2.2	0	0.0
Botulism	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Infant*	0	*	0	*	0	*	0	*	0	*	0	*	0	*
Campylobacteriosis	10	36.1	29	28.3	20	37.4	9	9.3	22	33.7	14	30.7	8	11.9
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	0	0.0	5	4.9	1	1.9	8	8.2	0	0.0	1	2.2	3	4.5
Coccidioidomycosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Creutzfeldt-Jakob Disease (CJD)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Cryptosporidiosis	2	7.2	9	8.8	8	15.0	6	6.2	11	16.8	10	21.9	1	1.5
Cyclosporiasis	0	0.0	4	3.9	2	3.7	0	0.0	1	1.5	5	11.0	0	0.0
Escherichia coli, Shiga Toxin-Producing	3	10.8	4	3.9	5	9.3	7	7.2	6	9.2	4	8.8	1	1.5
O157:H7	0	0.0	0	0.0	0	0.0	5	5.1	0	0.0	1	2.2	0	0.0
Not O157:H7	1	3.6	3	2.9	2	3.7	1	1.0	1	1.5	0	0.0	0	0.0
Unknown Serotype	2	7.2	1	1.0	3	5.6	1	1.0	5	7.7	3	6.6	1	1.5
Giardiasis	0	0.0	9	8.8	7	13.1	0	0.0	9	13.8	3	6.6	1	1.5
Haemophilus influenzae, Invasive Disease	1	3.6	2	2.0	3	5.6	3	3.1	3	4.6	1	2.2	1	1.5
Hemolytic Uremic Syndrome (HUS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hepatitis A	19	68.6	4	3.9	3	5.6	0	0.0	37	56.6	6	13.1	7	10.4
Legionellosis	1	3.6	2	2.0	2	3.7	5	5.1	1	1.5	1	2.2	3	4.5
Listeriosis	1	3.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Meningitis, Aseptic	2	7.2	21	20.5	5	9.3	1	1.0	0	0.0	4	8.8	1	1.5
Meningitis, Other Bacterial*	0	0.0	3	2.9	0	0.0	2	2.1	0	0.0	0	0.0	0	0.0
Salmonella Paratyphi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonella Typhi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	1	1.5	0	0.0	0	0.0
Salmonellosis	7	25.3	23	22.5	6	11.2	12	12.3	13	19.9	11	24.1	5	7.5
Shigellosis	0	0.0	2	2.0	0	0.0	0	0.0	0	0.0	1	2.2	1	1.5
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Streptococcal Disease, Group A, Invasive	0	0.0	2	2.0	3	5.6	3	3.1	5	7.7	1	2.2	8	11.9
Streptococcal Disease, Group B, in Newborn*	1	*	1	*	0	*	1	*	0	*	0	*	0	*
Streptococcal Toxic Shock Syndrome (STSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Toxic Shock Syndrome (TSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Vibriosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	2.2	1	1.5
Vibrio parahaemolyticus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	2.2	0	0.0
Other (Not Cholera)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	1.5
Yersiniosis	1	3.6	0	0.0	1	1.9	2	2.1	1	1.5	0	0.0	0	0.0
SUBTOTAL	**48**	**173.3**	**121**	**118.2**	**66**	**123.4**	**59**	**60.7**	**110**	**168.4**	**64**	**140.2**	**41**	**61.2**

OUTBREAKS*														
Community*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Foodborne*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	1	n/a	0	n/a
Healthcare-Associated*	0	n/a	2	n/a	2	n/a	0	n/a	0	n/a	3	n/a	1	n/a
Institutional*	0	n/a	2	n/a	0	n/a	0	n/a	1	n/a	2	n/a	0	n/a
Waterborne*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Zoonotic*	0	n/a	1	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
SUBTOTAL	**0**	**n/a**	**5**	**n/a**	**2**	**n/a**	**0**	**n/a**	**1**	**n/a**	**6**	**n/a**	**1**	**n/a**

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

	Adams		Allen		Ashland		Ashtabula		Athens		Auglaize		Belmont	
VACCINE-PREVENTABLE	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**
Influenza-Associated Hospitalization	16	57.8	155	151.4	27	50.5	74	76.1	25	38.3	53	116.1	29	43.3
Influenza-Associated Pediatric Mortality*	0	*	0	*	0	*	0	*	0	*	0	*	0	*
Measles	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Imported	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Meningococcal Disease	0	0.0	1	1.0	0	0.0	0	0.0	2	3.1	0	0.0	0	0.0
Mumps	0	0.0	0	0.0	1	1.9	1	1.0	0	0.0	0	0.0	0	0.0
Pertussis	3	10.8	4	3.9	8	15.0	3	3.1	1	1.5	1	2.2	1	1.5
Streptococcus pneumoniae , Invasive Disease	0	0.0	8	7.8	6	11.2	7	7.2	17	26.0	3	6.6	16	23.9
Ages < 5 Years*	0	*	2	*	0	*	0	*	0	*	0	*	2	*
Drug Resistant, Ages 5+ Years*	0	*	2	*	1	*	1	*	5	*	0	*	7	*
Drug Susceptible, Ages 5+ Years*	0	*	4	*	5	*	6	*	12	*	3	*	7	*
Varicella	0	0.0	4	3.9	2	3.7	10	10.3	11	16.8	5	11.0	1	1.5
SUBTOTAL	**19**	**68.6**	**172**	**168.0**	**44**	**82.3**	**95**	**97.7**	**56**	**85.7**	**62**	**135.8**	**47**	**70.1**
ZOONOSES														
Babesiosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chikungunya Virus Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Dengue	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ehrlichiosis/Anaplasmosis	2	7.2	0	0.0	0	0.0	1	1.0	1	1.5	0	0.0	0	0.0
Anaplasma phagocytophilum *	0	0.0	0	0.0	0	0.0	0	0.0	1	1.5	0	0.0	0	0.0
Ehrlichia chaffeensis *	2	7.2	0	0.0	0	0.0	1	1.0	0	0.0	0	0.0	0	0.0
La Crosse Virus Disease*	1	3.6	0	0.0	3	5.6	1	1.0	0	0.0	0	0.0	0	0.0
Lyme Disease	3	10.8	1	1.0	3	5.6	1	1.0	2	3.1	0	0.0	28	41.8
Malaria	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Q Fever	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Acute	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chronic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Rabies, Animal*	0	n/a	0	n/a	0	n/a	1	n/a	2	n/a	0	n/a	0	n/a
Spotted Fever Rickettsiosis*	2	7.2	0	0.0	1	1.9	0	0.0	0	0.0	0	0.0	0	0.0
West Nile Virus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SUBTOTAL	**8**	**28.9**	**1**	**1.0**	**7**	**13.1**	**4**	**3.1**	**5**	**4.6**	**0**	**0.0**	**28**	**41.8**
GRAND TOTAL	**75**	**270.8**	**299**	**287.2**	**119**	**218.8**	**158**	**161.5**	**172**	**258.7**	**132**	**276.0**	**117**	**173.1**
POPULATION	**27,698**		**102,351**		**53,484**		**97,241**		**65,327**		**45,656**		**67,006**	

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

GENERAL INFECTIOUS DISEASES	Brown		Butler		Carroll		Champaign		Clark		Clermont		Clinton	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Amebiasis	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Botulism	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Infant*	0	*	0	*	0	*	0	*	0	*	0	*	0	*
Campylobacteriosis	9	20.7	43	11.2	11	40.9	4	10.3	33	24.6	22	10.7	21	50.0
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	0	0.0	4	1.0	1	3.7	0	0.0	5	3.7	3	1.5	0	0.0
Coccidioidomycosis	0	0.0	0	0.0	0	0.0	0	0.0	1	0.7	0	0.0	0	0.0
Creutzfeldt-Jakob Disease (CJD)	0	0.0	1	0.3	0	0.0	0	0.0	1	0.7	0	0.0	0	0.0
Cryptosporidiosis	3	6.9	4	1.0	5	18.6	2	5.1	4	3.0	3	1.5	0	0.0
Cyclosporiasis	0	0.0	3	0.8	0	0.0	0	0.0	1	0.7	1	0.5	0	0.0
Escherichia coli, Shiga Toxin-Producing	4	9.2	13	3.4	4	14.9	1	2.6	7	5.2	14	6.8	1	2.4
O157:H7	0	0.0	2	0.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not O157:H7	1	2.3	5	1.3	0	0.0	0	0.0	1	0.7	4	1.9	0	0.0
Unknown Serotype	3	6.9	6	1.6	4	14.9	1	2.6	6	4.5	10	4.8	1	2.4
Giardiasis	0	0.0	10	2.6	1	3.7	0	0.0	7	5.2	3	1.5	2	4.8
Haemophilus influenzae, Invasive Disease	2	4.6	10	2.6	0	0.0	1	2.6	2	1.5	4	1.9	1	2.4
Hemolytic Uremic Syndrome (HUS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hepatitis A	4	9.2	99	25.8	0	0.0	5	12.9	47	35.1	59	28.6	5	11.9
Legionellosis	1	2.3	17	4.4	2	7.4	3	7.7	21	15.7	5	2.4	1	2.4
Listeriosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Meningitis, Aseptic	1	2.3	25	6.5	0	0.0	4	10.3	5	3.7	16	7.8	0	0.0
Meningitis, Other Bacterial*	2	4.6	5	1.3	0	0.0	0	0.0	2	1.5	4	1.9	2	4.8
Salmonella Paratyphi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonella Typhi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonellosis	5	11.5	32	8.4	2	7.4	5	12.9	15	11.2	32	15.5	8	19.1
Shigellosis	0	0.0	7	1.8	0	0.0	1	2.6	1	0.7	9	4.4	0	0.0
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	0	0.0	0	0.0	0	0.0	0	0.0	1	0.7	0	0.0	0	0.0
Streptococcal Disease, Group A, Invasive	1	2.3	25	6.5	0	0.0	0	0.0	8	6.0	15	7.3	4	9.5
Streptococcal Disease, Group B, in Newborn*	0	*	0	*	0	*	0	*	2	*	0	*	0	*
Streptococcal Toxic Shock Syndrome (STSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Toxic Shock Syndrome (TSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Vibriosis	1	2.3	1	0.3	0	0.0	0	0.0	3	2.2	0	0.0	0	0.0
Vibrio parahaemolyticus Infection	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other (Not Cholera)	1	2.3	0	0.0	0	0.0	0	0.0	3	2.2	0	0.0	0	0.0
Yersiniosis	0	0.0	1	0.3	1	3.7	1	2.6	2	1.5	2	1.0	0	0.0
SUBTOTAL	**33**	**76.0**	**301**	**78.6**	**27**	**100.3**	**27**	**69.4**	**168**	**125.3**	**192**	**93.0**	**45**	**107.2**

OUTBREAKS*														
Community*	0	n/a	0	n/a	0	n/a	0	n/a	2	n/a	0	n/a	0	n/a
Foodborne*	0	n/a	2	n/a	0	n/a	1	n/a	3	n/a	0	n/a	0	n/a
Healthcare-Associated*	0	n/a	12	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Institutional*	0	n/a	6	n/a	0	n/a	0	n/a	7	n/a	3	n/a	0	n/a
Waterborne*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Zoonotic*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
SUBTOTAL	**0**	**n/a**	**20**	**n/a**	**0**	**n/a**	**1**	**n/a**	**12**	**n/a**	**3**	**n/a**	**0**	**n/a**

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

	Brown		Butler		Carroll		Champaign		Clark		Clermont		Clinton	
VACCINE-PREVENTABLE	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**
Influenza-Associated Hospitalization	4	9.2	348	90.8	26	96.6	19	48.9	227	169.3	159	77.0	18	42.9
Influenza-Associated Pediatric Mortality*	0	*	0	*	0	*	0	*	0	*	0	*	0	*
Measles	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Imported	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Meningococcal Disease	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mumps	0	0.0	1	0.3	0	0.0	0	0.0	3	2.2	1	0.5	1	2.4
Pertussis	0	0.0	45	11.7	1	3.7	1	2.6	11	8.2	36	17.4	2	4.8
Streptococcus pneumoniae , Invasive Disease	4	9.2	58	15.1	2	7.4	3	7.7	26	19.4	16	7.8	6	14.3
Ages < 5 Years*	0	*	5	*	0	*	1	*	2	*	0	*	0	*
Drug Resistant, Ages 5+ Years*	1	*	17	*	0	*	0	*	6	*	5	*	3	*
Drug Susceptible, Ages 5+ Years*	3	*	36	*	2	*	2	*	18	*	11	*	3	*
Varicella	0	0.0	14	3.7	2	7.4	5	12.9	2	1.5	2	1.0	3	7.1
SUBTOTAL	**8**	**18.4**	**466**	**121.6**	**31**	**115.2**	**28**	**72.0**	**269**	**200.6**	**214**	**103.7**	**30**	**71.5**
ZOONOSES														
Babesiosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chikungunya Virus Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Dengue	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ehrlichiosis/Anaplasmosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4	1.9	0	0.0
Anaplasma phagocytophilum *	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.5	0	0.0
Ehrlichia chaffeensis *	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	1.5	0	0.0
La Crosse Virus Disease*	0	0.0	0	0.0	0	0.0	1	2.6	0	0.0	0	0.0	0	0.0
Lyme Disease	1	2.3	3	0.8	15	55.7	0	0.0	0	0.0	5	2.4	0	0.0
Malaria	0	0.0	2	0.5	0	0.0	0	0.0	0	0.0	1	0.5	0	0.0
Q Fever	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Acute	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chronic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Rabies, Animal*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Spotted Fever Rickettsiosis*	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	2	1.0	0	0.0
West Nile Virus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SUBTOTAL	**1**	**2.3**	**7**	**1.8**	**15**	**55.7**	**1**	**2.6**	**0**	**0.0**	**12**	**5.8**	**0**	**0.0**
GRAND TOTAL	**42**	**96.7**	**794**	**202.0**	**73**	**271.2**	**57**	**144.0**	**449**	**325.9**	**421**	**202.5**	**75**	**178.7**
POPULATION	**43,432**		**383,134**		**26,914**		**38,885**		**134,083**		**206,428**		**41,968**	

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

GENERAL INFECTIOUS DISEASES	Columbiana		Coshocton		Crawford		Cuyahoga		Darke		Defiance		Delaware	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Amebiasis	0	0.0	0	0.0	0	0.0	2	0.2	0	0.0	0	0.0	0	0.0
Botulism	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0
Infant*	0	*	0	*	0	*	1	*	0	*	0	*	0	*
Campylobacteriosis	11	10.8	10	27.3	5	12.0	266	21.5	29	56.7	10	26.3	36	17.2
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	8	7.9	0	0.0	1	2.4	91	7.4	3	5.9	0	0.0	1	0.5
Coccidioidomycosis	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	1	0.5
Creutzfeldt-Jakob Disease (CJD)	0	0.0	0	0.0	0	0.0	5	0.4	0	0.0	0	0.0	0	0.0
Cryptosporidiosis	10	9.8	3	8.2	3	7.2	40	3.2	7	13.7	3	7.9	14	6.7
Cyclosporiasis	0	0.0	0	0.0	1	2.4	0	0.0	0	0.0	0	0.0	20	9.6
Escherichia coli, Shiga Toxin-Producing	3	2.9	0	0.0	2	4.8	48	3.9	2	3.9	1	2.6	17	8.1
O157:H7	2	2.0	0	0.0	0	0.0	5	0.4	0	0.0	0	0.0	3	1.4
Not O157:H7	1	1.0	0	0.0	0	0.0	11	0.9	1	2.0	0	0.0	4	1.9
Unknown Serotype	0	0.0	0	0.0	2	4.8	32	2.6	1	2.0	1	2.6	10	4.8
Giardiasis	2	2.0	3	8.2	1	2.4	47	3.8	0	0.0	2	5.3	9	4.3
Haemophilus influenzae, Invasive Disease	2	2.0	1	2.7	0	0.0	36	2.9	0	0.0	0	0.0	2	1.0
Hemolytic Uremic Syndrome (HUS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hepatitis A	1	1.0	4	10.9	0	0.0	82	6.6	10	19.6	0	0.0	11	5.3
Legionellosis	3	2.9	1	2.7	3	7.2	177	14.3	4	7.8	2	5.3	13	6.2
Listeriosis	0	0.0	0	0.0	1	2.4	2	0.2	1	2.0	0	0.0	0	0.0
Meningitis, Aseptic	7	6.9	5	13.7	2	4.8	57	4.6	3	5.9	2	5.3	7	3.3
Meningitis, Other Bacterial*	1	1.0	0	0.0	0	0.0	11	0.9	0	0.0	0	0.0	0	0.0
Salmonella Paratyphi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonella Typhi Infection*	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	1	0.5
Salmonellosis	9	8.8	8	21.9	6	14.5	127	10.3	10	19.6	7	18.4	30	14.3
Shigellosis	0	0.0	0	0.0	2	4.8	71	5.7	1	2.0	1	2.6	7	3.3
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Streptococcal Disease, Group A, Invasive	3	2.9	0	0.0	2	4.8	88	7.1	1	2.0	1	2.6	10	4.8
Streptococcal Disease, Group B, in Newborn*	0	*	0	*	0	*	11	*	0	*	0	*	1	*
Streptococcal Toxic Shock Syndrome (STSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Toxic Shock Syndrome (TSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Vibriosis	0	0.0	0	0.0	0	0.0	3	0.2	0	0.0	0	0.0	1	0.5
Vibrio parahaemolyticus Infection	0	0.0	0	0.0	0	0.0	2	0.2	0	0.0	0	0.0	1	0.5
Other (Not Cholera)	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0
Yersiniosis	3	2.9	1	2.7	1	2.4	4	0.3	0	0.0	0	0.0	2	1.0
SUBTOTAL	**63**	**61.8**	**36**	**98.4**	**30**	**72.3**	**1,171**	**94.8**	**71**	**138.9**	**29**	**76.1**	**183**	**87.5**

OUTBREAKS*														
Community*	0	n/a	0	n/a	0	n/a	3	n/a	0	n/a	0	n/a	0	n/a
Foodborne*	0	n/a	0	n/a	0	n/a	1	n/a	0	n/a	0	n/a	6	n/a
Healthcare-Associated*	0	n/a	2	n/a	0	n/a	13	n/a	0	n/a	2	n/a	1	n/a
Institutional*	0	n/a	0	n/a	3	n/a	13	n/a	2	n/a	0	n/a	9	n/a
Waterborne*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	2	n/a
Zoonotic*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
SUBTOTAL	**0**	**n/a**	**2**	**n/a**	**3**	**n/a**	**30**	**n/a**	**2**	**n/a**	**2**	**n/a**	**18**	**n/a**

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

	Columbiana		Coshocton		Crawford		Cuyahoga		Darke		Defiance		Delaware	
VACCINE-PREVENTABLE	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**
Influenza-Associated Hospitalization	139	136.4	27	73.8	41	98.8	1,461	118.3	63	123.3	30	78.8	76	36.3
Influenza-Associated Pediatric Mortality*	0	*	0	*	0	*	2	*	0	*	0	*	0	*
Measles	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Imported	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Meningococcal Disease	1	1.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0
Mumps	1	1.0	0	0.0	0	0.0	5	0.4	0	0.0	0	0.0	0	0.0
Pertussis	3	2.9	10	27.3	2	4.8	30	2.4	9	17.6	0	0.0	65	31.1
Streptococcus pneumoniae , Invasive Disease	8	7.9	5	13.7	3	7.2	119	9.6	2	3.9	9	23.6	10	4.8
Ages < 5 Years*	1	*	1	*	0	*	6	*	0	*	0	*	2	*
Drug Resistant, Ages 5+ Years*	3	*	2	*	1	*	52	*	1	*	5	*	2	*
Drug Susceptible, Ages 5+ Years*	4	*	2	*	2	*	61	*	1	*	4	*	6	*
Varicella	4	3.9	9	24.6	2	4.8	31	2.5	2	3.9	3	7.9	4	1.9
SUBTOTAL	**156**	**153.1**	**51**	**139.3**	**48**	**115.7**	**1,649**	**133.5**	**76**	**148.7**	**42**	**110.3**	**155**	**74.1**
ZOONOSES														
Babesiosis	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	1	0.5
Chikungunya Virus Infection*	0	0.0	0	0.0	0	0.0	2	0.2	0	0.0	0	0.0	0	0.0
Dengue	0	0.0	0	0.0	0	0.0	3	0.2	0	0.0	0	0.0	0	0.0
Ehrlichiosis/Anaplasmosis	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0
Anaplasma phagocytophilum *	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ehrlichia chaffeensis *	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0
La Crosse Virus Disease*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Lyme Disease	12	11.8	17	46.4	0	0.0	12	1.0	0	0.0	1	2.6	5	2.4
Malaria	0	0.0	0	0.0	0	0.0	12	1.0	0	0.0	0	0.0	0	0.0
Q Fever	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Acute	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chronic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Rabies, Animal*	0	n/a	0	n/a	0	n/a	3	n/a	0	n/a	1	n/a	1	n/a
Spotted Fever Rickettsiosis*	0	0.0	0	0.0	0	0.0	3	0.2	0	0.0	0	0.0	0	0.0
West Nile Virus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SUBTOTAL	**12**	**11.8**	**17**	**46.4**	**0**	**0.0**	**37**	**2.8**	**0**	**0.0**	**2**	**2.6**	**7**	**2.9**
GRAND TOTAL	**231**	**226.7**	**106**	**284.2**	**81**	**188.0**	**2,887**	**231.1**	**149**	**287.6**	**75**	**189.0**	**363**	**164.5**
POPULATION	**101,883**		**36,600**		**41,494**		**1,235,072**		**51,113**		**38,087**		**209,177**	

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

GENERAL INFECTIOUS DISEASES	Erie		Fairfield		Fayette		Franklin		Fulton		Gallia		Geauga	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Amebiasis	0	0.0	0	0.0	0	0.0	2	0.2	0	0.0	0	0.0	0	0.0
Botulism	0	0.0	0	0.0	0	0.0	2	0.2	0	0.0	0	0.0	0	0.0
Infant*	0	*	0	*	0	*	2	*	0	*	0	*	0	*
Campylobacteriosis	11	14.8	20	12.7	3	10.5	218	16.6	16	38.0	15	50.2	18	19.2
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	3	4.0	5	3.2	0	0.0	36	2.7	1	2.4	1	3.3	2	2.1
Coccidioidomycosis	1	1.3	0	0.0	1	3.5	4	0.3	0	0.0	0	0.0	0	0.0
Creutzfeldt-Jakob Disease (CJD)	0	0.0	0	0.0	0	0.0	2	0.2	0	0.0	0	0.0	0	0.0
Cryptosporidiosis	2	2.7	1	0.6	0	0.0	120	9.1	5	11.9	1	3.3	1	1.1
Cyclosporiasis	0	0.0	1	0.6	0	0.0	34	2.6	0	0.0	0	0.0	0	0.0
Escherichia coli, Shiga Toxin-Producing	3	4.0	11	7.0	0	0.0	100	7.6	0	0.0	3	10.0	3	3.2
O157:H7	0	0.0	1	0.6	0	0.0	17	1.3	0	0.0	0	0.0	0	0.0
Not O157:H7	2	2.7	3	1.9	0	0.0	28	2.1	0	0.0	1	3.3	2	2.1
Unknown Serotype	1	1.3	7	4.4	0	0.0	55	4.2	0	0.0	2	6.7	1	1.1
Giardiasis	7	9.4	6	3.8	1	3.5	92	7.0	0	0.0	5	16.7	6	6.4
Haemophilus influenzae, Invasive Disease	5	6.7	5	3.2	0	0.0	43	3.3	0	0.0	3	10.0	2	2.1
Hemolytic Uremic Syndrome (HUS)	0	0.0	0	0.0	0	0.0	2	0.2	0	0.0	0	0.0	0	0.0
Hepatitis A	1	1.3	32	20.3	12	42.1	277	21.0	0	0.0	8	26.8	2	2.1
Legionellosis	3	4.0	15	9.5	1	3.5	133	10.1	0	0.0	3	10.0	0	0.0
Listeriosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	1.1
Meningitis, Aseptic	3	4.0	12	7.6	1	3.5	110	8.4	1	2.4	1	3.3	0	0.0
Meningitis, Other Bacterial*	1	1.3	1	0.6	0	0.0	26	2.0	0	0.0	0	0.0	0	0.0
Salmonella Paratyphi Infection*	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0
Salmonella Typhi Infection*	0	0.0	0	0.0	0	0.0	2	0.2	0	0.0	0	0.0	0	0.0
Salmonellosis	10	13.5	19	12.1	3	10.5	188	14.3	20	47.5	8	26.8	11	11.7
Shigellosis	1	1.3	1	0.6	1	3.5	96	7.3	0	0.0	1	3.3	2	2.1
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Streptococcal Disease, Group A, Invasive	1	1.3	15	9.5	0	0.0	127	9.6	4	9.5	1	3.3	4	4.3
Streptococcal Disease, Group B, in Newborn*	1	*	2	*	0	*	15	*	1	*	0	*	0	*
Streptococcal Toxic Shock Syndrome (STSS)	0	0.0	0	0.0	0	0.0	12	0.9	0	0.0	0	0.0	0	0.0
Toxic Shock Syndrome (TSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Vibriosis	0	0.0	0	0.0	1	3.5	6	0.5	0	0.0	0	0.0	1	1.1
Vibrio parahaemolyticus Infection	0	0.0	0	0.0	0	0.0	2	0.2	0	0.0	0	0.0	1	1.1
Other (Not Cholera)	0	0.0	0	0.0	1	3.5	4	0.3	0	0.0	0	0.0	0	0.0
Yersiniosis	0	0.0	0	0.0	0	0.0	21	1.6	0	0.0	0	0.0	0	0.0
SUBTOTAL	**53**	**71.4**	**146**	**92.7**	**24**	**84.1**	**1,669**	**126.8**	**48**	**113.9**	**50**	**167.2**	**53**	**56.6**

OUTBREAKS*														
Community*	0	n/a	0	n/a	0	n/a	4	n/a	0	n/a	0	n/a	0	n/a
Foodborne*	0	n/a	1	n/a	0	n/a	4	n/a	0	n/a	0	n/a	0	n/a
Healthcare-Associated*	7	n/a	1	n/a	0	n/a	26	n/a	3	n/a	0	n/a	2	n/a
Institutional*	1	n/a	0	n/a	0	n/a	22	n/a	0	n/a	1	n/a	0	n/a
Waterborne*	0	n/a	0	n/a	0	n/a	2	n/a	0	n/a	0	n/a	0	n/a
Zoonotic*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
SUBTOTAL	**8**	**n/a**	**2**	**n/a**	**0**	**n/a**	**58**	**n/a**	**3**	**n/a**	**1**	**n/a**	**2**	**n/a**

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

	Erie		Fairfield		Fayette		Franklin		Fulton		Gallia		Geauga	
VACCINE-PREVENTABLE	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**
Influenza-Associated Hospitalization	61	82.1	82	52.0	25	87.6	840	63.8	23	54.6	31	103.7	54	57.7
Influenza-Associated Pediatric Mortality*	0	*	0	*	0	*	1	*	0	*	0	*	0	*
Measles	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Imported	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Meningococcal Disease	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mumps	1	1.3	0	0.0	0	0.0	10	0.8	0	0.0	0	0.0	1	1.1
Pertussis	0	0.0	4	2.5	1	3.5	139	10.6	0	0.0	1	3.3	3	3.2
Streptococcus pneumoniae , Invasive Disease	8	10.8	26	16.5	0	0.0	157	11.9	4	9.5	2	6.7	2	2.1
Ages < 5 Years*	0	*	2	*	0	*	4	*	0	*	0	*	0	*
Drug Resistant, Ages 5+ Years*	4	*	3	*	0	*	30	*	0	*	1	*	1	*
Drug Susceptible, Ages 5+ Years*	4	*	21	*	0	*	123	*	4	*	1	*	1	*
Varicella	3	4.0	2	1.3	0	0.0	45	3.4	0	0.0	0	0.0	5	5.3
SUBTOTAL	**73**	**98.3**	**114**	**72.3**	**26**	**91.1**	**1,192**	**90.5**	**27**	**64.1**	**34**	**113.7**	**65**	**69.4**
ZOONOSES														
Babesiosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	3.3	0	0.0
Chikungunya Virus Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Dengue	0	0.0	0	0.0	0	0.0	3	0.2	0	0.0	0	0.0	0	0.0
Ehrlichiosis/Anaplasmosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4	13.4	0	0.0
Anaplasma phagocytophilum *	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ehrlichia chaffeensis *	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4	13.4	0	0.0
La Crosse Virus Disease*	0	0.0	0	0.0	0	0.0	2	0.2	0	0.0	0	0.0	1	1.1
Lyme Disease	3	4.0	6	3.8	1	3.5	16	1.2	0	0.0	10	33.4	2	2.1
Malaria	0	0.0	0	0.0	0	0.0	25	1.9	0	0.0	0	0.0	1	1.1
Q Fever	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0
Acute	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0
Chronic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Rabies, Animal*	2	n/a	0	n/a	0	n/a	6	n/a	1	n/a	1	n/a	0	n/a
Spotted Fever Rickettsiosis*	0	0.0	0	0.0	0	0.0	3	0.2	0	0.0	5	16.7	1	1.1
West Nile Virus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SUBTOTAL	**5**	**4.0**	**6**	**3.8**	**1**	**3.5**	**56**	**3.8**	**1**	**0.0**	**21**	**66.9**	**5**	**5.3**
GRAND TOTAL	**139**	**173.7**	**268**	**168.8**	**51**	**178.8**	**2,975**	**221.1**	**79**	**178.0**	**106**	**347.8**	**125**	**131.3**
POPULATION	**74,266**		**157,574**		**28,525**		**1,316,756**		**42,126**		**29,898**		**93,649**	

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

GENERAL INFECTIOUS DISEASES	Greene		Guernsey		Hamilton		Hancock		Hardin		Harrison		Henry	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Amebiasis	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Botulism	0	0.0	0	0.0	2	0.2	0	0.0	0	0.0	0	0.0	0	0.0
Infant*	0	*	0	*	2	*	0	*	0	*	0	*	0	*
Campylobacteriosis	27	16.0	12	30.9	137	16.8	1	1.3	10	31.9	3	19.9	6	22.2
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	1	0.6	2	5.1	14	1.7	3	4.0	0	0.0	1	6.6	2	7.4
Coccidioidomycosis	1	0.6	0	0.0	2	0.2	0	0.0	0	0.0	0	0.0	0	0.0
Creutzfeldt-Jakob Disease (CJD)	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Cryptosporidiosis	8	4.7	2	5.1	30	3.7	6	7.9	4	12.8	1	6.6	4	14.8
Cyclosporiasis	2	1.2	0	0.0	20	2.4	0	0.0	1	3.2	0	0.0	0	0.0
Escherichia coli, Shiga Toxin-Producing	7	4.1	2	5.1	34	4.2	1	1.3	0	0.0	0	0.0	2	7.4
O157:H7	1	0.6	0	0.0	3	0.4	0	0.0	0	0.0	0	0.0	0	0.0
Not O157:H7	4	2.4	1	2.6	12	1.5	0	0.0	0	0.0	0	0.0	0	0.0
Unknown Serotype	2	1.2	1	2.6	19	2.3	1	1.3	0	0.0	0	0.0	2	7.4
Giardiasis	4	2.4	4	10.3	32	3.9	2	2.6	1	3.2	2	13.3	0	0.0
Haemophilus influenzae, Invasive Disease	7	4.1	1	2.6	23	2.8	2	2.6	1	3.2	0	0.0	0	0.0
Hemolytic Uremic Syndrome (HUS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hepatitis A	10	5.9	0	0.0	95	11.6	0	0.0	0	0.0	2	13.3	0	0.0
Legionellosis	11	6.5	3	7.7	32	3.9	2	2.6	1	3.2	1	6.6	0	0.0
Listeriosis	0	0.0	0	0.0	3	0.4	0	0.0	0	0.0	0	0.0	0	0.0
Meningitis, Aseptic	4	2.4	4	10.3	69	8.4	0	0.0	1	3.2	1	6.6	2	7.4
Meningitis, Other Bacterial*	1	0.6	1	2.6	27	3.3	0	0.0	1	3.2	0	0.0	0	0.0
Salmonella Paratyphi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonella Typhi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonellosis	23	13.6	10	25.7	113	13.8	12	15.8	2	6.4	2	13.3	5	18.5
Shigellosis	2	1.2	0	0.0	63	7.7	1	1.3	0	0.0	0	0.0	0	0.0
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Streptococcal Disease, Group A, Invasive	18	10.7	0	0.0	40	4.9	2	2.6	2	6.4	0	0.0	0	0.0
Streptococcal Disease, Group B, in Newborn*	1	*	1	*	3	*	0	*	0	*	0	*	0	*
Streptococcal Toxic Shock Syndrome (STSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Toxic Shock Syndrome (TSS)	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Vibriosis	1	0.6	1	2.6	3	0.4	0	0.0	0	0.0	0	0.0	0	0.0
Vibrio parahaemolyticus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other (Not Cholera)	1	0.6	1	2.6	3	0.4	0	0.0	0	0.0	0	0.0	0	0.0
Yersiniosis	0	0.0	1	2.6	4	0.5	1	1.3	2	6.4	1	6.6	0	0.0
SUBTOTAL	**128**	**75.8**	**44**	**113.2**	**749**	**91.6**	**33**	**43.5**	**26**	**82.9**	**14**	**93.1**	**21**	**77.8**

OUTBREAKS*														
Community*	2	n/a	0	n/a	2	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Foodborne*	0	n/a	0	n/a	8	n/a	1	n/a	0	n/a	0	n/a	0	n/a
Healthcare-Associated*	1	n/a	0	n/a	7	n/a	1	n/a	0	n/a	0	n/a	0	n/a
Institutional*	0	n/a	1	n/a	52	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Waterborne*	0	n/a	0	n/a	1	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Zoonotic*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
SUBTOTAL	**3**	**n/a**	**1**	**n/a**	**70**	**n/a**	**2**	**n/a**	**0**	**n/a**	**0**	**n/a**	**0**	**n/a**

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

	Greene		Guernsey		Hamilton		Hancock		Hardin		Harrison		Henry	
VACCINE-PREVENTABLE	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**
Influenza-Associated Hospitalization	190	112.5	35	90.0	787	96.3	59	77.9	20	63.8	16	106.4	31	114.8
Influenza-Associated Pediatric Mortality*	0	*	0	*	0	*	0	*	0	*	0	*	0	*
Measles	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Imported	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Meningococcal Disease	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mumps	1	0.6	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Pertussis	34	20.1	1	2.6	139	17.0	1	1.3	0	0.0	1	6.6	0	0.0
Streptococcus pneumoniae , Invasive Disease	11	6.5	6	15.4	103	12.6	5	6.6	5	15.9	3	19.9	1	3.7
Ages < 5 Years*	1	*	0	*	6	*	1	*	0	*	0	*	0	*
Drug Resistant, Ages 5+ Years*	5	*	3	*	29	*	1	*	1	*	2	*	0	*
Drug Susceptible, Ages 5+ Years*	5	*	3	*	68	*	3	*	4	*	1	*	1	*
Varicella	3	1.8	5	12.9	36	4.4	0	0.0	0	0.0	0	0.0	2	7.4
SUBTOTAL	**239**	**141.5**	**47**	**120.9**	**1,066**	**130.4**	**65**	**85.8**	**25**	**79.7**	**20**	**133.0**	**34**	**125.9**
ZOONOSES														
Babesiosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chikungunya Virus Infection*	0	0.0	0	0.0	4	0.5	0	0.0	0	0.0	0	0.0	0	0.0
Dengue	0	0.0	0	0.0	1	0.1	1	1.3	0	0.0	0	0.0	0	0.0
Ehrlichiosis/Anaplasmosis	1	0.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Anaplasma phagocytophilum *	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ehrlichia chaffeensis *	1	0.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
La Crosse Virus Disease*	0	0.0	1	2.6	0	0.0	1	1.3	0	0.0	0	0.0	0	0.0
Lyme Disease	2	1.2	24	61.7	13	1.6	2	2.6	0	0.0	21	139.6	0	0.0
Malaria	1	0.6	0	0.0	6	0.7	0	0.0	0	0.0	0	0.0	0	0.0
Q Fever	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Acute	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chronic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Rabies, Animal*	3	n/a	0	n/a	3	n/a	0	n/a	1	n/a	0	n/a	0	n/a
Spotted Fever Rickettsiosis*	0	0.0	0	0.0	4	0.5	0	0.0	0	0.0	0	0.0	0	0.0
West Nile Virus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SUBTOTAL	**7**	**2.4**	**25**	**64.3**	**31**	**3.4**	**4**	**5.3**	**1**	**0.0**	**21**	**139.6**	**0**	**0.0**
GRAND TOTAL	**377**	**219.6**	**117**	**298.4**	**1,916**	**225.5**	**104**	**134.6**	**52**	**162.6**	**55**	**365.7**	**55**	**203.7**
POPULATION	**168,937**		**38,875**		**817,473**		**75,783**		**31,365**		**15,040**		**27,006**	

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

GENERAL INFECTIOUS DISEASES	Highland		Hocking		Holmes		Huron		Jackson		Jefferson		Knox	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Amebiasis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Botulism	0	0.0	0	0.0	0	0.0	0	0.0	1	3.1	0	0.0	0	0.0
Infant*	0	*	0	*	0	*	0	*	1	*	0	*	0	*
Campylobacteriosis	10	23.2	4	14.2	12	27.3	7	12.0	16	49.4	13	19.9	15	24.1
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	1	2.3	0	0.0	1	2.3	1	1.7	0	0.0	1	1.5	0	0.0
Coccidioidomycosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Creutzfeldt-Jakob Disease (CJD)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Cryptosporidiosis	1	2.3	0	0.0	3	6.8	3	5.1	3	9.3	2	3.1	2	3.2
Cyclosporiasis	0	0.0	0	0.0	0	0.0	1	1.7	0	0.0	0	0.0	0	0.0
Escherichia coli, Shiga Toxin-Producing	1	2.3	1	3.5	3	6.8	0	0.0	2	6.2	0	0.0	4	6.4
O157:H7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not O157:H7	0	0.0	1	3.5	1	2.3	0	0.0	1	3.1	0	0.0	2	3.2
Unknown Serotype	1	2.3	0	0.0	2	4.5	0	0.0	1	3.1	0	0.0	2	3.2
Giardiasis	0	0.0	1	3.5	2	4.5	0	0.0	2	6.2	1	1.5	6	9.6
Haemophilus influenzae, Invasive Disease	2	4.6	0	0.0	1	2.3	2	3.4	1	3.1	5	7.7	1	1.6
Hemolytic Uremic Syndrome (HUS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hepatitis A	11	25.5	6	21.2	2	4.5	0	0.0	16	49.4	35	53.6	21	33.7
Legionellosis	0	0.0	1	3.5	4	9.1	4	6.9	2	6.2	3	4.6	4	6.4
Listeriosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	1.5	0	0.0
Meningitis, Aseptic	2	4.6	1	3.5	3	6.8	3	5.1	1	3.1	0	0.0	1	1.6
Meningitis, Other Bacterial*	1	2.3	0	0.0	0	0.0	2	3.4	1	3.1	0	0.0	0	0.0
Salmonella Paratyphi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonella Typhi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonellosis	5	11.6	3	10.6	11	25.0	13	22.3	7	21.6	7	10.7	11	17.7
Shigellosis	0	0.0	0	0.0	0	0.0	0	0.0	1	3.1	0	0.0	4	6.4
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Streptococcal Disease, Group A, Invasive	5	11.6	2	7.1	1	2.3	2	3.4	1	3.1	5	7.7	2	3.2
Streptococcal Disease, Group B, in Newborn*	1	*	0	*	0	*	0	*	1	*	0	*	0	*
Streptococcal Toxic Shock Syndrome (STSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Toxic Shock Syndrome (TSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Vibriosis	0	0.0	1	3.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Vibrio parahaemolyticus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other (Not Cholera)	0	0.0	1	3.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Yersiniosis	0	0.0	0	0.0	1	2.3	0	0.0	0	0.0	0	0.0	4	6.4
SUBTOTAL	**40**	**92.7**	**20**	**70.8**	**44**	**100.1**	**38**	**65.2**	**55**	**169.7**	**73**	**111.7**	**75**	**120.3**

OUTBREAKS*														
Community*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Foodborne*	0	n/a	1	n/a	1	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Healthcare-Associated*	0	n/a	0	n/a	0	n/a	2	n/a	0	n/a	0	n/a	0	n/a
Institutional*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Waterborne*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Zoonotic*	0	n/a	0	n/a	0	n/a	1	n/a	0	n/a	0	n/a	0	n/a
SUBTOTAL	**0**	**n/a**	**1**	**n/a**	**1**	**n/a**	**3**	**n/a**	**0**	**n/a**	**0**	**n/a**	**0**	**n/a**

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

	Highland		Hocking		Holmes		Huron		Jackson		Jefferson		Knox	
VACCINE-PREVENTABLE	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**
Influenza-Associated Hospitalization	31	71.8	15	53.1	26	59.1	55	94.4	24	74.0	48	73.5	44	70.6
Influenza-Associated Pediatric Mortality*	1	*	0	*	0	*	0	*	0	*	0	*	0	*
Measles	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Imported	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Meningococcal Disease	1	2.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mumps	0	0.0	1	3.5	0	0.0	0	0.0	0	0.0	1	1.5	0	0.0
Pertussis	1	2.3	1	3.5	10	22.7	5	8.6	0	0.0	1	1.5	3	4.8
Streptococcus pneumoniae , Invasive Disease	3	7.0	2	7.1	5	11.4	6	10.3	2	6.2	15	23.0	4	6.4
Ages < 5 Years*	0	*	0	*	0	*	1	*	0	*	0	*	2	*
Drug Resistant, Ages 5+ Years*	1	*	1	*	0	*	2	*	1	*	1	*	1	*
Drug Susceptible, Ages 5+ Years*	2	*	1	*	5	*	3	*	1	*	14	*	1	*
Varicella	3	7.0	1	3.5	3	6.8	0	0.0	0	0.0	1	1.5	2	3.2
SUBTOTAL	**40**	**92.7**	**20**	**70.8**	**44**	**100.1**	**66**	**113.3**	**26**	**80.2**	**66**	**101.0**	**53**	**85.0**
ZOONOSES														
Babesiosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chikungunya Virus Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Dengue	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ehrlichiosis/Anaplasmosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Anaplasma phagocytophilum *	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ehrlichia chaffeensis *	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
La Crosse Virus Disease*	0	0.0	0	0.0	3	6.8	0	0.0	0	0.0	0	0.0	3	4.8
Lyme Disease	1	2.3	2	7.1	22	50.0	3	5.1	1	3.1	34	52.0	16	25.7
Malaria	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Q Fever	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Acute	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chronic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Rabies, Animal*	0	n/a	1	n/a	1	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Spotted Fever Rickettsiosis*	2	4.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
West Nile Virus Infection	0	0.0	0	0.0	1	2.3	0	0.0	0	0.0	0	0.0	0	0.0
SUBTOTAL	**3**	**7.0**	**3**	**7.1**	**27**	**59.1**	**3**	**5.1**	**1**	**3.1**	**34**	**52.0**	**19**	**30.5**
GRAND TOTAL	**83**	**192.3**	**44**	**148.6**	**116**	**259.3**	**110**	**183.6**	**82**	**253.0**	**173**	**264.8**	**147**	**235.9**
POPULATION	**43,161**		**28,264**		**43,960**		**58,266**		**32,413**		**65,325**		**62,322**	

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

GENERAL INFECTIOUS DISEASES	Lake		Lawrence		Licking		Logan		Lorain		Lucas		Madison	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Amebiasis	0	0.0	1	1.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Botulism	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Infant*	0	*	0	*	0	*	0	*	0	*	0	*	0	*
Campylobacteriosis	49	21.3	33	55.5	59	33.4	11	24.1	64	20.7	85	19.8	10	22.4
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	9	3.9	0	0.0	3	1.7	0	0.0	13	4.2	10	2.3	1	2.2
Coccidioidomycosis	0	0.0	0	0.0	0	0.0	1	2.2	0	0.0	0	0.0	0	0.0
Creutzfeldt-Jakob Disease (CJD)	0	0.0	0	0.0	1	0.6	0	0.0	3	1.0	0	0.0	0	0.0
Cryptosporidiosis	2	0.9	14	23.5	6	3.4	3	6.6	12	3.9	25	5.8	5	11.2
Cyclosporiasis	0	0.0	0	0.0	1	0.6	0	0.0	0	0.0	9	2.1	1	2.2
Escherichia coli, Shiga Toxin-Producing	8	3.5	2	3.4	9	5.1	3	6.6	14	4.5	16	3.7	5	11.2
O157:H7	3	1.3	0	0.0	1	0.6	0	0.0	2	0.6	1	0.2	1	2.2
Not O157:H7	0	0.0	0	0.0	1	0.6	0	0.0	5	1.6	6	1.4	1	2.2
Unknown Serotype	5	2.2	2	3.4	7	4.0	3	6.6	7	2.3	9	2.1	3	6.7
Giardiasis	7	3.0	1	1.7	12	6.8	1	2.2	2	0.6	15	3.5	2	4.5
Haemophilus influenzae, Invasive Disease	8	3.5	2	3.4	4	2.3	0	0.0	8	2.6	14	3.3	1	2.2
Hemolytic Uremic Syndrome (HUS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2	0	0.0
Hepatitis A	8	3.5	3	5.0	58	32.8	2	4.4	9	2.9	4	0.9	4	8.9
Legionellosis	19	8.3	0	0.0	9	5.1	3	6.6	18	5.8	23	5.4	4	8.9
Listeriosis	1	0.4	0	0.0	1	0.6	0	0.0	0	0.0	2	0.5	0	0.0
Meningitis, Aseptic	0	0.0	3	5.0	16	9.0	3	6.6	8	2.6	42	9.8	1	2.2
Meningitis, Other Bacterial*	5	2.2	0	0.0	0	0.0	0	0.0	3	1.0	5	1.2	0	0.0
Salmonella Paratyphi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonella Typhi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonellosis	30	13.0	12	20.2	26	14.7	7	15.3	54	17.4	59	13.8	5	11.2
Shigellosis	11	4.8	1	1.7	2	1.1	2	4.4	9	2.9	10	2.3	0	0.0
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Streptococcal Disease, Group A, Invasive	12	5.2	2	3.4	10	5.7	0	0.0	15	4.8	33	7.7	2	4.5
Streptococcal Disease, Group B, in Newborn*	1	*	0	*	2	*	0	*	1	*	2	*	0	*
Streptococcal Toxic Shock Syndrome (STSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Toxic Shock Syndrome (TSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Vibriosis	3	1.3	0	0.0	3	1.7	0	0.0	5	1.6	7	1.6	0	0.0
Vibrio parahaemolyticus Infection	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3	0	0.0	0	0.0
Other (Not Cholera)	3	1.3	0	0.0	3	1.7	0	0.0	4	1.3	7	1.6	0	0.0
Yersiniosis	0	0.0	0	0.0	4	2.3	0	0.0	1	0.3	2	0.5	0	0.0
SUBTOTAL	**173**	**75.2**	**74**	**124.4**	**226**	**127.8**	**36**	**78.8**	**239**	**77.1**	**364**	**85.0**	**41**	**91.7**

OUTBREAKS*														
Community*	1	n/a	0	n/a	0	n/a	0	n/a	0	n/a	1	n/a	0	n/a
Foodborne*	0	n/a	0	n/a	1	n/a	1	n/a	1	n/a	5	n/a	0	n/a
Healthcare-Associated*	1	n/a	1	n/a	0	n/a	1	n/a	0	n/a	9	n/a	0	n/a
Institutional*	3	n/a	1	n/a	0	n/a	0	n/a	0	n/a	6	n/a	1	n/a
Waterborne*	1	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Zoonotic*	0	n/a	1	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
SUBTOTAL	**6**	**n/a**	**3**	**n/a**	**1**	**n/a**	**2**	**n/a**	**1**	**n/a**	**21**	**n/a**	**1**	**n/a**

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

	Lake		Lawrence		Licking		Logan		Lorain		Lucas		Madison	
VACCINE-PREVENTABLE	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**
Influenza-Associated Hospitalization	143	62.1	44	74.0	91	51.5	15	32.8	150	48.4	521	121.6	40	89.4
Influenza-Associated Pediatric Mortality*	1	*	0	*	0	*	0	*	0	*	0	*	0	*
Measles	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Imported	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Meningococcal Disease	0	0.0	1	1.7	0	0.0	0	0.0	1	0.3	1	0.2	0	0.0
Mumps	1	0.4	0	0.0	1	0.6	0	0.0	0	0.0	2	0.5	0	0.0
Pertussis	6	2.6	0	0.0	11	6.2	4	8.8	4	1.3	7	1.6	2	4.5
Streptococcus pneumoniae , Invasive Disease	17	7.4	13	21.9	21	11.9	0	0.0	30	9.7	43	10.0	4	8.9
Ages < 5 Years*	0	*	0	*	1	*	0	*	0	*	0	*	0	*
Drug Resistant, Ages 5+ Years*	4	*	1	*	3	*	0	*	12	*	13	*	1	*
Drug Susceptible, Ages 5+ Years*	13	*	12	*	17	*	0	*	18	*	30	*	3	*
Varicella	6	2.6	1	1.7	0	0.0	1	2.2	9	2.9	13	3.0	5	11.2
SUBTOTAL	**174**	**75.6**	**59**	**99.2**	**124**	**70.1**	**20**	**43.8**	**194**	**62.6**	**587**	**137.0**	**51**	**114.0**
ZOONOSES														
Babesiosis	1	0.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chikungunya Virus Infection*	1	0.4	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2	0	0.0
Dengue	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ehrlichiosis/Anaplasmosis	1	0.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Anaplasma phagocytophilum *	1	0.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ehrlichia chaffeensis *	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
La Crosse Virus Disease*	1	0.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Lyme Disease	3	1.3	1	1.7	24	13.6	0	0.0	2	0.6	3	0.7	1	2.2
Malaria	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2	0	0.0
Q Fever	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2	0	0.0
Acute	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chronic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2	0	0.0
Rabies, Animal*	0	n/a	0	n/a	1	n/a	0	n/a	0	n/a	2	n/a	1	n/a
Spotted Fever Rickettsiosis*	0	0.0	1	1.7	0	0.0	0	0.0	1	0.3	2	0.5	0	0.0
West Nile Virus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2	0	0.0
SUBTOTAL	**7**	**3.0**	**2**	**3.4**	**25**	**13.6**	**0**	**0.0**	**3**	**1.0**	**11**	**2.1**	**2**	**2.2**
GRAND TOTAL	**360**	**153.8**	**138**	**227.0**	**376**	**211.5**	**58**	**122.6**	**437**	**140.7**	**983**	**224.1**	**95**	**207.9**
POPULATION	**230,149**		**59,463**		**176,862**		**45,672**		**309,833**		**428,348**		**44,731**	

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

GENERAL INFECTIOUS DISEASES	Mahoning		Marion		Medina		Meigs		Mercer		Miami		Monroe	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Amebiasis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Botulism	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Infant*	0	*	0	*	0	*	0	*	0	*	0	*	0	*
Campylobacteriosis	16	7.0	24	36.9	44	24.5	9	39.3	33	80.2	10	9.3	4	29.3
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	16	7.0	0	0.0	4	2.2	0	0.0	2	4.9	2	1.9	1	7.3
Coccidioidomycosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Creutzfeldt-Jakob Disease (CJD)	0	0.0	0	0.0	1	0.6	0	0.0	0	0.0	0	0.0	0	0.0
Cryptosporidiosis	10	4.4	22	33.8	5	2.8	1	4.4	16	38.9	4	3.7	0	0.0
Cyclosporiasis	0	0.0	2	3.1	2	1.1	0	0.0	0	0.0	0	0.0	0	0.0
Escherichia coli, Shiga Toxin-Producing	4	1.7	7	10.8	13	7.2	1	4.4	29	70.4	5	4.7	0	0.0
O157:H7	0	0.0	0	0.0	1	0.6	0	0.0	8	19.4	0	0.0	0	0.0
Not O157:H7	4	1.7	2	3.1	1	0.6	0	0.0	14	34.0	2	1.9	0	0.0
Unknown Serotype	0	0.0	5	7.7	11	6.1	1	4.4	7	17.0	3	2.8	0	0.0
Giardiasis	1	0.4	8	12.3	10	5.6	0	0.0	5	12.1	1	0.9	0	0.0
Haemophilus influenzae, Invasive Disease	5	2.2	5	7.7	5	2.8	0	0.0	1	2.4	1	0.9	0	0.0
Hemolytic Uremic Syndrome (HUS)	0	0.0	0	0.0	0	0.0	0	0.0	1	2.4	0	0.0	0	0.0
Hepatitis A	3	1.3	54	83.0	20	11.1	6	26.2	4	9.7	15	14.0	1	7.3
Legionellosis	7	3.1	2	3.1	11	6.1	0	0.0	2	4.9	1	0.9	0	0.0
Listeriosis	0	0.0	0	0.0	1	0.6	0	0.0	0	0.0	0	0.0	0	0.0
Meningitis, Aseptic	8	3.5	3	4.6	10	5.6	1	4.4	7	17.0	2	1.9	1	7.3
Meningitis, Other Bacterial*	3	1.3	1	1.5	3	1.7	0	0.0	2	4.9	0	0.0	0	0.0
Salmonella Paratyphi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonella Typhi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonellosis	22	9.6	16	24.6	18	10.0	2	8.7	7	17.0	11	10.3	2	14.6
Shigellosis	7	3.1	1	1.5	4	2.2	1	4.4	8	19.4	1	0.9	0	0.0
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	0	0.0	0	0.0	0	0.0	0	0.0	2	4.9	0	0.0	0	0.0
Streptococcal Disease, Group A, Invasive	24	10.5	8	12.3	6	3.3	0	0.0	0	0.0	11	10.3	2	14.6
Streptococcal Disease, Group B, in Newborn*	2	*	0	*	0	*	0	*	0	*	2	*	0	*
Streptococcal Toxic Shock Syndrome (STSS)	0	0.0	0	0.0	1	0.6	0	0.0	0	0.0	0	0.0	0	0.0
Toxic Shock Syndrome (TSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.9	0	0.0
Vibriosis	0	0.0	0	0.0	1	0.6	0	0.0	1	2.4	0	0.0	0	0.0
Vibrio parahaemolyticus Infection	0	0.0	0	0.0	1	0.6	0	0.0	0	0.0	0	0.0	0	0.0
Other (Not Cholera)	0	0.0	0	0.0	0	0.0	0	0.0	1	2.4	0	0.0	0	0.0
Yersiniosis	0	0.0	1	1.5	3	1.7	0	0.0	0	0.0	1	0.9	0	0.0
SUBTOTAL	**128**	**56.0**	**154**	**236.6**	**162**	**90.1**	**21**	**91.7**	**120**	**291.5**	**68**	**63.6**	**11**	**80.6**

OUTBREAKS*														
Community*	0	n/a	0	n/a	1	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Foodborne*	2	n/a	0	n/a	0	n/a	1	n/a	0	n/a	0	n/a	0	n/a
Healthcare-Associated*	0	n/a	1	n/a	1	n/a	0	n/a	2	n/a	0	n/a	0	n/a
Institutional*	2	n/a	0	n/a	3	n/a	0	n/a	2	n/a	0	n/a	1	n/a
Waterborne*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	1	n/a	0	n/a
Zoonotic*	0	n/a	1	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
SUBTOTAL	**4**	**n/a**	**2**	**n/a**	**5**	**n/a**	**1**	**n/a**	**4**	**n/a**	**1**	**n/a**	**1**	**n/a**

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

	Mahoning		Marion		Medina		Meigs		Mercer		Miami		Monroe	
VACCINE-PREVENTABLE	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**
Influenza-Associated Hospitalization	277	121.1	87	133.7	138	76.8	20	87.3	51	123.9	76	71.0	7	51.3
Influenza-Associated Pediatric Mortality*	0	*	0	*	0	*	0	*	0	*	0	*	0	*
Measles	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Imported	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Meningococcal Disease	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mumps	17	7.4	0	0.0	1	0.6	0	0.0	1	2.4	1	0.9	0	0.0
Pertussis	3	1.3	0	0.0	3	1.7	0	0.0	4	9.7	9	8.4	0	0.0
Streptococcus pneumoniae , Invasive Disease	21	9.2	9	13.8	12	6.7	3	13.1	5	12.1	7	6.5	1	7.3
Ages < 5 Years*	0	*	1	*	1	*	0	*	1	*	0	*	0	*
Drug Resistant, Ages 5+ Years*	11	*	2	*	4	*	1	*	1	*	2	*	0	*
Drug Susceptible, Ages 5+ Years*	10	*	6	*	7	*	2	*	3	*	5	*	1	*
Varicella	8	3.5	0	0.0	3	1.7	2	8.7	3	7.3	2	1.9	0	0.0
SUBTOTAL	**326**	**142.6**	**96**	**147.5**	**157**	**87.3**	**25**	**109.1**	**64**	**155.4**	**95**	**88.8**	**8**	**58.6**
ZOONOSES														
Babesiosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chikungunya Virus Infection*	0	0.0	0	0.0	3	1.7	0	0.0	0	0.0	0	0.0	0	0.0
Dengue	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ehrlichiosis/Anaplasmosis	2	0.9	0	0.0	1	0.6	0	0.0	0	0.0	0	0.0	0	0.0
Anaplasma phagocytophilum *	1	0.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ehrlichia chaffeensis *	1	0.4	0	0.0	1	0.6	0	0.0	0	0.0	0	0.0	0	0.0
La Crosse Virus Disease*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Lyme Disease	4	1.7	0	0.0	5	2.8	0	0.0	0	0.0	1	0.9	0	0.0
Malaria	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Q Fever	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Acute	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chronic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Rabies, Animal*	2	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Spotted Fever Rickettsiosis*	0	0.0	0	0.0	1	0.6	0	0.0	0	0.0	1	0.9	0	0.0
West Nile Virus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SUBTOTAL	**8**	**2.6**	**0**	**0.0**	**10**	**5.6**	**0**	**0.0**	**0**	**0.0**	**2**	**1.9**	**0**	**0.0**
GRAND TOTAL	**466**	**201.2**	**252**	**384.1**	**334**	**183.0**	**47**	**200.8**	**188**	**446.9**	**166**	**154.2**	**20**	**139.2**
POPULATION	**228,683**		**65,093**		**179,746**		**22,907**		**41,172**		**106,987**		**13,654**	

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

GENERAL INFECTIOUS DISEASES	Montgomery		Morgan		Morrow		Muskingum		Noble		Ottawa		Paulding	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Amebiasis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Botulism	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Infant*	0	*	0	*	0	*	0	*	0	*	0	*	0	*
Campylobacteriosis	68	12.8	5	34.5	8	22.6	23	26.7	6	41.6	20	49.4	8	42.8
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	13	2.4	0	0.0	0	0.0	2	2.3	0	0.0	2	4.9	0	0.0
Coccidioidomycosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Creutzfeldt-Jakob Disease (CJD)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Cryptosporidiosis	27	5.1	4	27.6	3	8.5	19	22.0	0	0.0	1	2.5	0	0.0
Cyclosporiasis	4	0.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Escherichia coli, Shiga Toxin-Producing	8	1.5	1	6.9	1	2.8	5	5.8	1	6.9	2	4.9	0	0.0
O157:H7	1	0.2	0	0.0	1	2.8	0	0.0	0	0.0	0	0.0	0	0.0
Not O157:H7	3	0.6	0	0.0	0	0.0	2	2.3	0	0.0	1	2.5	0	0.0
Unknown Serotype	4	0.8	1	6.9	0	0.0	3	3.5	1	6.9	1	2.5	0	0.0
Giardiasis	10	1.9	0	0.0	1	2.8	9	10.4	0	0.0	0	0.0	1	5.4
Haemophilus influenzae, Invasive Disease	21	3.9	1	6.9	3	8.5	3	3.5	0	0.0	1	2.5	0	0.0
Hemolytic Uremic Syndrome (HUS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hepatitis A	63	11.8	1	6.9	18	51.0	42	48.7	9	62.4	0	0.0	0	0.0
Legionellosis	46	8.7	0	0.0	3	8.5	3	3.5	0	0.0	0	0.0	1	5.4
Listeriosis	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	5.4
Meningitis, Aseptic	15	2.8	0	0.0	0	0.0	6	7.0	0	0.0	1	2.5	1	5.4
Meningitis, Other Bacterial*	8	1.5	0	0.0	0	0.0	1	1.2	0	0.0	0	0.0	0	0.0
Salmonella Paratyphi Infection*	2	0.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonella Typhi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	1	6.9	0	0.0	0	0.0
Salmonellosis	44	8.3	1	6.9	7	19.8	15	17.4	3	20.8	10	24.7	4	21.4
Shigellosis	16	3.0	1	6.9	1	2.8	4	4.6	1	6.9	0	0.0	0	0.0
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Streptococcal Disease, Group A, Invasive	78	14.7	1	6.9	4	11.3	9	10.4	1	6.9	2	4.9	1	5.4
Streptococcal Disease, Group B, in Newborn*	3	*	0	*	0	*	0	*	0	*	0	*	1	*
Streptococcal Toxic Shock Syndrome (STSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Toxic Shock Syndrome (TSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Vibriosis	1	0.2	2	13.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Vibrio parahaemolyticus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other (Not Cholera)	1	0.2	2	13.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Yersiniosis	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0	1	2.5	0	0.0
SUBTOTAL	**430**	**80.9**	**17**	**117.2**	**49**	**138.7**	**141**	**163.5**	**22**	**152.5**	**40**	**98.7**	**18**	**96.4**

OUTBREAKS*														
Community*	1	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Foodborne*	3	n/a	0	n/a	0	n/a	2	n/a	0	n/a	0	n/a	0	n/a
Healthcare-Associated*	7	n/a	1	n/a	0	n/a	1	n/a	0	n/a	1	n/a	1	n/a
Institutional*	5	n/a	0	n/a	0	n/a	0	n/a	0	n/a	1	n/a	0	n/a
Waterborne*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Zoonotic*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
SUBTOTAL	**16**	**n/a**	**1**	**n/a**	**0**	**n/a**	**3**	**n/a**	**0**	**n/a**	**2**	**n/a**	**1**	**n/a**

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

	Montgomery		Morgan		Morrow		Muskingum		Noble		Ottawa		Paulding	
VACCINE-PREVENTABLE	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**
Influenza-Associated Hospitalization	852	160.2	15	103.4	25	70.8	141	163.5	3	20.8	31	76.5	27	144.6
Influenza-Associated Pediatric Mortality*	0	*	0	*	0	*	0	*	0	*	0	*	0	*
Measles	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Imported	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Meningococcal Disease	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mumps	4	0.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pertussis	101	19.0	8	55.1	1	2.8	7	8.1	1	6.9	2	4.9	0	0.0
Streptococcus pneumoniae , Invasive Disease	72	13.5	4	27.6	7	19.8	17	19.7	2	13.9	7	17.3	1	5.4
Ages < 5 Years*	4	*	0	*	0	*	0	*	1	*	0	*	0	*
Drug Resistant, Ages 5+ Years*	17	*	0	*	2	*	0	*	0	*	2	*	1	*
Drug Susceptible, Ages 5+ Years*	51	*	4	*	5	*	17	*	1	*	5	*	0	*
Varicella	13	2.4	0	0.0	0	0.0	2	2.3	1	6.9	0	0.0	2	10.7
SUBTOTAL	**1,043**	**196.2**	**27**	**186.1**	**33**	**93.4**	**167**	**193.7**	**7**	**48.5**	**40**	**98.7**	**30**	**160.7**
ZOONOSES														
Babesiosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chikungunya Virus Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Dengue	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ehrlichiosis/Anaplasmosis	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Anaplasma phagocytophilum *	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ehrlichia chaffeensis *	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
La Crosse Virus Disease*	0	0.0	0	0.0	0	0.0	1	1.2	0	0.0	0	0.0	0	0.0
Lyme Disease	5	0.9	0	0.0	0	0.0	10	11.6	3	20.8	0	0.0	0	0.0
Malaria	5	0.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Q Fever	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Acute	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chronic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Rabies, Animal*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Spotted Fever Rickettsiosis*	0	0.0	0	0.0	1	2.8	0	0.0	0	0.0	0	0.0	0	0.0
West Nile Virus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SUBTOTAL	**12**	**2.3**	**0**	**0.0**	**1**	**2.8**	**11**	**12.8**	**3**	**20.8**	**0**	**0.0**	**0**	**0.0**
GRAND TOTAL	**1,501**	**279.3**	**45**	**303.3**	**83**	**234.9**	**322**	**370.0**	**32**	**221.9**	**82**	**197.4**	**49**	**257.1**
POPULATION	**531,687**		**14,508**		**35,328**		**86,215**		**14,424**		**40,525**		**18,672**	

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

GENERAL INFECTIOUS DISEASES	Perry		Pickaway		Pike		Portage		Preble		Putnam		Richland	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Amebiasis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Botulism	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Infant*	0	*	0	*	0	*	0	*	0	*	0	*	0	*
Campylobacteriosis	7	19.4	14	23.9	12	43.2	28	17.2	7	17.1	7	20.7	19	15.7
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	0	0.0	1	1.7	2	7.2	4	2.5	1	2.4	3	8.9	1	0.8
Coccidioidomycosis	0	0.0	1	1.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Creutzfeldt-Jakob Disease (CJD)	0	0.0	0	0.0	0	0.0	2	1.2	0	0.0	0	0.0	0	0.0
Cryptosporidiosis	2	5.5	3	5.1	1	3.6	6	3.7	3	7.3	7	20.7	4	3.3
Cyclosporiasis	0	0.0	0	0.0	1	3.6	0	0.0	0	0.0	1	3.0	0	0.0
Escherichia coli, Shiga Toxin-Producing	2	5.5	1	1.7	2	7.2	9	5.5	4	9.8	3	8.9	3	2.5
O157:H7	0	0.0	0	0.0	1	3.6	1	0.6	0	0.0	0	0.0	1	0.8
Not O157:H7	0	0.0	0	0.0	0	0.0	4	2.5	1	2.4	0	0.0	0	0.0
Unknown Serotype	2	5.5	1	1.7	1	3.6	4	2.5	3	7.3	3	8.9	2	1.7
Giardiasis	0	0.0	3	5.1	0	0.0	4	2.5	1	2.4	0	0.0	3	2.5
Haemophilus influenzae, Invasive Disease	1	2.8	1	1.7	0	0.0	3	1.8	2	4.9	3	8.9	5	4.1
Hemolytic Uremic Syndrome (HUS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hepatitis A	21	58.1	23	39.3	9	32.4	26	16.0	11	26.9	0	0.0	7	5.8
Legionellosis	3	8.3	4	6.8	1	3.6	11	6.8	4	9.8	1	3.0	9	7.4
Listeriosis	0	0.0	0	0.0	0	0.0	2	1.2	0	0.0	0	0.0	1	0.8
Meningitis, Aseptic	0	0.0	5	8.6	5	18.0	3	1.8	1	2.4	3	8.9	7	5.8
Meningitis, Other Bacterial*	0	0.0	1	1.7	0	0.0	1	0.6	0	0.0	1	3.0	0	0.0
Salmonella Paratyphi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonella Typhi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonellosis	8	22.1	10	17.1	1	3.6	30	18.5	3	7.3	9	26.6	16	13.2
Shigellosis	2	5.5	1	1.7	1	3.6	0	0.0	0	0.0	0	0.0	2	1.7
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Streptococcal Disease, Group A, Invasive	3	8.3	10	17.1	1	3.6	11	6.8	2	4.9	2	5.9	9	7.4
Streptococcal Disease, Group B, in Newborn*	0	*	0	*	0	*	1	*	0	*	0	*	0	*
Streptococcal Toxic Shock Syndrome (STSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Toxic Shock Syndrome (TSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Vibriosis	0	0.0	0	0.0	0	0.0	3	1.8	0	0.0	0	0.0	0	0.0
Vibrio parahaemolyticus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other (Not Cholera)	0	0.0	0	0.0	0	0.0	3	1.8	0	0.0	0	0.0	0	0.0
Yersiniosis	0	0.0	3	5.1	1	3.6	1	0.6	1	2.4	0	0.0	2	1.7
SUBTOTAL	**49**	**135.6**	**81**	**138.6**	**37**	**133.2**	**145**	**89.2**	**40**	**97.8**	**40**	**118.1**	**88**	**72.6**

OUTBREAKS*														
Community*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	1	n/a
Foodborne*	0	n/a	0	n/a	1	n/a	0	n/a	0	n/a	0	n/a	1	n/a
Healthcare-Associated*	0	n/a	1	n/a	0	n/a	1	n/a	0	n/a	0	n/a	6	n/a
Institutional*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	2	n/a	15	n/a
Waterborne*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Zoonotic*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
SUBTOTAL	**0**	**n/a**	**1**	**n/a**	**1**	**n/a**	**1**	**n/a**	**0**	**n/a**	**2**	**n/a**	**23**	**n/a**

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

	Perry		Pickaway		Pike		Portage		Preble		Putnam		Richland	
VACCINE-PREVENTABLE	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**
Influenza-Associated Hospitalization	48	132.8	58	99.2	33	118.8	132	81.2	43	105.2	21	62.0	110	90.8
Influenza-Associated Pediatric Mortality*	0	*	0	*	0	*	0	*	0	*	0	*	0	*
Measles	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Imported	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Meningococcal Disease	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mumps	0	0.0	0	0.0	0	0.0	2	1.2	1	2.4	0	0.0	0	0.0
Pertussis	0	0.0	4	6.8	0	0.0	8	4.9	5	12.2	0	0.0	32	26.4
Streptococcus pneumoniae , Invasive Disease	7	19.4	17	29.1	9	32.4	12	7.4	4	9.8	3	8.9	21	17.3
Ages < 5 Years*	0	*	1	*	1	*	0	*	0	*	0	*	4	*
Drug Resistant, Ages 5+ Years*	0	*	5	*	1	*	4	*	0	*	0	*	5	*
Drug Susceptible, Ages 5+ Years*	7	*	11	*	7	*	8	*	4	*	3	*	12	*
Varicella	0	0.0	3	5.1	1	3.6	3	1.8	0	0.0	0	0.0	14	11.6
SUBTOTAL	**55**	**152.2**	**82**	**140.3**	**43**	**154.8**	**157**	**96.6**	**53**	**129.6**	**24**	**70.9**	**177**	**146.1**
ZOONOSES														
Babesiosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chikungunya Virus Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Dengue	0	0.0	0	0.0	0	0.0	1	0.6	0	0.0	0	0.0	0	0.0
Ehrlichiosis/Anaplasmosis	0	0.0	0	0.0	2	7.2	0	0.0	0	0.0	0	0.0	0	0.0
Anaplasma phagocytophilum *	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ehrlichia chaffeensis *	0	0.0	0	0.0	2	7.2	0	0.0	0	0.0	0	0.0	0	0.0
La Crosse Virus Disease*	0	0.0	0	0.0	0	0.0	1	0.6	0	0.0	0	0.0	2	1.7
Lyme Disease	1	2.8	1	1.7	3	10.8	12	7.4	0	0.0	0	0.0	1	0.8
Malaria	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Q Fever	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.8
Acute	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.8
Chronic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Rabies, Animal*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Spotted Fever Rickettsiosis*	0	0.0	1	1.7	3	10.8	2	1.2	1	2.4	0	0.0	0	0.0
West Nile Virus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SUBTOTAL	**1**	**2.8**	**2**	**3.4**	**8**	**28.8**	**16**	**9.8**	**1**	**2.4**	**0**	**0.0**	**4**	**3.3**
GRAND TOTAL	**105**	**290.6**	**166**	**282.3**	**89**	**316.9**	**319**	**195.7**	**94**	**229.9**	**66**	**189.0**	**292**	**222.0**
POPULATION	**36,134**		**58,457**		**27,772**		**162,466**		**40,882**		**33,861**		**121,154**	

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

GENERAL INFECTIOUS DISEASES	Ross		Sandusky		Scioto		Seneca		Shelby		Stark		Summit	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Amebiasis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Botulism	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Infant*	0	*	0	*	0	*	0	*	0	*	0	*	0	*
Campylobacteriosis	10	13.0	10	17.1	57	75.7	7	12.7	9	18.5	89	24.0	122	22.6
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	3	3.9	6	10.3	0	0.0	0	0.0	0	0.0	20	5.4	22	4.1
Coccidioidomycosis	1	1.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2
Creutzfeldt-Jakob Disease (CJD)	1	1.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2
Cryptosporidiosis	1	1.3	5	8.5	2	2.7	3	5.4	2	4.1	42	11.3	32	5.9
Cyclosporiasis	1	1.3	0	0.0	0	0.0	1	1.8	0	0.0	4	1.1	7	1.3
Escherichia coli, Shiga Toxin-Producing	5	6.5	2	3.4	1	1.3	4	7.2	3	6.2	14	3.8	36	6.7
O157:H7	0	0.0	0	0.0	1	1.3	0	0.0	1	2.1	2	0.5	2	0.4
Not O157:H7	2	2.6	0	0.0	0	0.0	1	1.8	0	0.0	3	0.8	12	2.2
Unknown Serotype	3	3.9	2	3.4	0	0.0	3	5.4	2	4.1	9	2.4	22	4.1
Giardiasis	5	6.5	1	1.7	3	4.0	2	3.6	1	2.1	19	5.1	19	3.5
Haemophilus influenzae, Invasive Disease	3	3.9	2	3.4	4	5.3	0	0.0	2	4.1	5	1.3	29	5.4
Hemolytic Uremic Syndrome (HUS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2
Hepatitis A	11	14.3	1	1.7	5	6.6	0	0.0	1	2.1	9	2.4	135	25.0
Legionellosis	6	7.8	2	3.4	1	1.3	0	0.0	3	6.2	23	6.2	47	8.7
Listeriosis	0	0.0	1	1.7	1	1.3	0	0.0	0	0.0	2	0.5	3	0.6
Meningitis, Aseptic	3	3.9	0	0.0	4	5.3	2	3.6	0	0.0	17	4.6	21	3.9
Meningitis, Other Bacterial*	1	1.3	0	0.0	2	2.7	3	5.4	0	0.0	1	0.3	3	0.6
Salmonella Paratyphi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonella Typhi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonellosis	14	18.3	8	13.7	11	14.6	4	7.2	11	22.6	44	11.9	64	11.8
Shigellosis	0	0.0	2	3.4	1	1.3	1	1.8	0	0.0	25	6.7	18	3.3
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.2
Streptococcal Disease, Group A, Invasive	6	7.8	2	3.4	2	2.7	0	0.0	1	2.1	16	4.3	38	7.0
Streptococcal Disease, Group B, in Newborn*	1	*	0	*	1	*	0	*	3	*	1	*	4	*
Streptococcal Toxic Shock Syndrome (STSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Toxic Shock Syndrome (TSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Vibriosis	1	1.3	2	3.4	0	0.0	0	0.0	0	0.0	3	0.8	2	0.4
Vibrio parahaemolyticus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other (Not Cholera)	1	1.3	2	3.4	0	0.0	0	0.0	0	0.0	3	0.8	2	0.4
Yersiniosis	2	2.6	1	1.7	1	1.3	0	0.0	0	0.0	3	0.8	9	1.7
SUBTOTAL	**75**	**97.8**	**45**	**76.9**	**96**	**127.5**	**27**	**48.9**	**36**	**74.1**	**337**	**90.9**	**615**	**113.7**

OUTBREAKS*														
Community*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	2	n/a	0	n/a
Foodborne*	0	n/a	0	n/a	0	n/a	2	n/a	0	n/a	2	n/a	2	n/a
Healthcare-Associated*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	7	n/a	6	n/a
Institutional*	2	n/a	0	n/a	1	n/a	0	n/a	0	n/a	10	n/a	0	n/a
Waterborne*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	1	n/a
Zoonotic*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	1	n/a	0	n/a
SUBTOTAL	**2**	**n/a**	**0**	**n/a**	**1**	**n/a**	**2**	**n/a**	**0**	**n/a**	**22**	**n/a**	**9**	**n/a**

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

	Ross		Sandusky		Scioto		Seneca		Shelby		Stark		Summit	
VACCINE-PREVENTABLE	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**
Influenza-Associated Hospitalization	80	104.3	46	78.6	76	100.9	48	87.0	40	82.3	437	117.9	567	104.8
Influenza-Associated Pediatric Mortality*	0	*	0	*	0	*	0	*	0	*	0	*	0	*
Measles	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3	0	0.0
Imported	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.3	0	0.0
Meningococcal Disease	0	0.0	1	1.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mumps	1	1.3	1	1.7	0	0.0	0	0.0	1	2.1	1	0.3	1	0.2
Pertussis	6	7.8	1	1.7	3	4.0	0	0.0	1	2.1	21	5.7	29	5.4
Streptococcus pneumoniae , Invasive Disease	15	19.6	3	5.1	6	8.0	6	10.9	2	4.1	34	9.2	52	9.6
Ages < 5 Years*	1	*	0	*	1	*	0	*	0	*	0	*	3	*
Drug Resistant, Ages 5+ Years*	3	*	1	*	0	*	2	*	0	*	10	*	16	*
Drug Susceptible, Ages 5+ Years*	11	*	2	*	5	*	4	*	2	*	24	*	33	*
Varicella	1	1.3	0	0.0	4	5.3	3	5.4	4	8.2	24	6.5	7	1.3
SUBTOTAL	**103**	**134.3**	**52**	**88.9**	**89**	**118.2**	**57**	**103.3**	**48**	**98.8**	**518**	**139.8**	**656**	**121.3**
ZOONOSES														
Babesiosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chikungunya Virus Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Dengue	1	1.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ehrlichiosis/Anaplasmosis	1	1.3	0	0.0	5	6.6	0	0.0	0	0.0	0	0.0	0	0.0
Anaplasma phagocytophilum *	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ehrlichia chaffeensis *	1	1.3	0	0.0	5	6.6	0	0.0	0	0.0	0	0.0	0	0.0
La Crosse Virus Disease*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Lyme Disease	4	5.2	1	1.7	10	13.3	3	5.4	0	0.0	18	4.9	8	1.5
Malaria	1	1.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.4
Q Fever	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Acute	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chronic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Rabies, Animal*	0	n/a	0	n/a	1	n/a	0	n/a	0	n/a	1	n/a	4	n/a
Spotted Fever Rickettsiosis*	4	5.2	0	0.0	4	5.3	0	0.0	0	0.0	1	0.3	1	0.2
West Nile Virus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SUBTOTAL	**11**	**14.3**	**1**	**1.7**	**20**	**25.2**	**3**	**5.4**	**0**	**0.0**	**20**	**5.1**	**15**	**2.0**
GRAND TOTAL	**191**	**246.5**	**98**	**167.5**	**206**	**270.9**	**89**	**157.7**	**84**	**172.9**	**897**	**235.8**	**1,295**	**237.0**
POPULATION	**76,666**		**58,518**		**75,314**		**55,178**		**48,590**		**370,606**		**541,013**	

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

.

GENERAL INFECTIOUS DISEASES	Trumbull		Tuscarawas		Union		Van Wert		Vinton		Warren		Washington	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Amebiasis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Botulism	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Infant*	0	*	0	*	0	*	0	*	0	*	0	*	0	*
Campylobacteriosis	20	10.1	10	10.9	16	27.1	6	21.2	8	61.1	45	19.2	53	88.5
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	17	8.6	2	2.2	0	0.0	1	3.5	0	0.0	4	1.7	0	0.0
Coccidioidomycosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.9	0	0.0
Creutzfeldt-Jakob Disease (CJD)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0
Cryptosporidiosis	9	4.5	3	3.3	5	8.5	1	3.5	1	7.6	6	2.6	3	5.0
Cyclosporiasis	0	0.0	0	0.0	2	3.4	2	7.1	0	0.0	6	2.6	0	0.0
Escherichia coli, Shiga Toxin-Producing	5	2.5	3	3.3	3	5.1	1	3.5	3	22.9	5	2.1	4	6.7
O157:H7	0	0.0	0	0.0	0	0.0	1	3.5	0	0.0	1	0.4	0	0.0
Not O157:H7	2	1.0	1	1.1	1	1.7	0	0.0	0	0.0	1	0.4	0	0.0
Unknown Serotype	3	1.5	2	2.2	2	3.4	0	0.0	3	22.9	3	1.3	4	6.7
Giardiasis	5	2.5	0	0.0	1	1.7	0	0.0	0	0.0	2	0.9	2	3.3
Haemophilus influenzae, Invasive Disease	9	4.5	1	1.1	1	1.7	0	0.0	0	0.0	8	3.4	0	0.0
Hemolytic Uremic Syndrome (HUS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hepatitis A	6	3.0	4	4.3	3	5.1	0	0.0	2	15.3	51	21.7	9	15.0
Legionellosis	12	6.1	6	6.5	1	1.7	3	10.6	0	0.0	7	3.0	0	0.0
Listeriosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	1.7
Meningitis, Aseptic	9	4.5	3	3.3	4	6.8	3	10.6	1	7.6	14	6.0	6	10.0
Meningitis, Other Bacterial*	1	0.5	0	0.0	0	0.0	0	0.0	0	0.0	3	1.3	1	1.7
Salmonella Paratyphi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonella Typhi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Salmonellosis	17	8.6	16	17.4	15	25.4	5	17.7	5	38.2	32	13.6	6	10.0
Shigellosis	1	0.5	1	1.1	1	1.7	0	0.0	1	7.6	1	0.4	0	0.0
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Streptococcal Disease, Group A, Invasive	13	6.6	2	2.2	1	1.7	3	10.6	2	15.3	7	3.0	1	1.7
Streptococcal Disease, Group B, in Newborn*	0	*	0	*	0	*	0	*	0	*	1	*	0	*
Streptococcal Toxic Shock Syndrome (STSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Toxic Shock Syndrome (TSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Vibriosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Vibrio parahaemolyticus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other (Not Cholera)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Yersiniosis	1	0.5	3	3.3	1	1.7	0	0.0	1	7.6	2	0.9	2	3.3
SUBTOTAL	**125**	**63.1**	**54**	**58.7**	**54**	**91.5**	**25**	**88.4**	**24**	**183.4**	**197**	**84.0**	**88**	**146.9**

OUTBREAKS*														
Community*	0	n/a	0	n/a	1	n/a	0	n/a	0	n/a	2	n/a	1	n/a
Foodborne*	1	n/a	1	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Healthcare-Associated*	0	n/a	0	n/a	1	n/a	0	n/a	0	n/a	2	n/a	0	n/a
Institutional*	0	n/a	0	n/a	5	n/a	1	n/a	0	n/a	1	n/a	0	n/a
Waterborne*	0	n/a	1	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
Zoonotic*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a
SUBTOTAL	**1**	**n/a**	**2**	**n/a**	**7**	**n/a**	**1**	**n/a**	**0**	**n/a**	**5**	**n/a**	**1**	**n/a**

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

	Trumbull		Tuscarawas		Union		Van Wert		Vinton		Warren		Washington	
VACCINE-PREVENTABLE	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**
Influenza-Associated Hospitalization	218	110.1	84	91.3	17	28.8	13	46.0	11	84.1	195	83.1	51	85.1
Influenza-Associated Pediatric Mortality*	0	*	0	*	0	*	0	*	0	*	1	*	0	*
Measles	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Imported	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Meningococcal Disease	0	0.0	0	0.0	0	0.0	0	0.0	1	7.6	0	0.0	0	0.0
Mumps	1	0.5	0	0.0	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0
Pertussis	2	1.0	15	16.3	2	3.4	1	3.5	0	0.0	55	23.4	0	0.0
Streptococcus pneumoniae , Invasive Disease	22	11.1	7	7.6	3	5.1	2	7.1	1	7.6	12	5.1	12	20.0
Ages < 5 Years*	2	*	0	*	0	*	0	*	0	*	0	*	0	*
Drug Resistant, Ages 5+ Years*	2	*	2	*	1	*	0	*	0	*	3	*	1	*
Drug Susceptible, Ages 5+ Years*	18	*	5	*	2	*	2	*	1	*	9	*	11	*
Varicella	4	2.0	8	8.7	16	27.1	3	10.6	0	0.0	5	2.1	0	0.0
SUBTOTAL	**247**	**124.8**	**114**	**123.9**	**38**	**64.4**	**19**	**67.2**	**13**	**99.4**	**269**	**114.7**	**63**	**105.2**
ZOONOSES														
Babesiosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chikungunya Virus Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.9	0	0.0
Dengue	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ehrlichiosis/Anaplasmosis	0	0.0	0	0.0	1	1.7	0	0.0	0	0.0	0	0.0	0	0.0
Anaplasma phagocytophilum *	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ehrlichia chaffeensis *	0	0.0	0	0.0	1	1.7	0	0.0	0	0.0	0	0.0	0	0.0
La Crosse Virus Disease*	1	0.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Lyme Disease	8	4.0	28	30.4	1	1.7	1	3.5	1	7.6	2	0.9	2	3.3
Malaria	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0
Q Fever	1	0.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Acute	1	0.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chronic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Rabies, Animal*	0	n/a	2	n/a	0	n/a	0	n/a	0	n/a	1	n/a	0	n/a
Spotted Fever Rickettsiosis*	0	0.0	0	0.0	0	0.0	0	0.0	1	7.6	0	0.0	0	0.0
West Nile Virus Infection	1	0.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SUBTOTAL	**11**	**5.6**	**30**	**30.4**	**2**	**3.4**	**1**	**3.5**	**2**	**15.3**	**6**	**2.1**	**2**	**3.3**
GRAND TOTAL	**384**	**193.5**	**200**	**213.1**	**101**	**159.4**	**46**	**159.2**	**39**	**298.1**	**477**	**200.8**	**154**	**255.4**
POPULATION	**197,974**		**91,987**		**58,988**		**28,275**		**13,085**		**234,602**		**59,911**	

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

GENERAL INFECTIOUS DISEASES	Wayne		Williams		Wood		Wyandot		Unknown		TOTAL	
	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate	N	Rate
Amebiasis	1	0.9	0	0.0	0	0.0	0	0.0	0	n/a	10	0.1
Botulism	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	6	0.1
Infant*	0	*	0	*	0	*	0	*	0	n/a	6	*
Campylobacteriosis	39	33.7	13	35.4	26	19.9	19	87.3	0	n/a	2,438	20.9
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)*	3	2.6	1	2.7	3	2.3	0	0.0	0	n/a	382	3.3
Coccidioidomycosis	0	0.0	0	0.0	1	0.8	0	0.0	0	n/a	19	0.2
Creutzfeldt-Jakob Disease (CJD)	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	20	0.2
Cryptosporidiosis	4	3.5	2	5.5	8	6.1	3	13.8	0	n/a	684	5.9
Cyclosporiasis	1	0.9	1	2.7	3	2.3	0	0.0	0	n/a	146	1.2
Escherichia coli, Shiga Toxin-Producing	12	10.4	1	2.7	6	4.6	1	4.6	0	n/a	591	5.1
O157:H7	3	2.6	1	2.7	0	0.0	0	0.0	0	n/a	74	0.6
Not O157:H7	4	3.5	0	0.0	0	0.0	0	0.0	0	n/a	168	1.4
Unknown Serotype	5	4.3	0	0.0	6	4.6	1	4.6	0	n/a	349	3.0
Giardiasis	1	0.9	3	8.2	0	0.0	0	0.0	0	n/a	451	3.9
Haemophilus influenzae, Invasive Disease	8	6.9	2	5.5	1	0.8	1	4.6	0	n/a	353	3.0
Hemolytic Uremic Syndrome (HUS)	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	5	0.0
Hepatitis A	30	25.9	0	0.0	0	0.0	3	13.8	0	n/a	1,624	13.9
Legionellosis	13	11.2	0	0.0	3	2.3	0	0.0	0	n/a	803	6.9
Listeriosis	1	0.9	0	0.0	1	0.8	0	0.0	0	n/a	30	0.3
Meningitis, Aseptic	8	6.9	1	2.7	8	6.1	2	9.2	0	n/a	646	5.5
Meningitis, Other Bacterial*	1	0.9	2	5.5	2	1.5	0	0.0	0	n/a	148	1.3
Salmonella Paratyphi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	3	0.0
Salmonella Typhi Infection*	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	6	0.1
Salmonellosis	20	17.3	9	24.5	24	18.3	7	32.2	0	n/a	1,600	13.7
Shigellosis	7	6.0	0	0.0	2	1.5	1	4.6	0	n/a	425	3.6
Staphylococcus aureus, Intermediate Resistance to Vancomycin (VISA)	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	5	0.0
Streptococcal Disease, Group A, Invasive	4	3.5	2	5.5	8	6.1	1	4.6	0	n/a	780	6.7
Streptococcal Disease, Group B, in Newborn*	1	*	0	*	0	*	0	*	0	n/a	70	*
Streptococcal Toxic Shock Syndrome (STSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	13	0.1
Toxic Shock Syndrome (TSS)	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	2	0.0
Vibriosis	0	0.0	0	0.0	1	0.8	0	0.0	0	n/a	60	0.5
Vibrio parahaemolyticus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	10	0.1
Other (Not Cholera)	0	0.0	0	0.0	1	0.8	0	0.0	0	n/a	50	0.4
Yersiniosis	2	1.7	1	2.7	3	2.3	0	0.0	0	n/a	112	1.0
SUBTOTAL	**156**	**134.8**	**38**	**103.6**	**100**	**76.4**	**38**	**174.5**	**0**	**n/a**	**11,432**	**97.8**

OUTBREAKS*												
Community*	0	n/a	0	n/a	1	n/a	0	n/a	0	n/a	25	n/a
Foodborne*	1	n/a	0	n/a	0	n/a	0	n/a	0	n/a	57	n/a
Healthcare-Associated*	0	n/a	3	n/a	4	n/a	1	n/a	0	n/a	147	n/a
Institutional*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	187	n/a
Waterborne*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	9	n/a
Zoonotic*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	5	n/a
SUBTOTAL	**1**	**n/a**	**3**	**n/a**	**5**	**n/a**	**1**	**n/a**	**0**	**n/a**	**430**	**n/a**

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY COUNTY OF RESIDENCE, OHIO, 2019

	Wayne		Williams		Wood		Wyandot		Unknown		TOTAL	
VACCINE-PREVENTABLE	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**	**N**	**Rate**
Influenza-Associated Hospitalization	126	108.9	28	76.3	109	83.3	27	124.0	0	n/a	10,886	93.1
Influenza-Associated Pediatric Mortality*	0	*	0	*	0	*	0	*	0	n/a	6	*
Measles	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	1	0.0
Imported	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	1	0.0
Meningococcal Disease	0	0.0	1	2.7	0	0.0	0	0.0	0	n/a	13	0.1
Mumps	1	0.9	0	0.0	0	0.0	0	0.0	0	n/a	69	0.6
Pertussis	14	12.1	0	0.0	3	2.3	0	0.0	0	n/a	956	8.2
Streptococcus pneumoniae , Invasive Disease	11	9.5	4	10.9	10	7.6	4	18.4	0	n/a	1,273	10.9
Ages < 5 Years*	0	*	0	*	0	*	0	*	0	n/a	61	*
Drug Resistant, Ages 5+ Years*	2	*	0	*	2	*	0	*	0	n/a	338	*
Drug Susceptible, Ages 5+ Years*	9	*	4	*	8	*	4	*	0	n/a	874	*
Varicella	8	6.9	2	5.5	3	2.3	2	9.2	0	n/a	413	3.5
SUBTOTAL	**160**	**138.3**	**35**	**95.4**	**125**	**95.6**	**33**	**151.6**	**0**	**n/a**	**13,617**	**116.5**
ZOONOSES												
Babesiosis	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	4	0.0
Chikungunya Virus Infection*	1	0.9	0	0.0	0	0.0	0	0.0	0	n/a	14	0.1
Dengue	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	12	0.1
Ehrlichiosis/Anaplasmosis	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	28	0.2
Anaplasma phagocytophilum *	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	5	0.0
Ehrlichia chaffeensis *	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	23	0.2
La Crosse Virus Disease*	3	2.6	0	0.0	0	0.0	0	0.0	0	n/a	26	0.2
Lyme Disease	3	2.6	0	0.0	2	1.5	0	0.0	0	n/a	460	3.9
Malaria	0	0.0	0	0.0	1	0.8	0	0.0	0	n/a	59	0.5
Q Fever	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	4	0.0
Acute	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	3	0.0
Chronic	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	1	0.0
Rabies, Animal*	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	42	n/a
Spotted Fever Rickettsiosis*	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	49	0.4
West Nile Virus Infection	0	0.0	0	0.0	0	0.0	0	0.0	0	n/a	3	0.0
SUBTOTAL	**7**	**6.0**	**0**	**0.0**	**3**	**2.3**	**0**	**0.0**	**0**	**n/a**	**701**	**5.6**
GRAND TOTAL	**324**	**279.1**	**76**	**199.0**	**233**	**174.3**	**72**	**326.1**	**0**	**n/a**	**26,180**	**219.9**
POPULATION	**115,710**		**36,692**		**130,817**		**21,772**		**0**		**11,689,100**	

N = number of cases reported.
Rates use 2019 U.S. Census estimates and are per 100,000 population.
n/a = not applicable.
* Please see Technical Notes (pages 96-99).

ESCHERICHIA COLI , SHIGA TOXIN-PRODUCING SEROGROUPS BY YEAR OF ONSET, OHIO, 2015-2019

SEROGROUP	2015	2016	2017	2018	2019
O1	0	1	1	0	0
O5	3	3	3	0	1
O7	0	0	0	0	1
O8	0	2	2	0	1
O15	0	0	1	0	0
O22	0	1	0	0	0
O23	0	0	1	0	0
O25	0	0	0	1	0
O26*	32	30	28	25	26
O33	0	0	0	1	0
O39	1	0	0	0	0
O45*	3	8	6	5	5
O52	0	0	0	0	1
O55	0	1	0	0	1
O61	1	0	0	0	0
O69	0	1	0	0	1
O71	9	2	4	0	1
O76	2	1	1	0	1
O77	1	1	1	0	0
O79	0	2	0	0	1
O80	1	1	0	0	0
O84	0	2	0	0	2
O91	3	1	3	0	1
O93	0	1	0	0	0
O100	0	1	0	0	0
O103*	35	49	43	47	66
O111*	13	21	29	35	40
O113	0	0	3	0	0
O115	0	0	0	0	1
O117	0	0	1	0	0
O118	8	4	7	2	0
O118/O151	0	0	0	0	4
O119	0	2	0	0	0
O121*	2	6	5	7	3
O123/O186	0	0	0	0	1
O124	0	1	2	0	0
O128	1	0	0	0	0
O136	0	1	0	0	0
O141	0	1	0	0	0
O145*	6	2	5	4	4
O146	0	0	3	0	1
O153	0	0	1	0	0
O156	0	0	2	0	0
O157	105	77	60	68	74
O158	0	0	1	0	0
O159	0	0	0	1	0
O165	1	1	0	0	1
O166	1	0	0	0	0
O168	0	1	0	0	0
O174	0	0	1	0	0
O177	0	1	0	0	0
O178	1	0	0	0	0
O181	2	0	0	0	0
O182	0	0	1	0	0
O186	5	4	2	7	0
O187	0	0	0	0	1
O Rough	1	0	3	0	1
O Undetermined	3	6	6	0	2
Unknown	25	27	61	334	349
TOTAL	**265**	**263**	**287**	**537**	**591**

* ODH Laboratory began testing the top six non-O157 STEC isolates in 2011; prior to 2011, all non-O157 isolates were sent to CDC for typing.

HAEMOPHILUS INFLUENZAE , INVASIVE DISEASE SEROTYPES IN CHILDREN <5 YEARS OF AGE BY YEAR OF ONSET, OHIO, 2015-2019

SEROTYPE	2015	2016	2017	2018	2019
Type A	1	3	6	5	9
Type B	2	2	2	4	3
Type C	0	0	0	0	0
Type E	0	0	1	2	1
Type F	2	2	1	2	2
Non-Typeable	12	12	17	11	14
Unknown	0	1	2	0	4
TOTAL	**17**	**20**	**29**	**24**	**33**

MENINGOCOCCAL DISEASE SEROGROUPS BY YEAR OF ONSET, OHIO, 2015-2019

SEROGROUP	2015	2016	2017	2018	2019
Group A	0	0	0	0	0
Group B	13	6	8	5	6
Group C	2	0	1	1	3
Group W	0	0	0	0	1
Group Y	1	2	2	1	2
Not Groupable	2	0	1	0	0
Unknown	0	0	0	0	1
TOTAL	**18**	**8**	**12**	**7**	**13**

SALMONELLA SEROTYPES BY YEAR OF ONSET, OHIO, 2015-2019

SEROTYPE	2015	2016	2017	2018	2019
Abony	0	0	1	1	2
Adelaide	0	0	2	6	3
Agbeni	9	15	26	32	28
Agona	5	10	12	15	14
Alachua	0	0	0	1	0
Albany	0	0	0	1	1
Albert	2	0	0	0	0
Altona	1	0	0	0	0
Anatum	4	10	5	5	13
Antsalova	0	0	1	0	0
Apapa	1	0	0	3	0
Arechavaleta	0	0	0	1	0
Baildon	6	2	2	1	0
Bareilly	10	6	20	19	7
Barranquilla	0	0	1	0	0
Benin	0	0	1	0	0
Bergen	0	0	0	0	1
Berta	6	22	11	20	12
Blockley	0	0	1	2	0
Bonariensis	0	1	0	1	0
Bongori	2	0	0	1	0
Bonn	0	0	0	1	0
Bovis-morbificans	9	9	6	5	8
Braenderup	24	40	61	38	73
Brandenburg	1	2	2	2	3
Bredeney	0	1	1	1	0
Buzu	0	1	0	0	0
Cannstatt	0	0	1	0	1
Carrau	0	0	0	0	50
Cerro	0	0	3	1	2
Chailey	3	0	0	0	0
Chandans	0	0	1	0	0
Charity	0	0	0	1	0
Chester	3	0	5	1	1
Choleraesuis	0	1	0	0	0
Coeln	0	0	0	0	1
Corvallis	0	2	2	0	1
Cotham	3	1	2	2	2
Cubana	0	0	2	3	3
Derby	0	4	2	6	2
Dublin	11	11	6	7	14
Durban	0	1	0	0	0
Ealing	1	0	1	0	0
Eastbourne	0	4	1	0	4
Enteritidis	397	412	328	301	304
Fluntern	0	0	0	1	3
Gaminara	2	3	2	2	0
Gatuni	0	0	1	0	0
Give	1	2	2	3	1
Glostrup	0	1	1	1	0
Goldcoast	0	0	1	0	0
Grumpensis	0	0	1	0	0
Guinea	0	1	1	0	4
Hadar	6	2	24	9	4
Haifa	0	2	1	0	0
Hartford	15	37	31	27	32
Hato	0	2	0	0	0
Havana	0	1	1	1	3
Heidelberg	44	35	16	14	7
Holcomb	1	1	1	2	2
Hvittingfoss	1	2	1	8	3
Indiana	1	1	0	1	0
Infantis	33	40	35	60	49
Inverness	0	0	1	0	0
Irumu	1	0	0	0	0
Isangi	2	0	0	0	0
Javiana	35	40	28	37	46

* Reported as *Salmonella* Paratyphi Infection beginning in 2019.
** Reported as *Salmonella* Typhi Infection beginning in 2019. Prior to 2019, reported as Typhoid Fever.

SALMONELLA SEROTYPES BY YEAR OF ONSET, OHIO, 2015-2019

SEROTYPE	2015	2016	2017	2018	2019
Johannesburg	2	1	2	5	4
Kentucky	6	0	2	6	4
Kiambu	1	2	0	1	1
Kintambo	2	0	0	1	2
Kisarawe	0	0	0	1	1
Kottbus	1	0	0	0	1
Larochelle	0	0	1	0	0
Legon	1	0	0	0	0
Lexington	0	0	0	0	1
Litchfield	6	4	15	10	10
Loma Linda	0	1	0	0	1
Lome	0	1	0	0	1
London	0	2	2	1	3
Madelia	1	0	0	0	0
Manhattan	1	1	1	2	10
Matadi	0	1	0	0	0
Mbandaka	2	15	8	8	7
Meleagridis	0	0	0	0	1
Miami	2	2	2	9	5
Michigan	0	0	0	1	0
Mikawasima	1	0	0	0	0
Minnesota	1	0	0	0	0
Mississippi	3	1	1	2	7
Monschaui	2	0	2	4	2
Montevideo	20	29	28	21	10
Muenchen	27	24	13	16	15
Muenster	4	9	7	2	3
Napoli	4	2	1	2	1
Newport	60	98	87	88	98
Norwich	9	2	0	5	1
Nottingham	1	0	0	0	0
Nyanza	1	0	0	0	0
Offa	0	0	0	1	0
Ohio	2	1	0	3	1
Okatie	0	1	1	0	2
Onderstepoort	1	0	0	0	0
Oranienburg	39	49	34	33	36
Oslo	2	3	2	0	2
Pakistan	1	0	0	0	0
Panama	5	0	4	6	8
Paratyphi A*	1	1	3	1	3
Paratyphi B*	0	0	2	0	0
Paratyphi B, var L - Tartrate +	17	12	9	5	15
Pensacola	0	0	0	1	0
Pomona	3	0	1	4	1
Poona	8	7	6	7	8
Putten	0	0	0	0	1
Reading	4	2	1	9	7
Richmond	0	0	0	0	1
Rissen	1	0	0	1	1
Rubislaw	2	1	1	0	0
Saarbruecken	1	0	0	0	0
Saint Paul	13	18	26	35	22
San Diego	5	3	3	5	5
Scarborough	0	0	0	0	1
Schwartzengrund	9	10	5	3	3
Senftenberg	3	1	2	3	1
Shubra	1	0	1	0	0
Singapore	0	2	0	1	1
Southbank	0	0	1	0	0
Stanley	14	3	4	7	10
Takoradi	1	0	0	0	0
Tallahassee	1	0	0	0	0
Teddington	1	0	0	0	0
Telelkebir	2	3	2	1	1
Tennessee	1	7	0	0	0
Thompson	18	38	29	30	24

* Reported as *Salmonella* Paratyphi Infection beginning in 2019.
** Reported as *Salmonella* Typhi Infection beginning in 2019. Prior to 2019, reported as Typhoid Fever.

SALMONELLA SEROTYPES BY YEAR OF ONSET, OHIO, 2015-2019

SEROTYPE	2015	2016	2017	2018	2019
Toucra	0	1	0	0	0
Tudu	1	0	0	0	0
Typhi**	8	10	26	6	6
Typhimurium	194	195	145	151	130
Typhimurium, var Copenhagen	0	1	0	1	0
Uganda	1	4	2	2	4
Urbana	2	1	1	1	3
Virchow	3	6	2	5	1
Waycross	1	0	0	0	0
Weltevreden	4	2	4	3	9
Wien	1	0	1	0	0
Woodinville	0	0	1	0	1
Worthington	1	3	4	1	3
(I) 1,3,19:Non-motile	0	0	1	0	0
(I) 4,5,12:b:-*	3	13	1	0	0
(I) 4,5,12:b:-, var L - Tartrate +	21	21	22	49	57
(I) 4,5,12:i:-	85	82	74	80	66
(I) 4,5,12:Non-motile	1	0	0	0	0
(I) 4:i:-	0	0	1	0	0
(I) 6,7:Non-motile	1	0	0	0	0
(I) 6,7:k:-	0	0	0	0	1
(I) 6,8:Non-motile	1	0	0	0	0
(I) 9,12:Non-motile	1	1	0	0	0
(I) 9,12:l,z28:-	0	0	0	0	1
(I) 16:l,v:-	0	0	1	0	0
(I) 45:d:-	0	0	0	1	0
(I) 47:b:-	1	0	0	0	0
(I) Rough Os:e,h:e,n,z15	0	1	0	0	0
(I) Rough Os:f,g:-	0	0	0	1	0
(I) Rough Os:g,m,s:-	0	0	0	0	1
(I) Rough Os:m,t:-	1	1	0	0	0
(I) Rough Os:r:1,2	0	0	0	0	1
(I) Rough Os:y:1,7	0	0	0	0	1
(I) Rough Os:Non-motile	1	0	0	1	0
(I) O Undetermined:r:1,5	0	0	0	1	0
(I) O Undetermined:y:1,7	0	0	0	0	1
(II) 42:r:-	0	0	0	1	0
(II) 50:b:z6	0	0	0	1	0
(II) 58:l,z13,z28:z6	0	1	2	1	0
(IIIa) 13,23:z4,z23:-	0	1	0	0	0
(IIIa) 35:z29:-	0	0	0	1	0
(IIIa) 41:z4,z23:-	0	0	0	1	0
(IIIa) 50:z4,z23:-	0	1	0	0	0
(IIIa) 56:z4:-	0	0	1	0	0
(IIIb) 16:z10:e,n,x,z15	0	0	0	1	0
(IIIb) 35:k:e,n,x,z15	0	0	0	1	0
(IIIb) 47:k:z53	1	0	0	0	0
(IIIb) 48:i:z	0	0	2	0	2
(IIIb) 48:k:z35	0	0	0	0	1
(IIIb) 48:l,v:1,5,7	0	0	0	1	0
(IIIb) 48:l,v,z13:1,5,7	0	0	0	0	1
(IIIb) 48:z52:z	2	1	0	0	0
(IIIb) 50:k:e,n,x	1	0	0	0	0
(IIIb) 50:k:z	0	0	1	0	0
(IIIb) 50:r:z	1	0	0	0	0
(IIIb) 53:z10:z	0	0	0	1	0
(IIIb) 60:i:e,n,x,z15	0	1	0	0	0
(IIIb) 60:r:e,n,x,z15	1	1	2	1	1
(IIIb) 60:z52:z53	0	1	0	0	1
(IIIb) 61:-:1,5,7	0	1	0	0	0
(IIIb) 61:c:-	0	0	0	0	1
(IIIb) 61:c:z35	1	0	0	0	0
(IIIb) 61:i:z53	0	0	1	0	0
(IIIb) 61:l,v,z13:1,5,7	0	1	0	0	0
(IIIb) 61:z52:z53	1	0	0	0	1
(IIIb) Rough Os:k:-	0	0	1	0	0
(IIIb) Rough Os:k:z35	0	1	0	0	0

* Reported as *Salmonella* Paratyphi Infection beginning in 2019.
** Reported as *Salmonella* Typhi Infection beginning in 2019. Prior to 2019, reported as Typhoid Fever.

SALMONELLA SEROTYPES BY YEAR OF ONSET, OHIO, 2015-2019

SEROTYPE	2015	2016	2017	2018	2019
(IIIb) Rough Os:l,v,z13:z35	0	0	0	0	1
(IIIb) Rough Os:Undetermined	0	0	1	0	0
(IIIb) Rough Os:Non-motile	0	0	0	1	0
(IV) 6,7:z4,z24:-	0	0	0	1	0
(IV) 40:z4,z24:-	0	0	1	0	1
(IV) 44:z4,z23:-	2	1	0	2	4
(IV) 45:g,z51:-	0	2	0	0	0
(IV) 48:g,z51:- (Marina)	0	0	1	3	0
(IV) 50:g,z51:- (Wassenaar)	1	0	3	1	1
(V) 48:z65:-	0	0	0	0	1
Rough Os:f,g:-	0	1	0	0	0
Rough Os:g,m,s:-	0	0	1	0	0
Rough Os:k:-	0	0	0	1	0
Rough Os:m,t:-	0	1	0	0	0
Rough Os:r:1,5	0	0	1	0	0
Rough Os:Non-motile	1	0	0	0	0
SUBTOTAL	**1,298**	**1,439**	**1,268**	**1,307**	**1,349**
SEROGROUP					
Group A	1	0	0	0	0
Group B	4	1	1	2	3
Group C	0	5	2	2	2
Group D	1	3	3	4	5
Group E	0	0	1	0	0
Group G	0	1	0	0	0
Group H	0	1	0	0	0
SUBTOTAL	**6**	**11**	**7**	**8**	**10**
UNGROUPED, UNTYPED	77	88	141	198	250
GRAND TOTAL	**1,381**	**1,538**	**1,416**	**1,513**	**1,609**

* Reported as *Salmonella* Paratyphi Infection beginning in 2019.
** Reported as *Salmonella* Typhi Infection beginning in 2019. Prior to 2019, reported as Typhoid Fever.

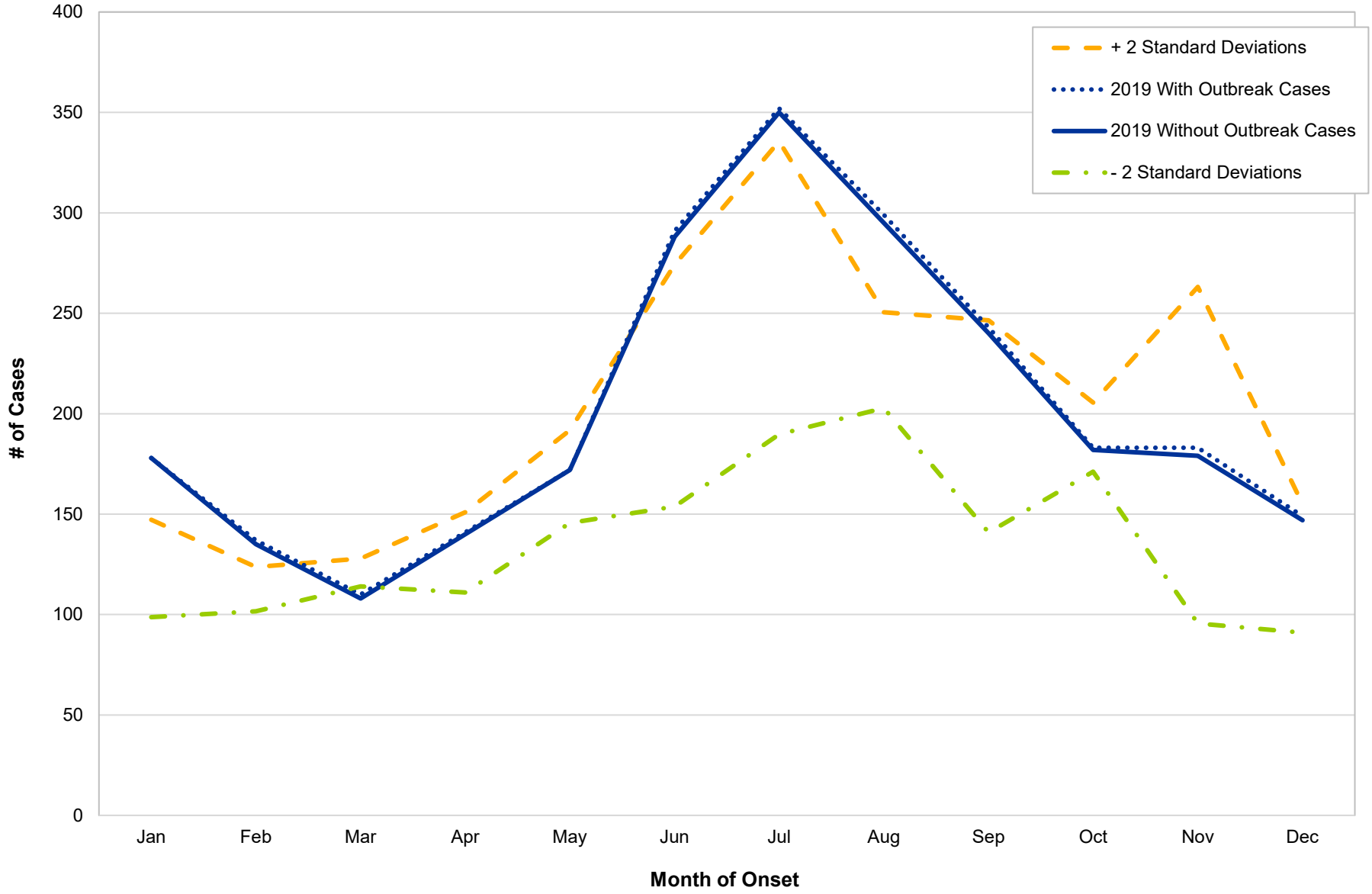
GRAPHS OF SELECTED NOTIFIABLE DISEASE INCIDENCE

Disease incidence from 2019 is graphically presented to demonstrate general trends in surveillance data for selected Ohio reportable infectious diseases, including any statistically significant changes in the incidence observed. The trend graphs compare disease incidence from 2019 (i.e., observed cases) to baseline disease incidence (i.e., expected cases) by month. Baseline disease incidence was determined by calculating the average disease incidence, excluding outbreak- and cluster-associated cases, throughout the previous three years, 2016-2018. Statistically significant changes in incidence are demonstrated by graphing two standard deviations above and below the average baseline disease incidence. A statistically significant difference in 2019 disease incidence compared with baseline disease incidence suggests the difference is unlikely to have occurred by chance.

General surveillance trends are graphed statewide. The 2019 data represent confirmed and probable cases of selected reportable diseases. In many instances, two trend lines can be seen graphed for 2019 incidence data: one for all cases, including those linked to a known outbreak or cluster, and one for cases not linked to a known outbreak or cluster. It should be noted that not every graph will include a trend line for cases linked to a known outbreak or cluster as not all cases are outbreak- or cluster-associated. For statistical reliability/stability purposes, only diseases for which 10 or more cases were reported in a given month are included in the statewide trends.

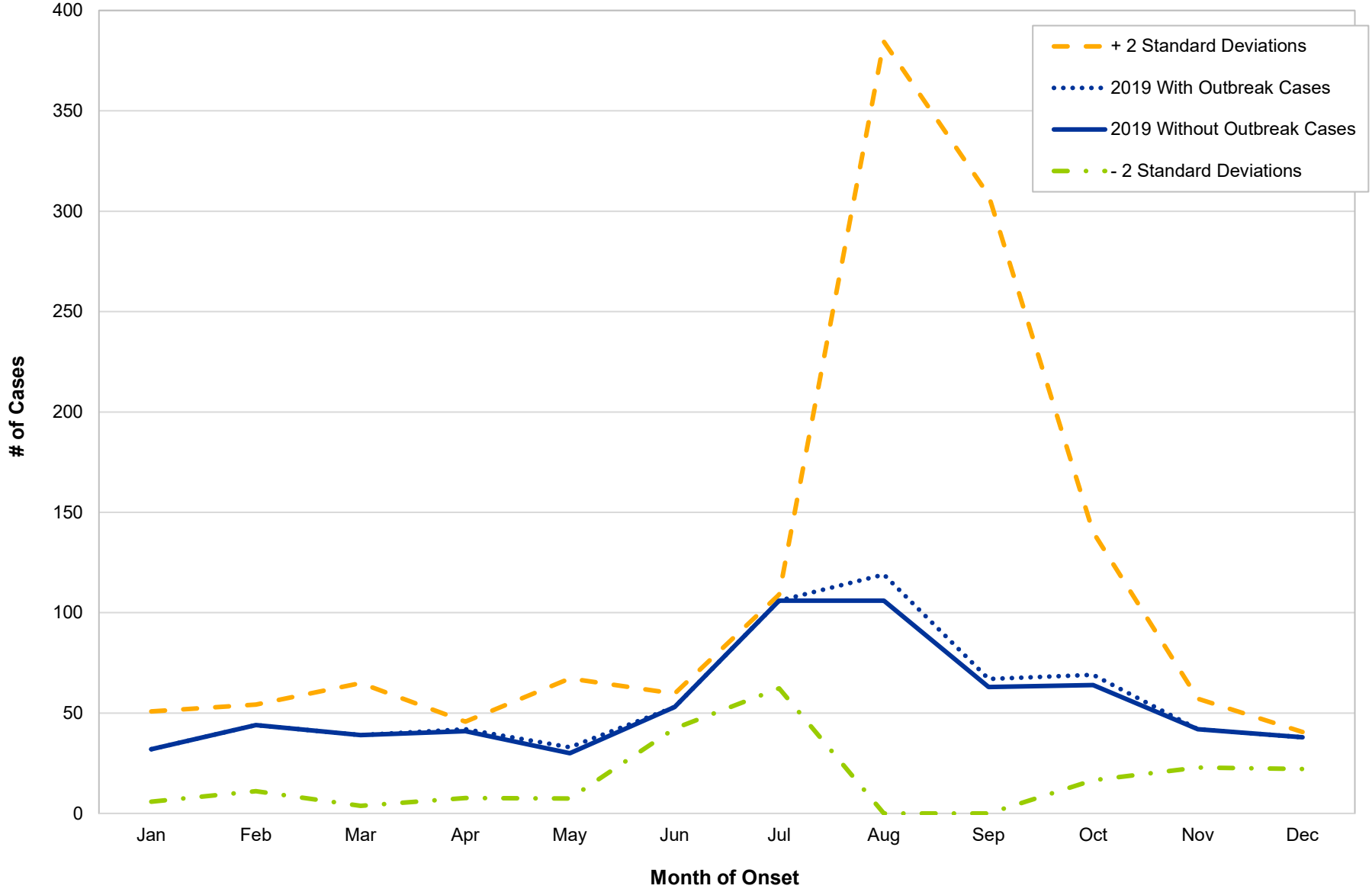
Disease data for 2019 and data used in the calculation of the baseline (2016-2018) average are finalized. All data are by month and year of illness onset. The source of the data is the Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Campylobacteriosis



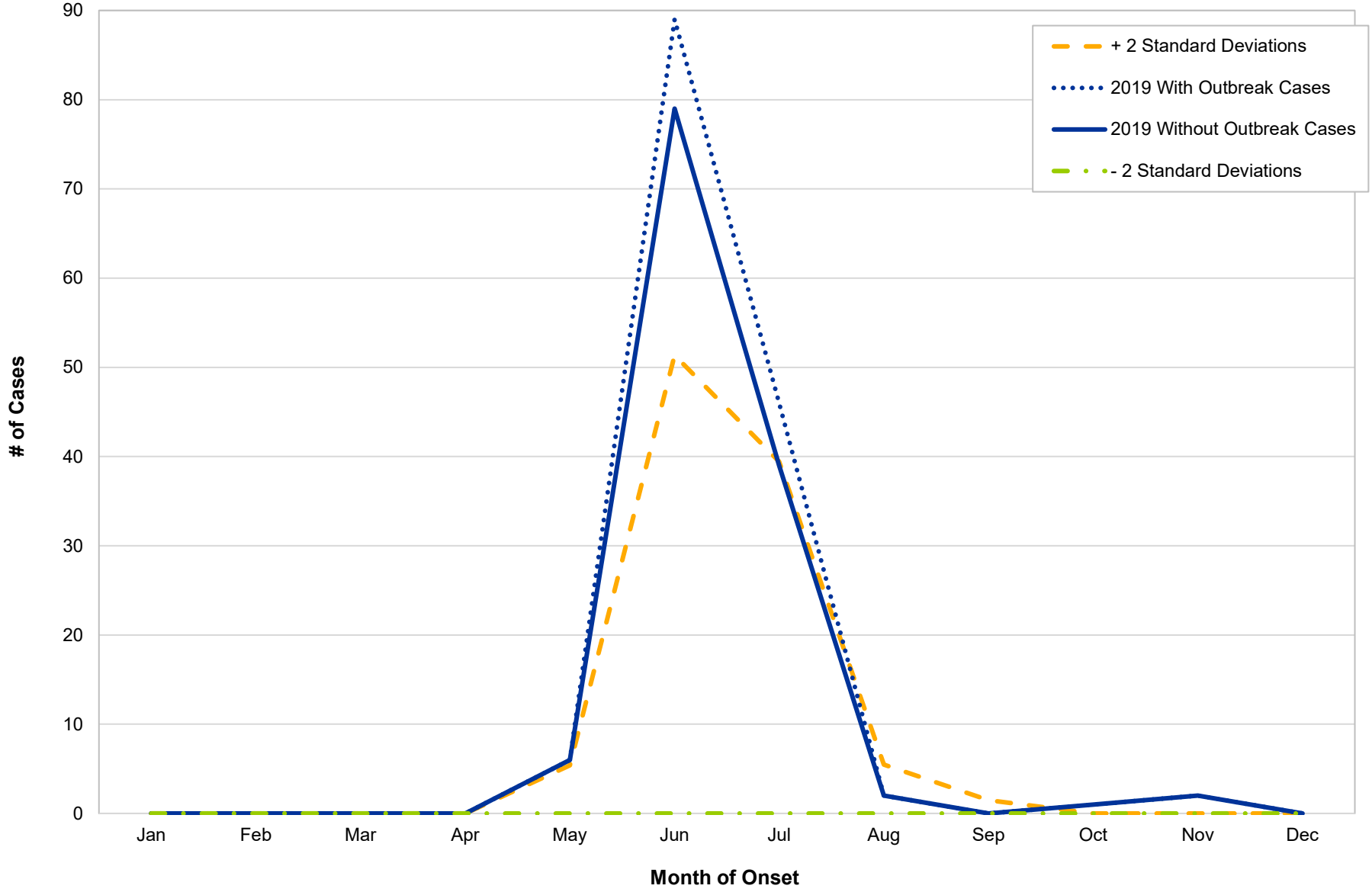
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Cryptosporidiosis



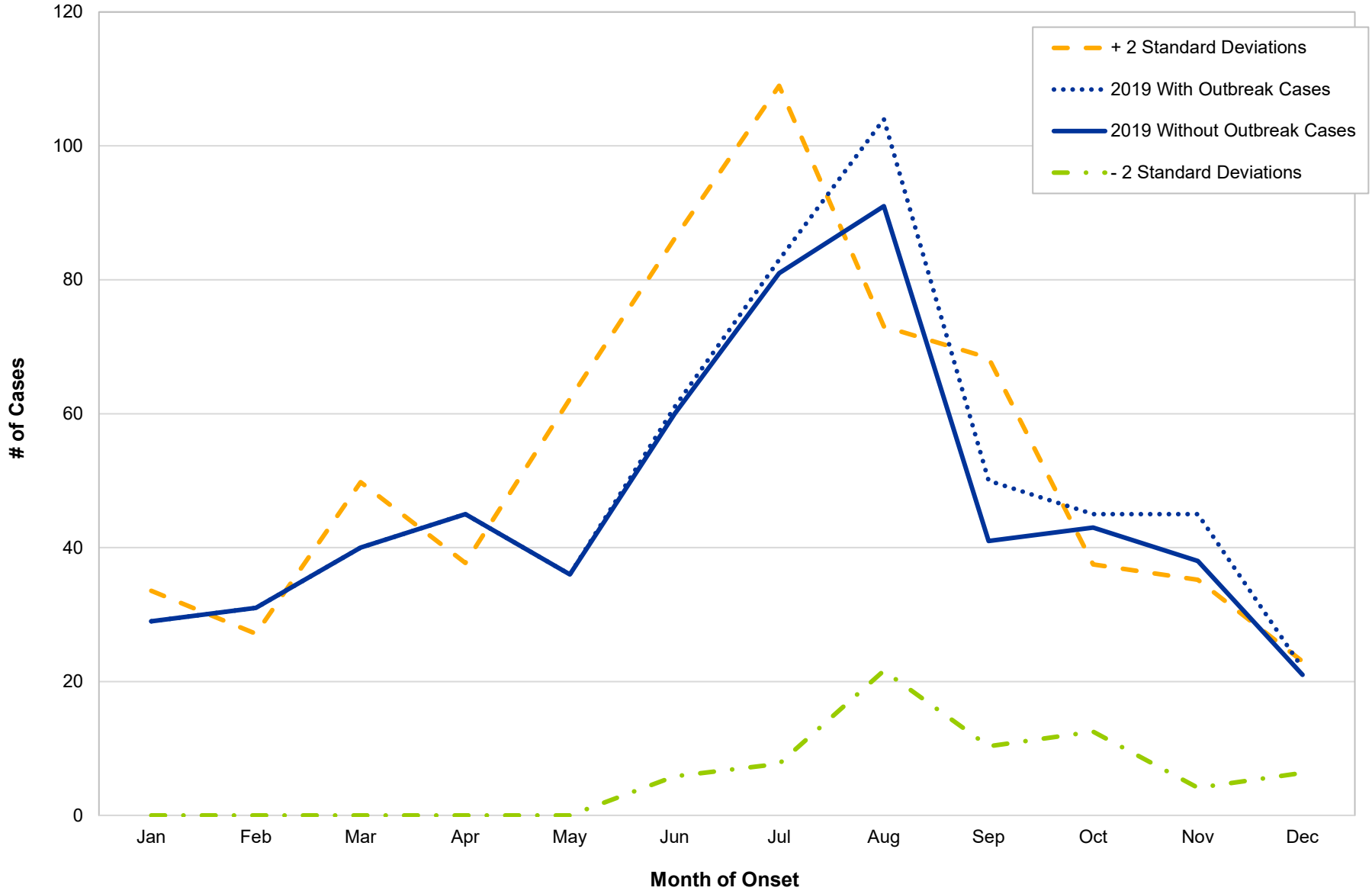
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Cyclosporiasis



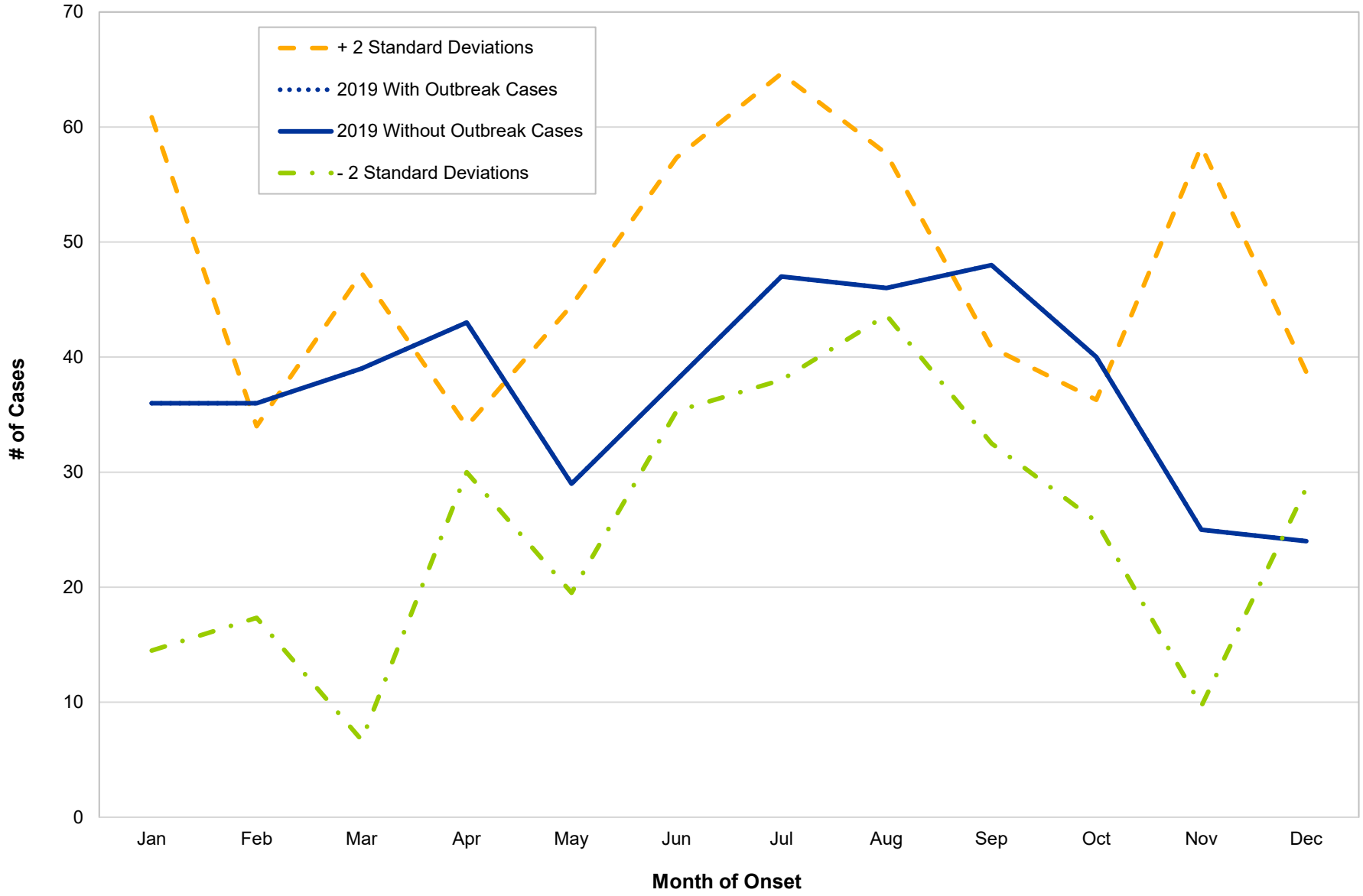
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Escherichia coli, Shiga Toxin-Producing



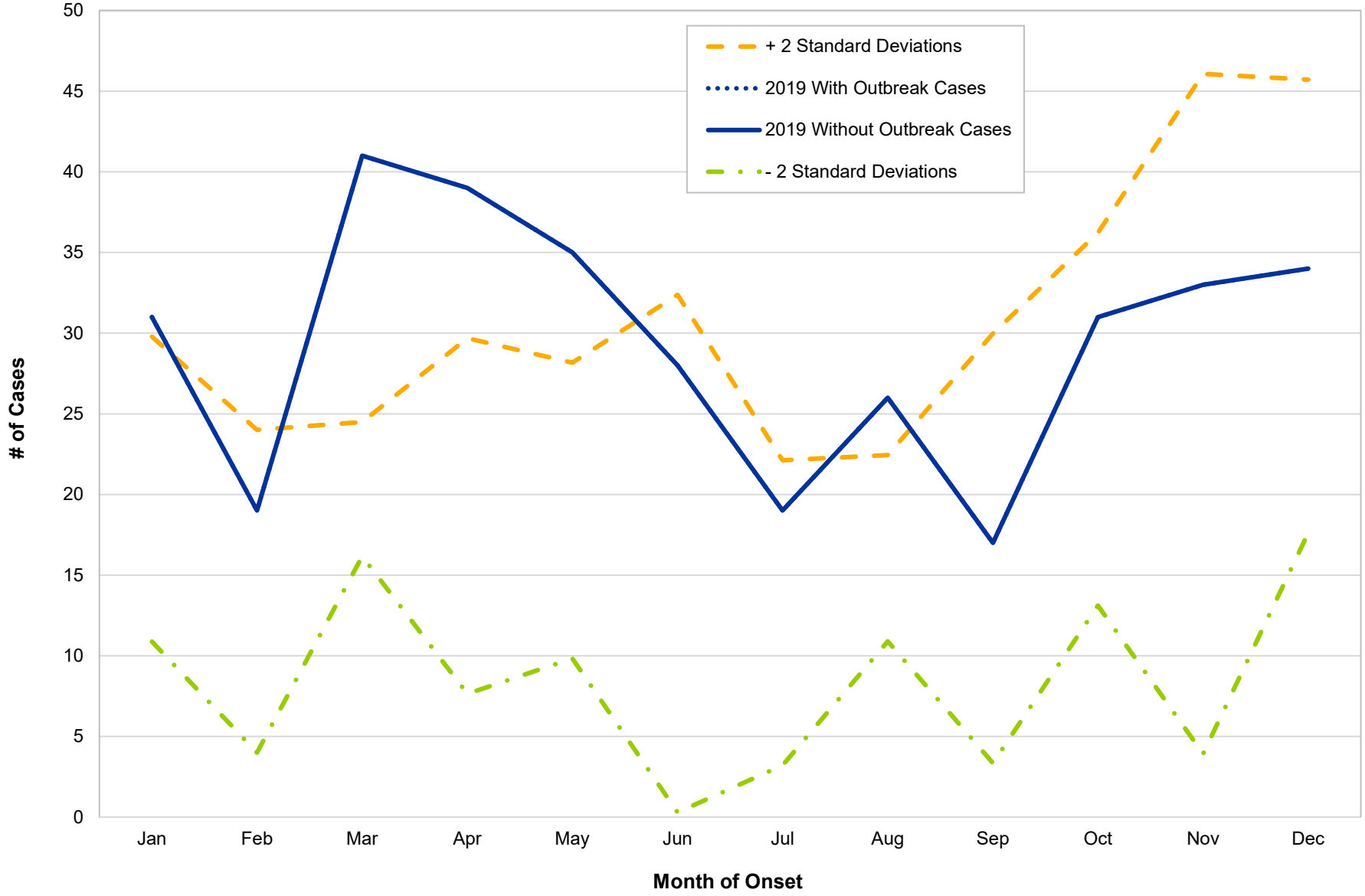
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Giardiasis



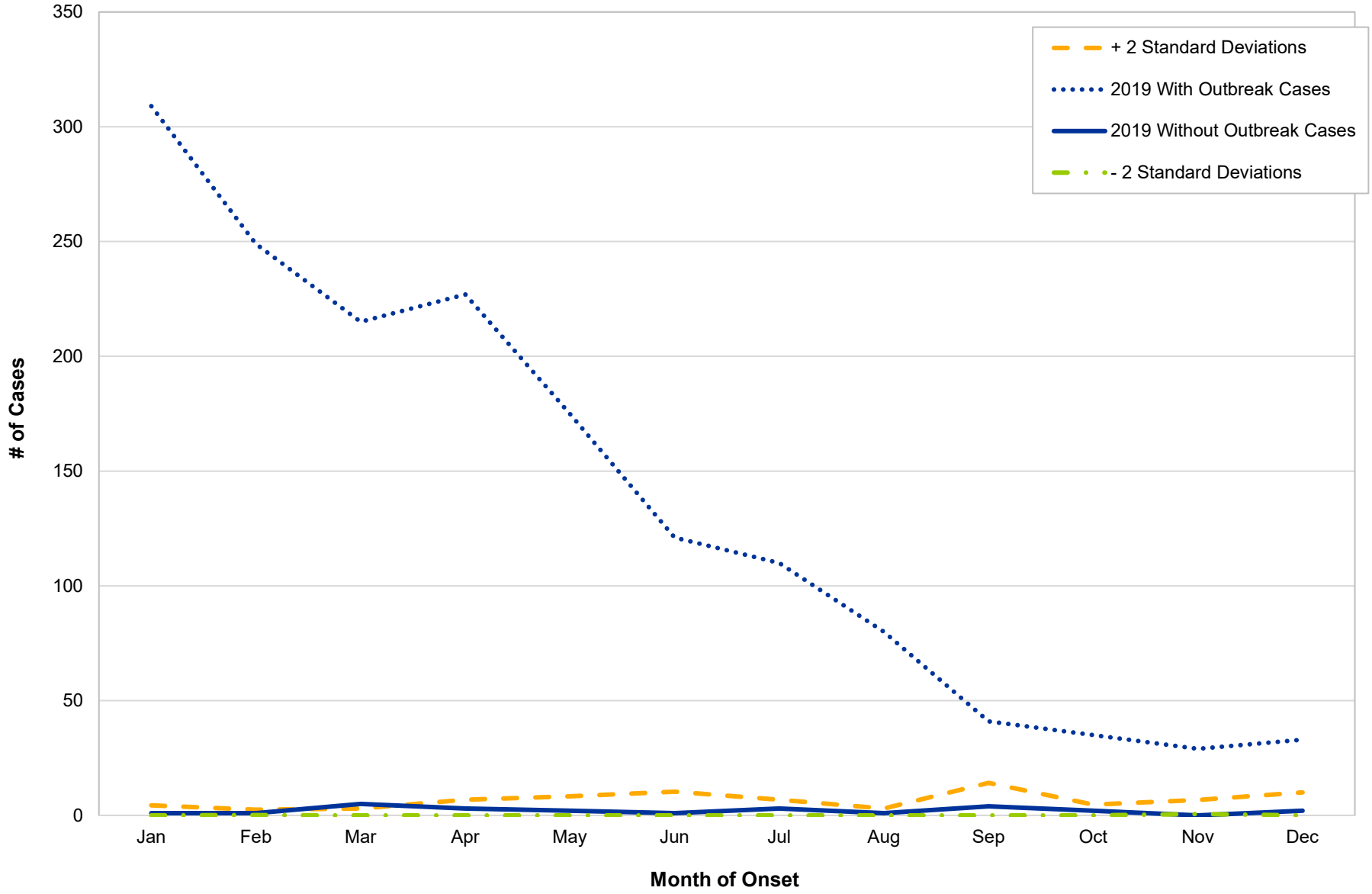
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Haemophilus influenzae, Invasive Disease



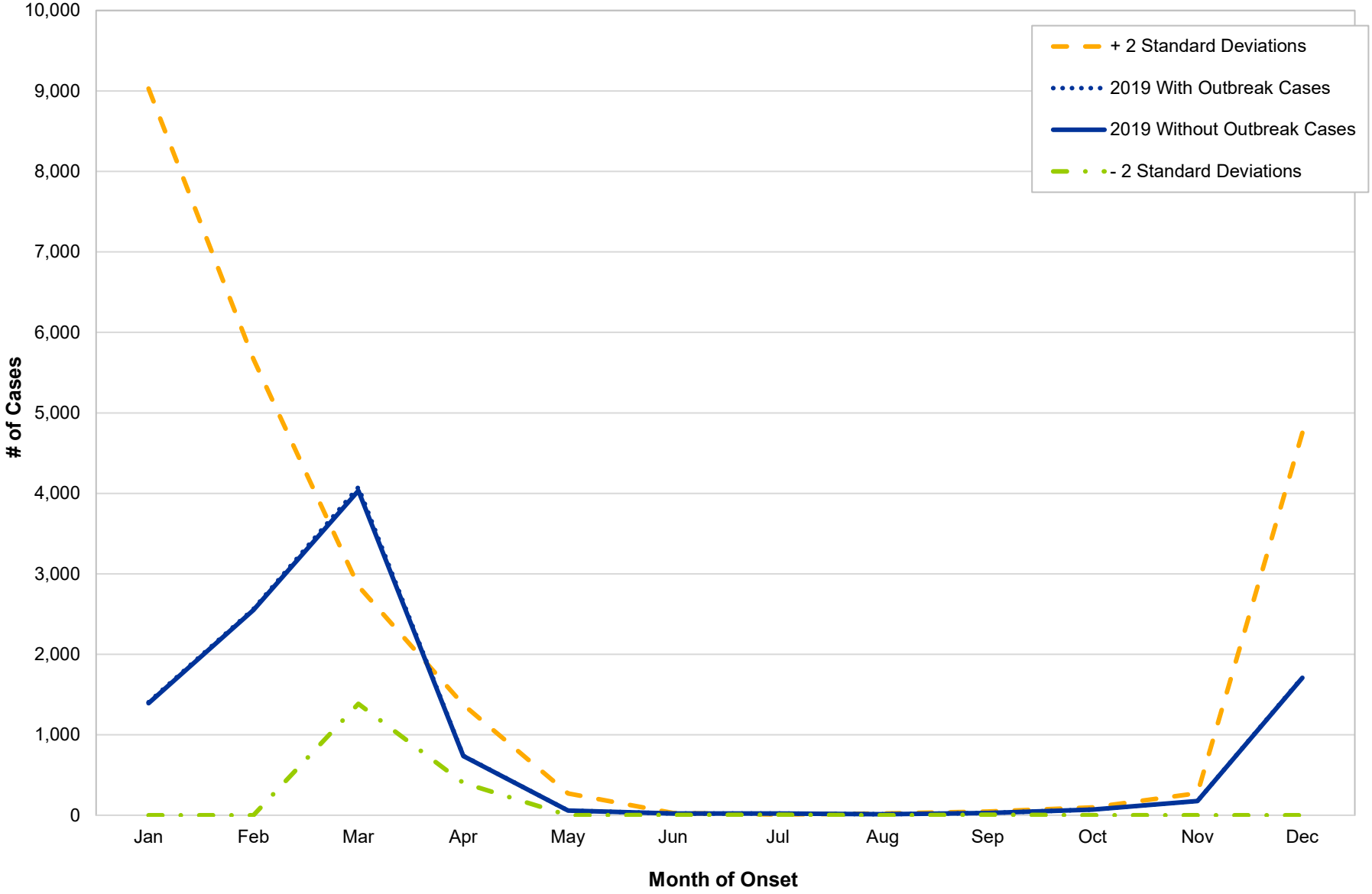
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Hepatitis A



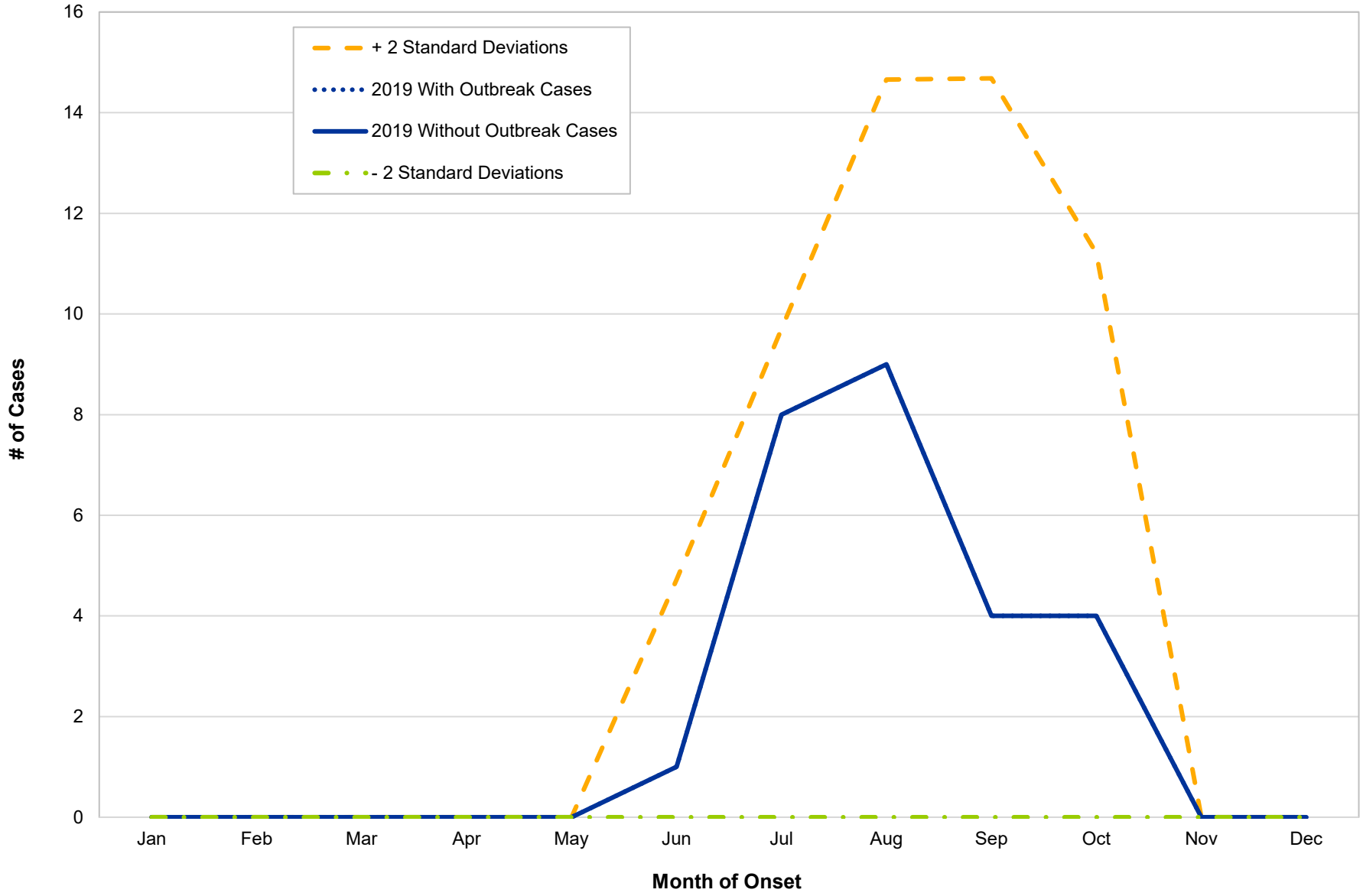
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Influenza-Associated Hospitalization



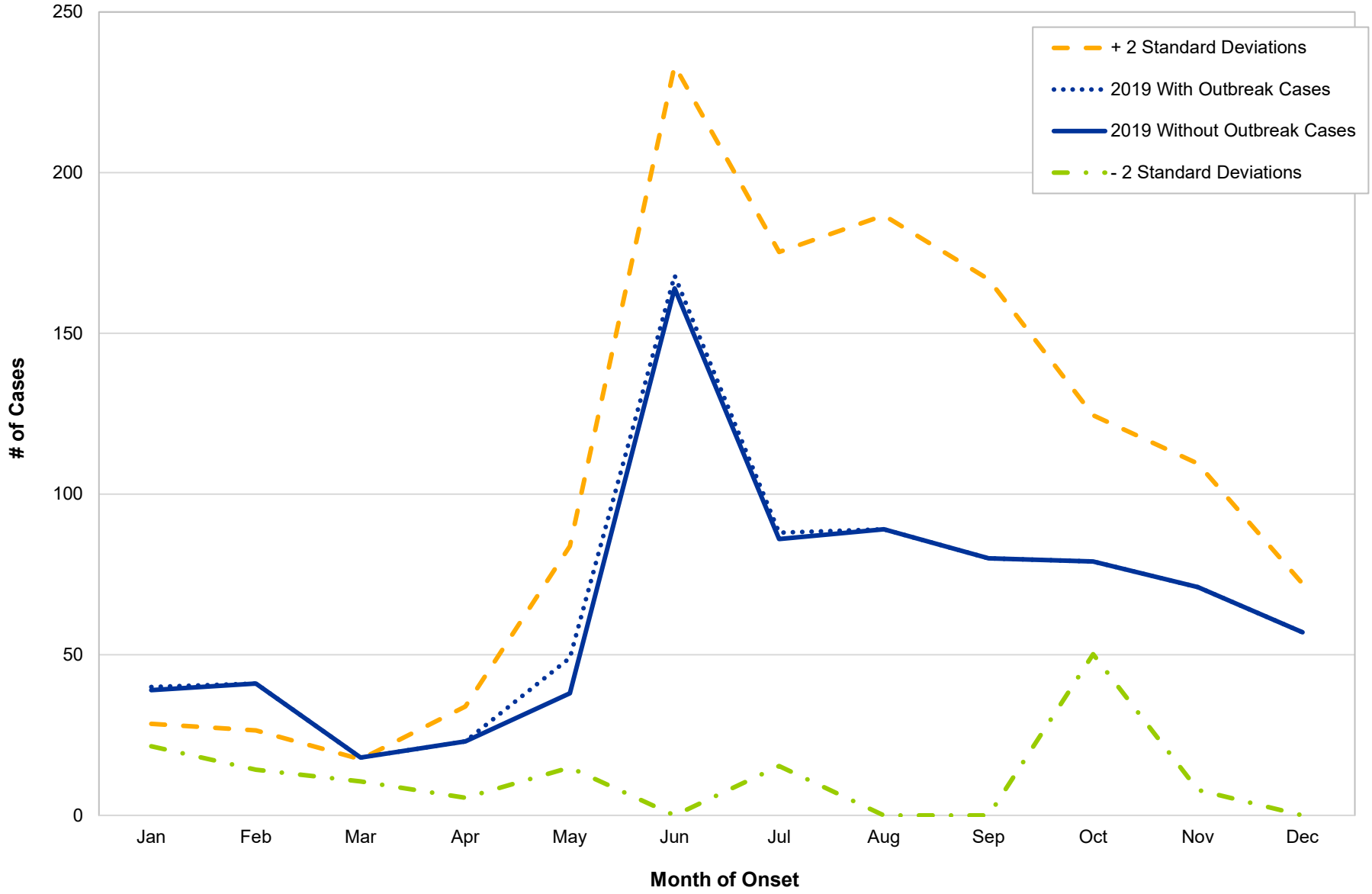
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
La Crosse Virus Disease



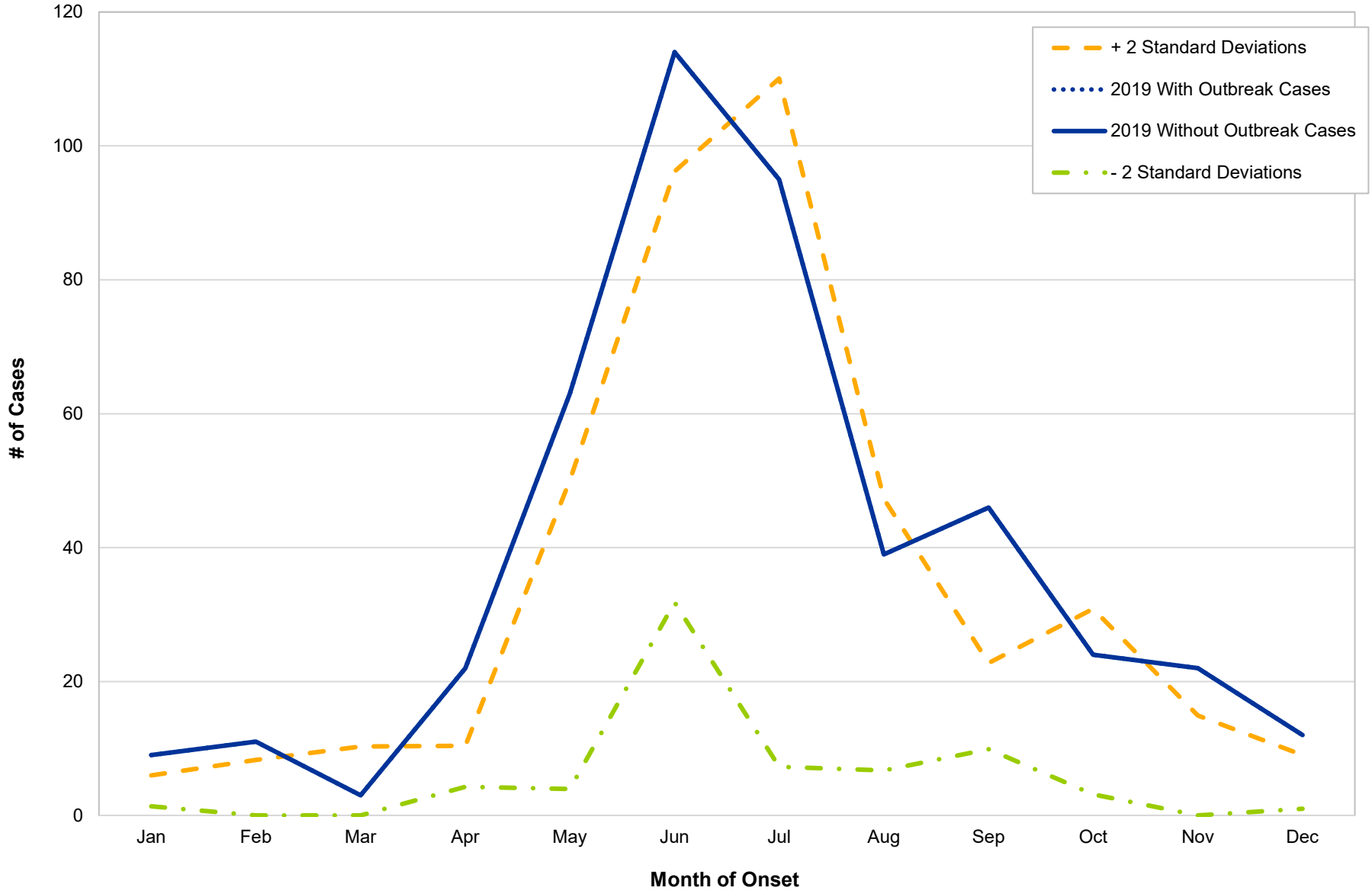
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Legionellosis



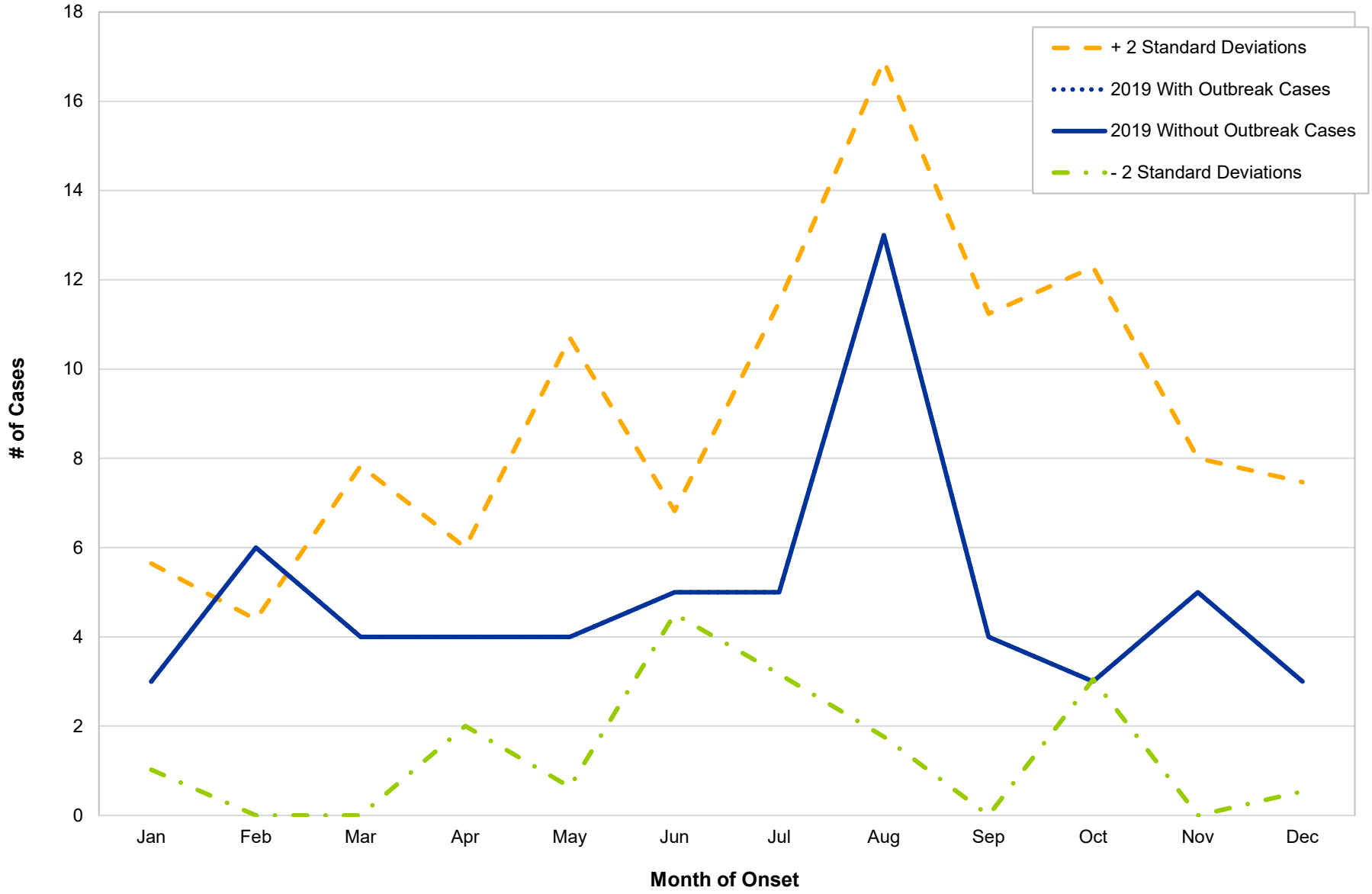
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Lyme Disease



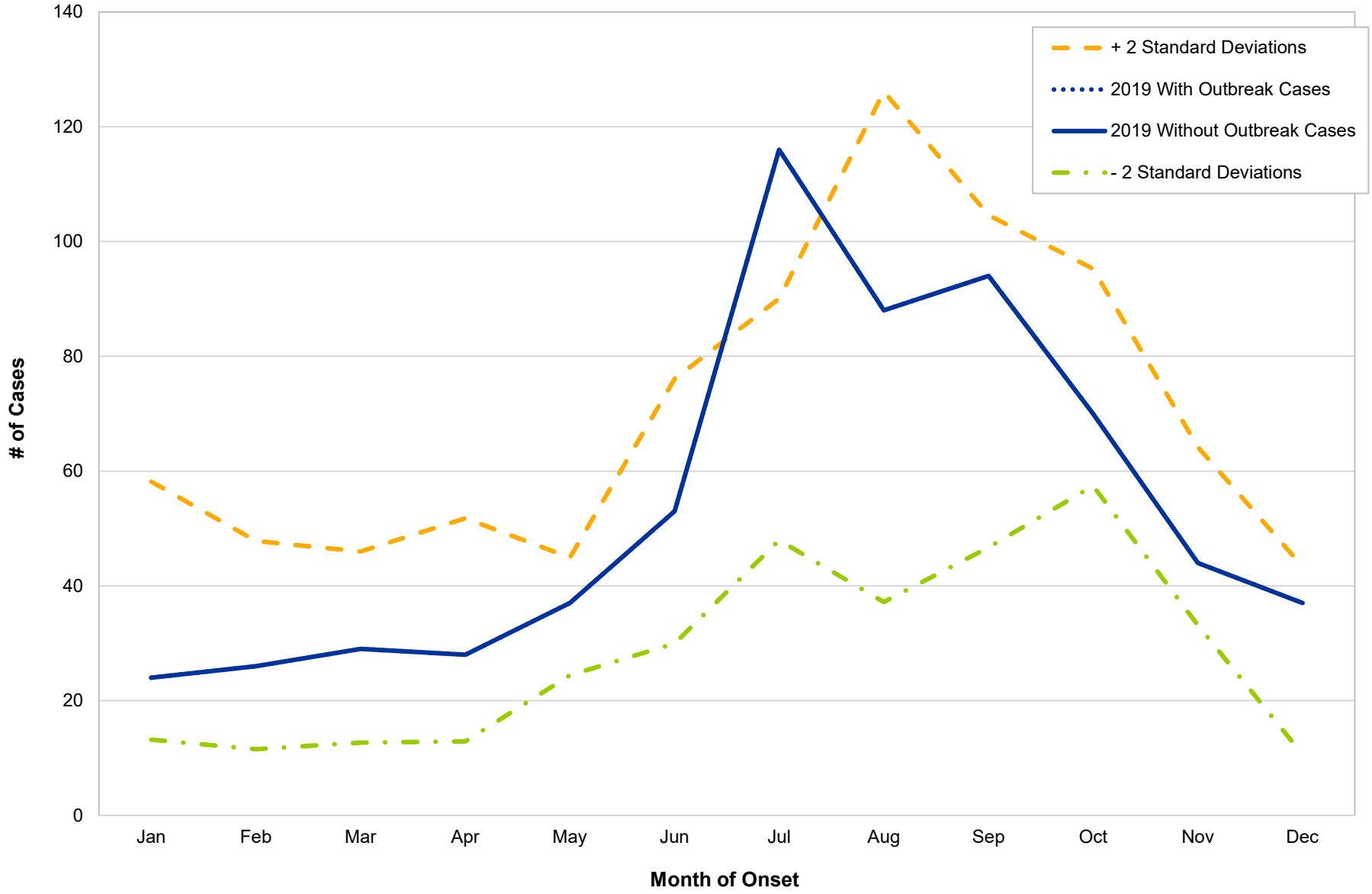
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Malaria



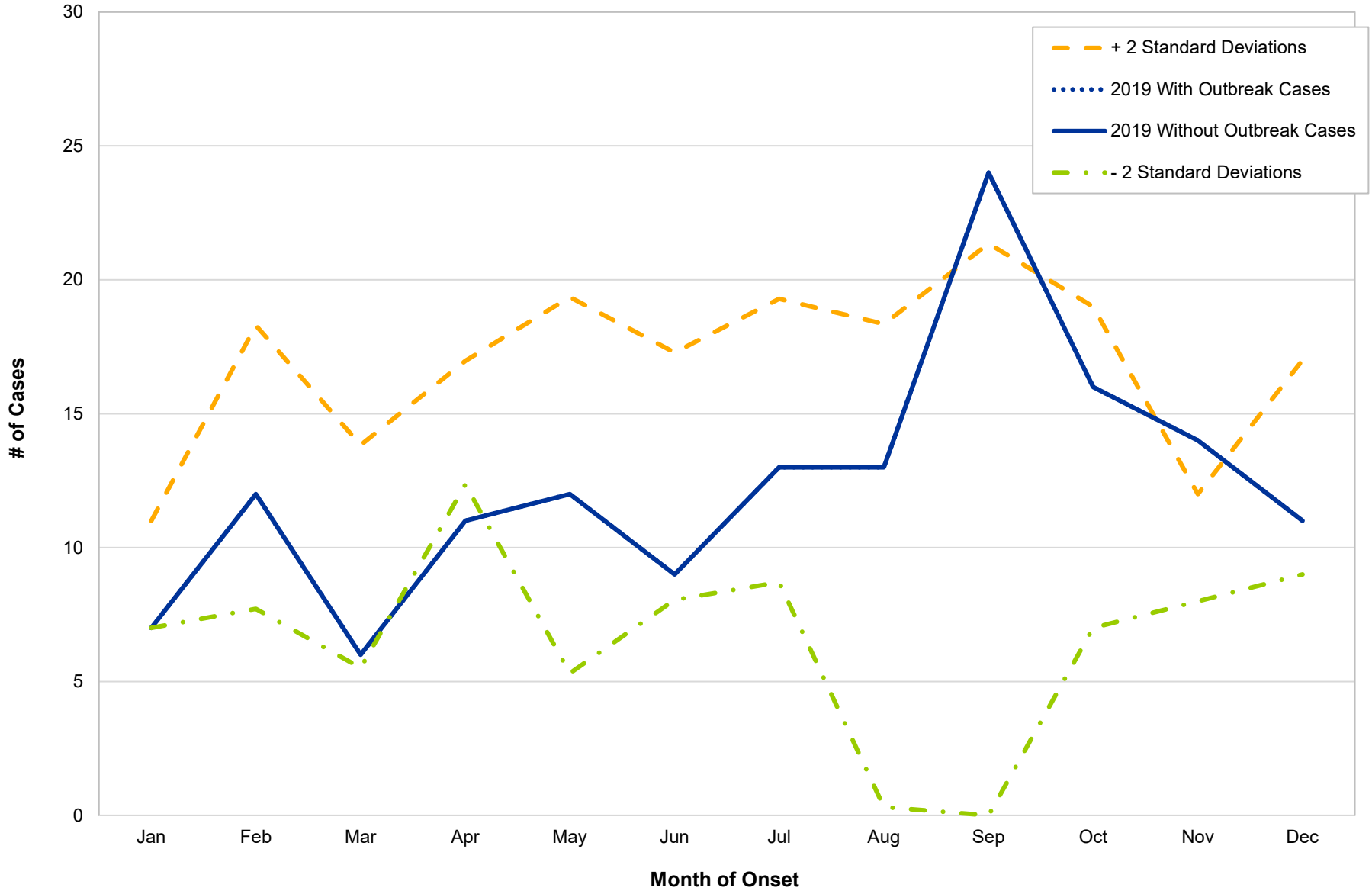
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Meningitis, Aseptic



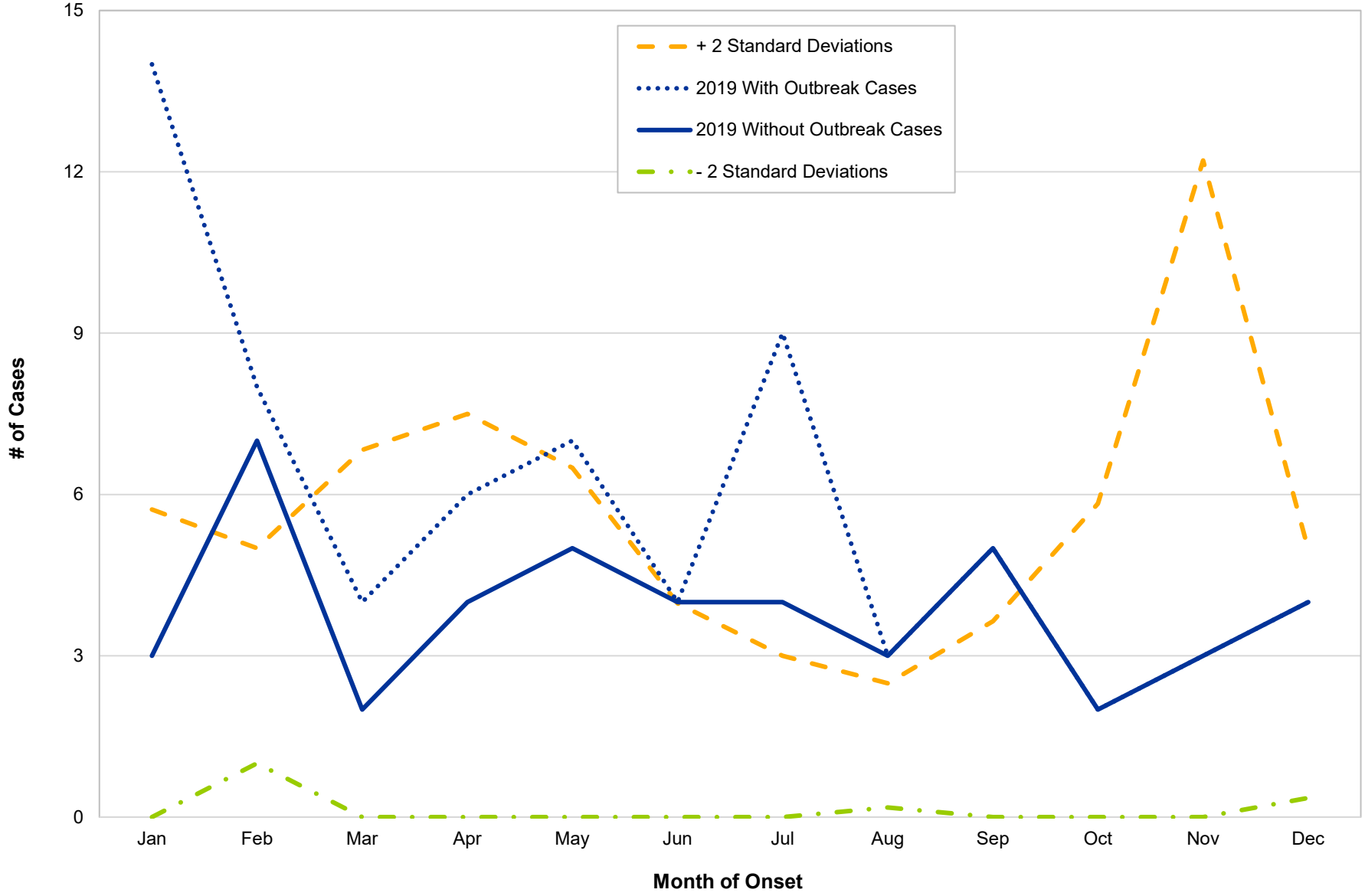
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Meningitis, Other Bacterial



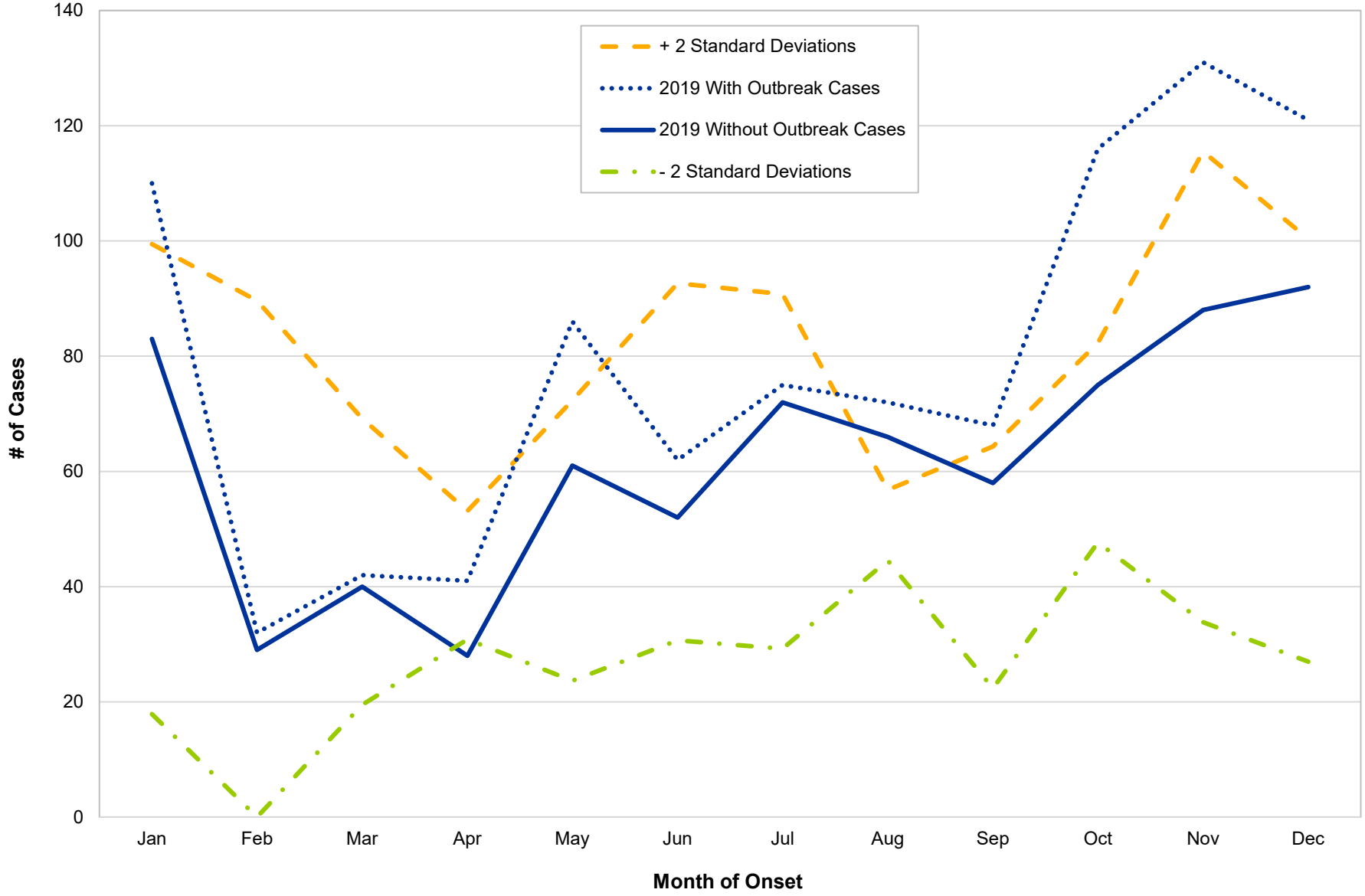
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Mumps



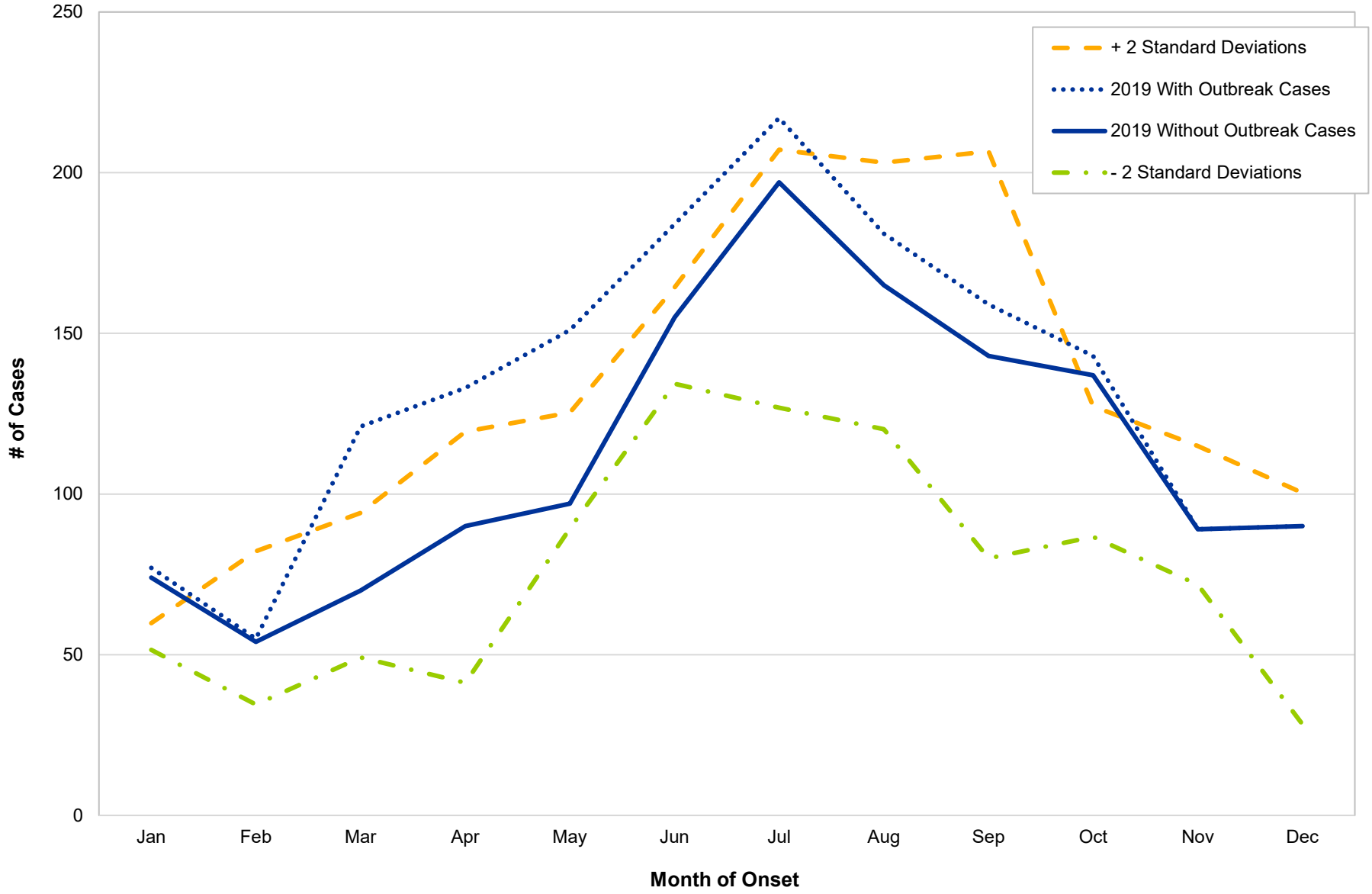
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Pertussis



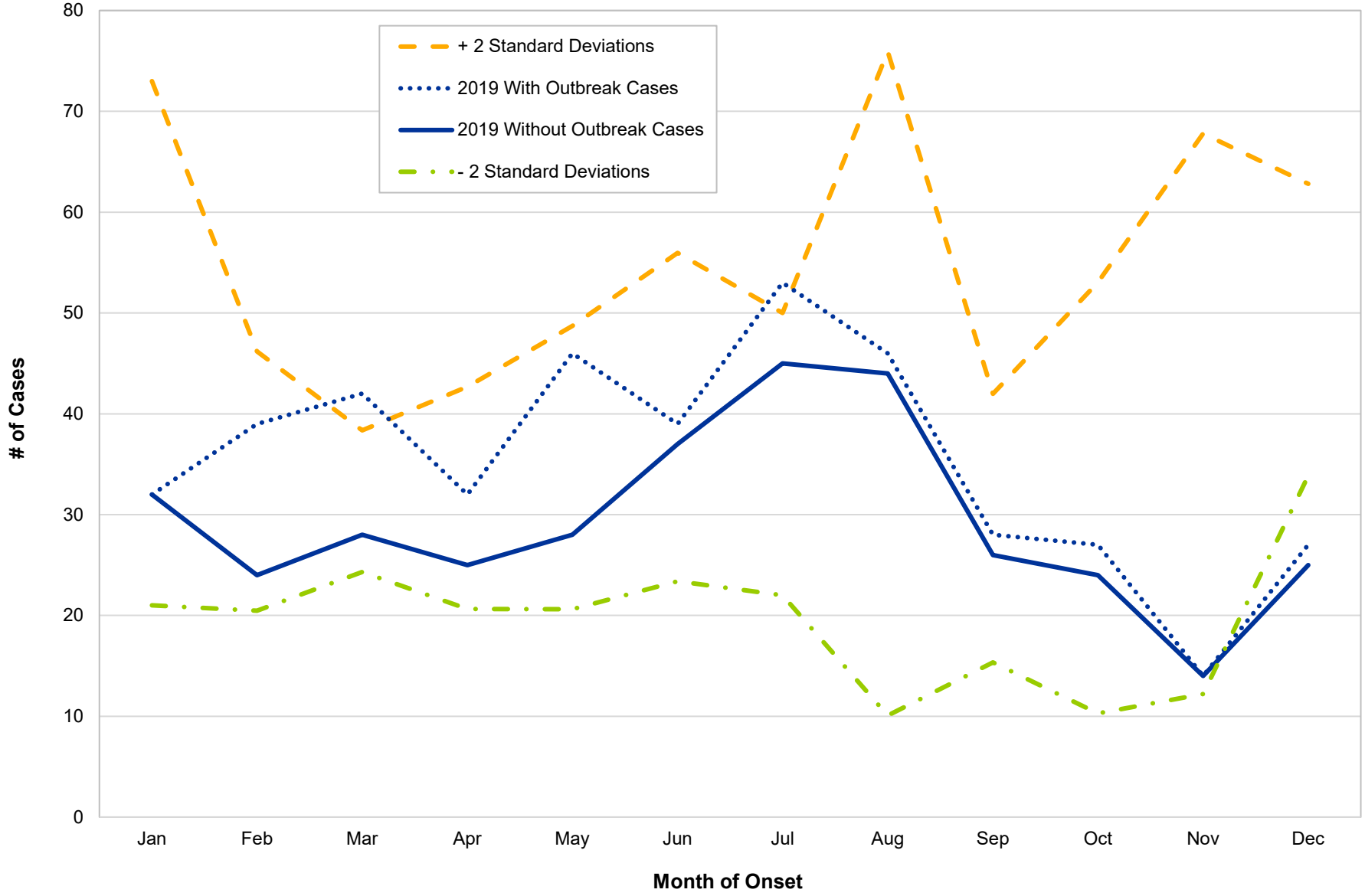
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Salmonellosis



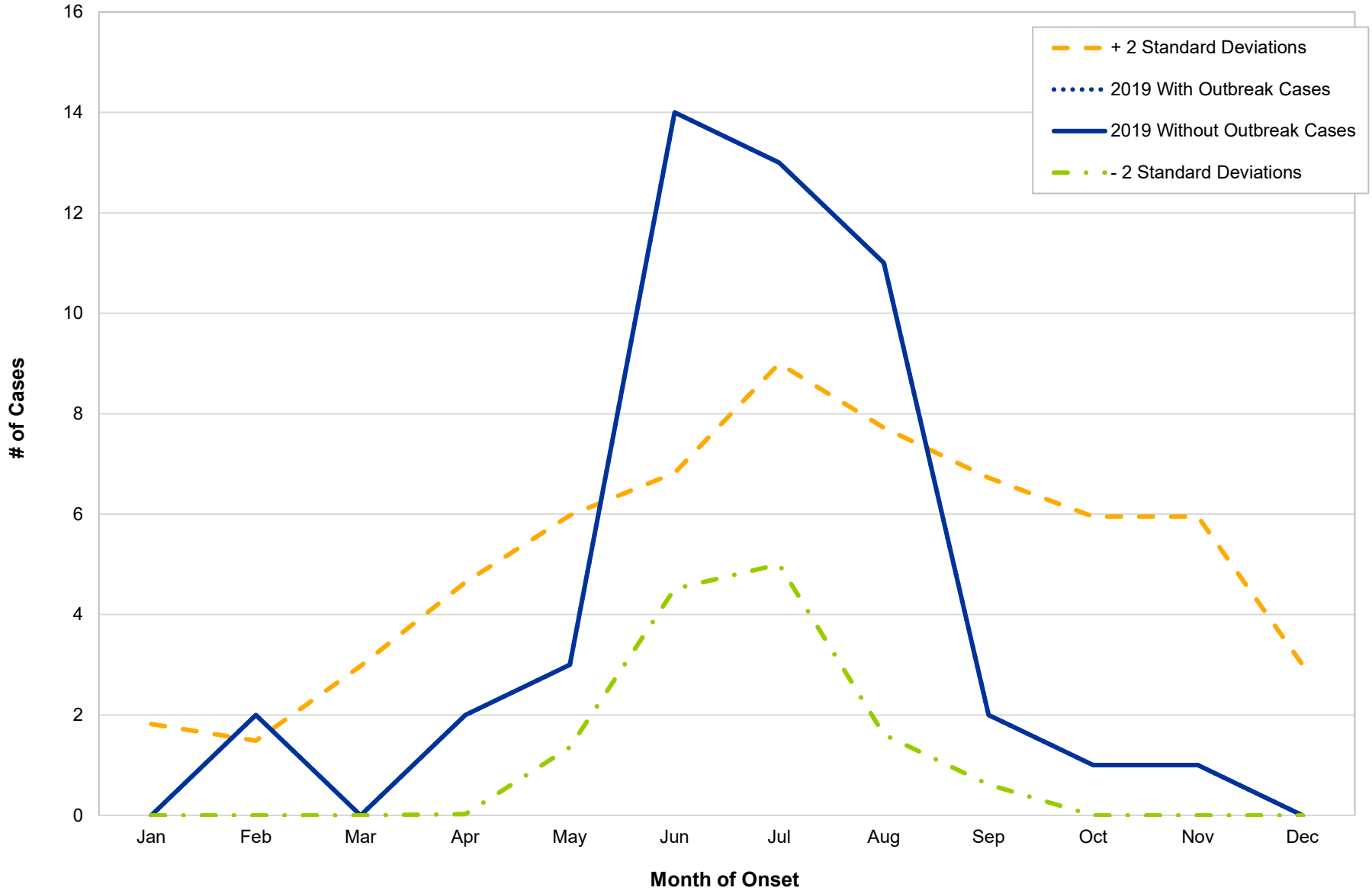
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Shigellosis



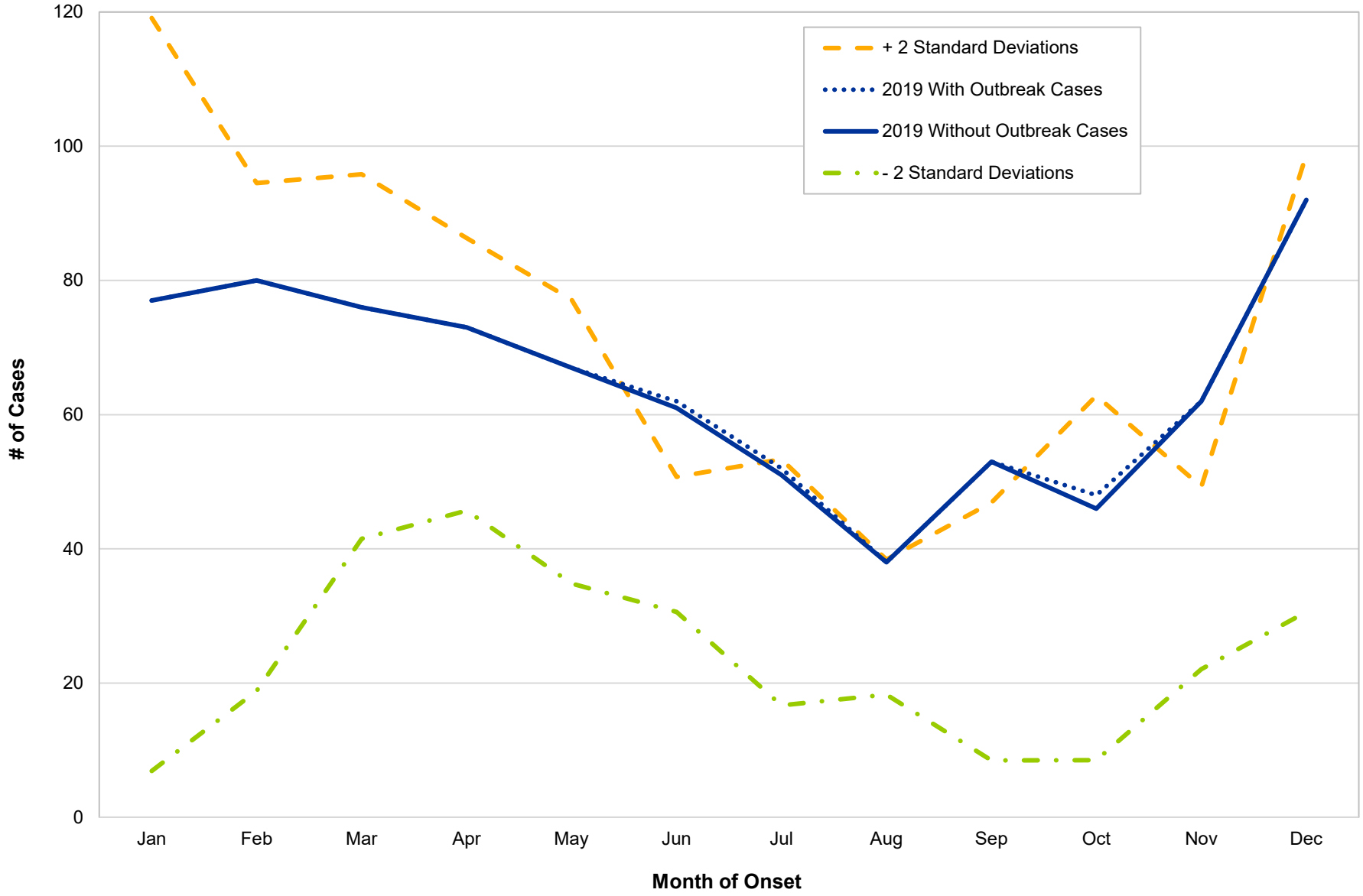
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Spotted Fever Rickettsiosis



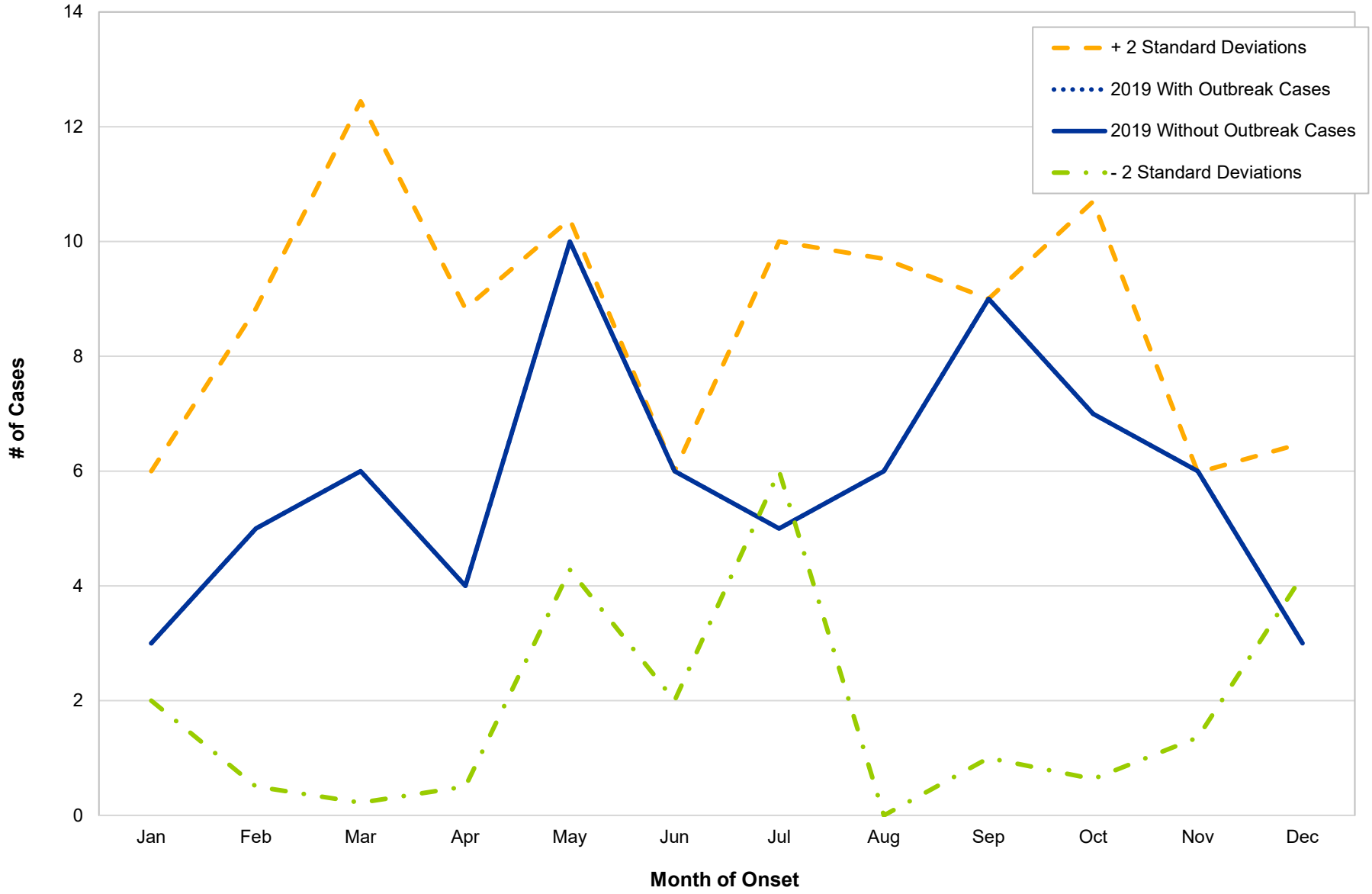
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Streptococcal Disease, Group A, Invasive



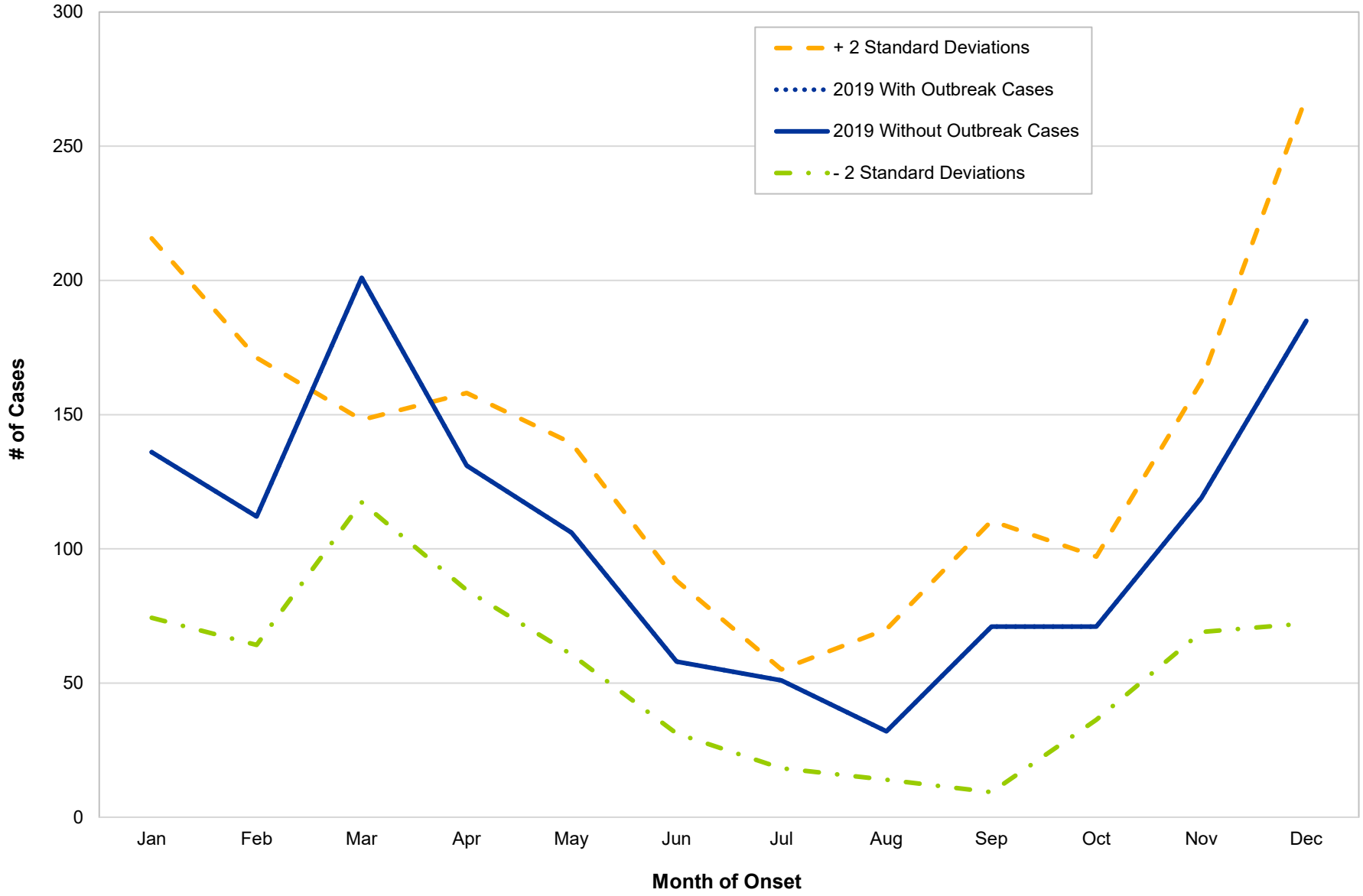
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Streptococcal Disease, Group B, in Newborn



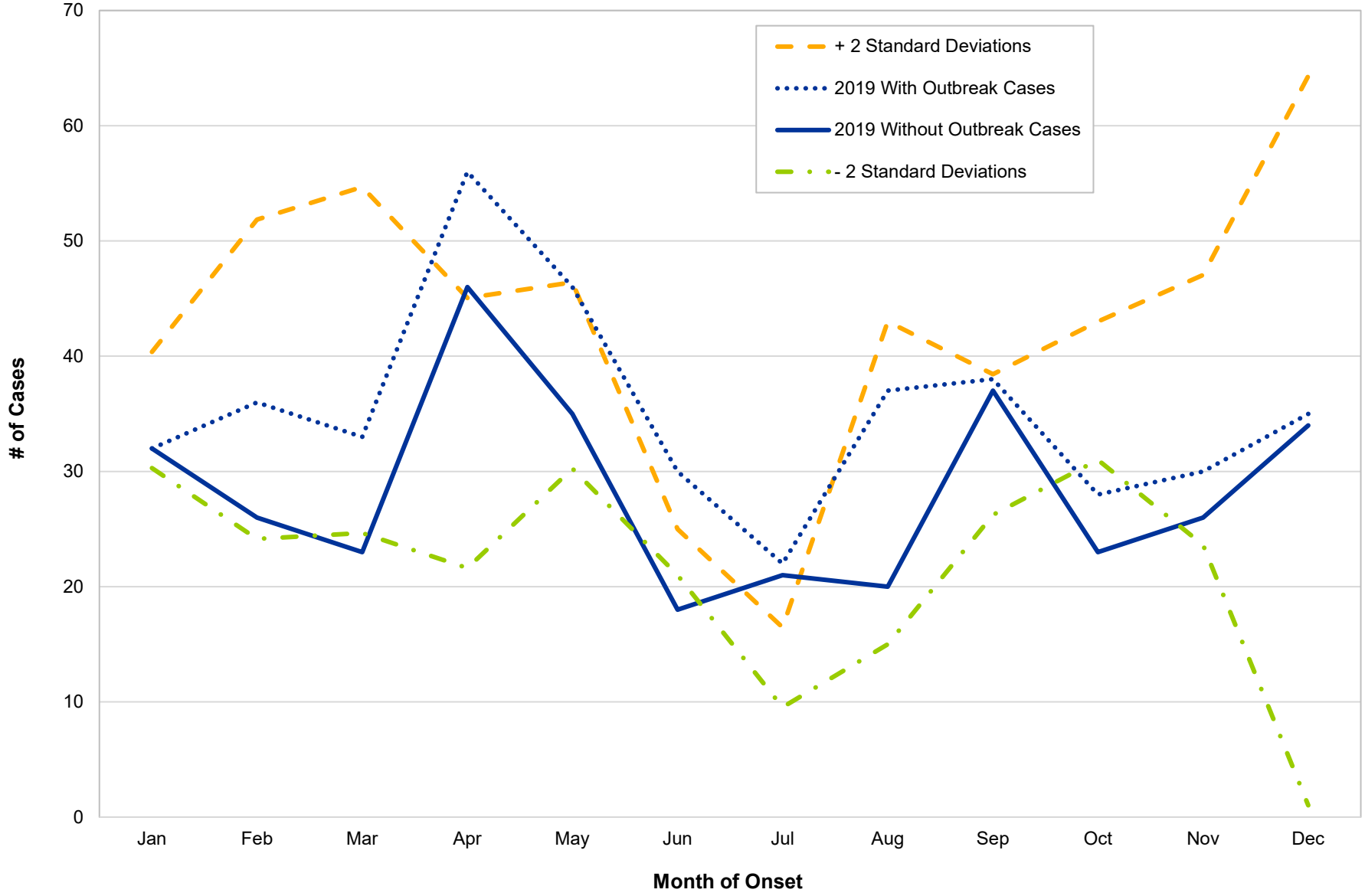
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Streptococcus pneumoniae, Invasive Disease



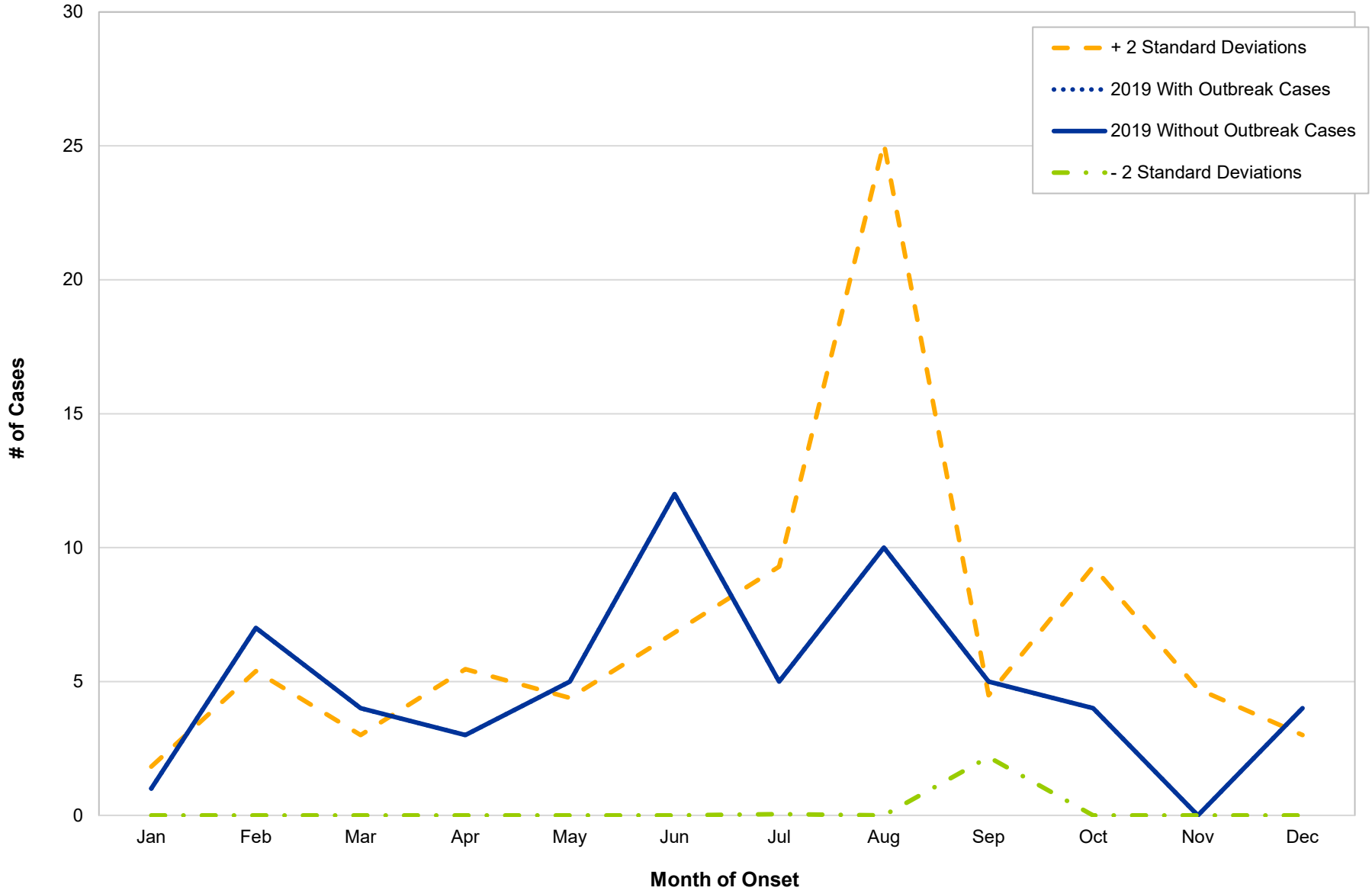
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Varicella



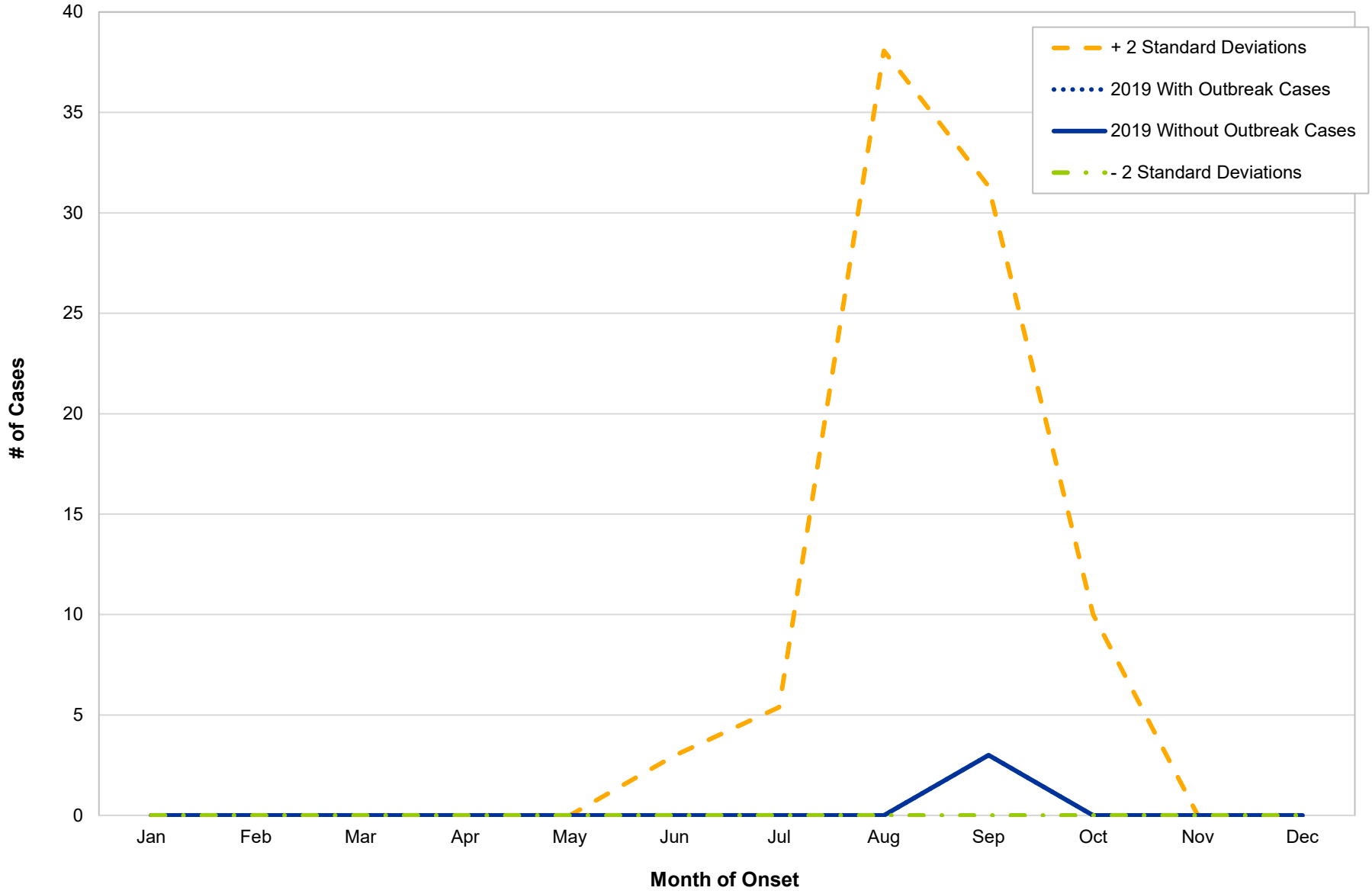
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Vibriosis



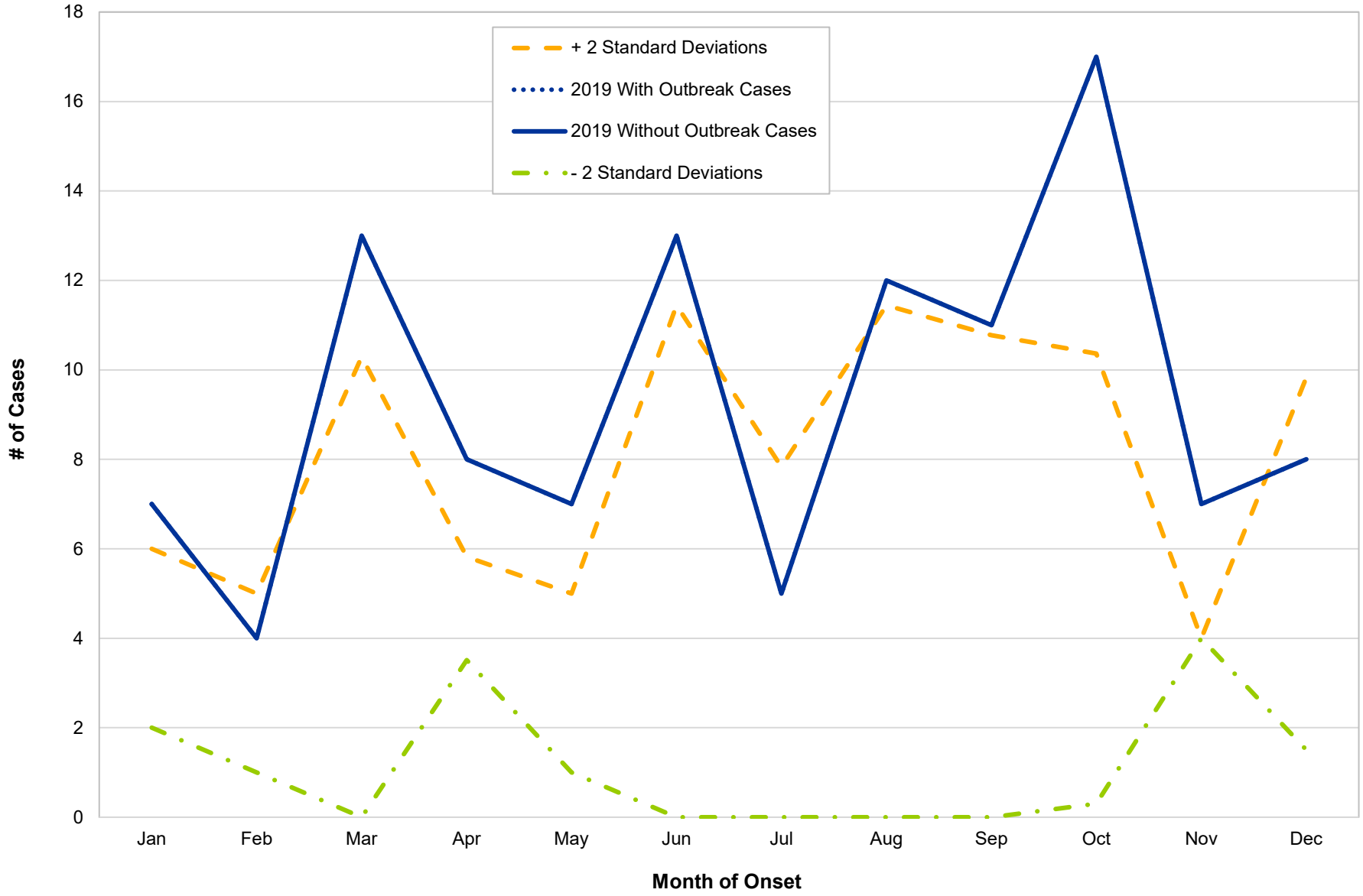
Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
West Nile Virus Infection



Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

INCIDENCE TRENDS BY MONTH OF ONSET, OHIO, 2019
Yersiniosis



Baseline trends are 2 standard deviations of mean counts from 2016-2018 data.
Source of disease data: Ohio Disease Reporting System.

PROFILES OF SELECTED NOTIFIABLE DISEASES

CANDIDA AURIS INFECTION

Number of cases in 2019:	*0*	*Rate in 2019:*	*0.0*
Number of cases in 2018:	*n/a*	*Rate in 2018:*	*n/a*

* Rates are based on the 2018 and 2019 U.S. Census estimates and are per 100,000 population.

Candida auris (*C. auris*) is a species of fungus that causes severe illness in hospitalized patients and is difficult to treat because it has high levels of resistance to multiple antifungals. Infections of *C. auris* have been reported in more than 30 countries since first identified in 2009, and infections have been increasing worldwide. The first known case in the U.S. occurred in 2013. The CDC named *C. auris* as an "Urgent" threat, the highest threat level, in the 2019 report "Antibiotic Resistance Threats in The United States."[1] *C. auris* became a reportable condition in Ohio in August of 2019. Ohio reported zero cases of *C. auris* during 2019.

Because *C. auris* can be easily misidentified as other *Candida* species by certain laboratory testing methods, ODH sends potentially misidentified isolates for confirmatory testing to rule out *C. auris* infection. Ohio laboratories are encouraged to review the algorithm to identify *C. auris* based on biochemical laboratory method and initial species identification.[2]

CARBAPENEMASE-PRODUCING CARBAPENEM-RESISTANT ENTEROBACTERALES (CP-CRE)

Number of cases in 2019:	*382*	*Rate in 2019:*	*3.3*
Number of cases in 2018:	*393*	*Rate in 2018:*	*3.4*

* Rates are based on the 2018 and 2019 U.S. Census estimates and are per 100,000 population.

General Information on Carbapenem-Resistant Enterobacterales (CRE)

Enterobacterales are a large order of different types of germs (bacteria) that commonly cause infections in healthcare settings. In 2020, a taxonomy change was adopted to use "Enterobacterales" as the name of a new scientific order. "*Enterobacteriaceae*" are now a family within the "Enterobacterales" order, along with *Erwiniaceae*, *Pectobacteriaceae*, *Yersiniaceae*, *Hafniaceae*, *Morganellaceae*, and *Budviciaceae*.[3] Examples of bacteria in the Enterobacterales order include *Escherichia coli* (*E. coli*) and *Klebsiella pneumoniae* (a full list is available at the NCBI Taxonomy Browser[4]). When Enterobacterales develop resistance to the group of antibiotics called carbapenems, the bacteria are called carbapenem-resistant Enterobacterales (CRE).

Some CRE bacteria have become resistant to most available antibiotics. Infections with these bacteria are very difficult to treat and can greatly increase mortality. The CDC named CRE as an "Urgent" threat, the highest threat level, in the 2019 report "Antibiotic Resistance Threats in The United States".[1]

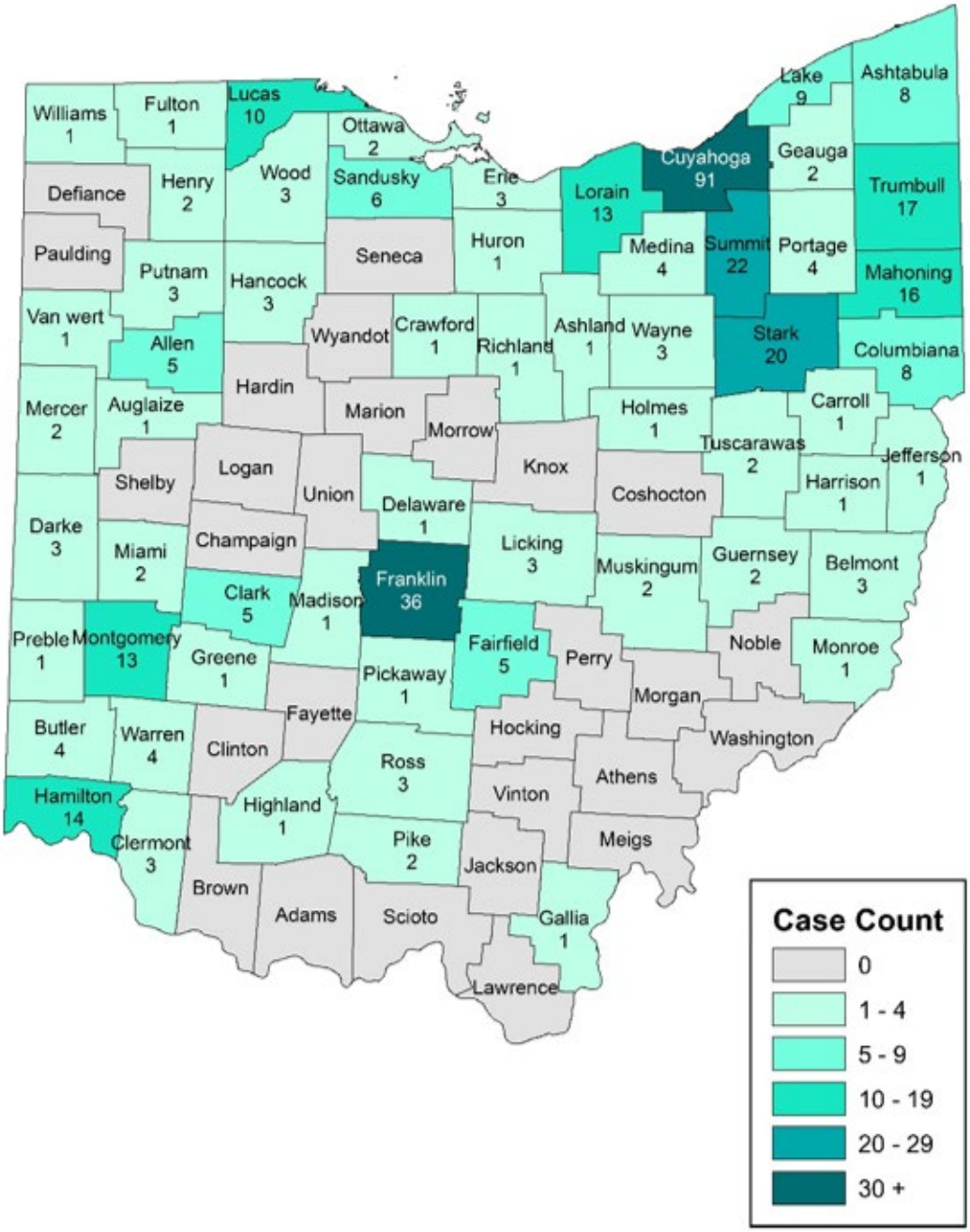
Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE)

Carbapenemase-producing Carbapenem-resistant Enterobacterales (CP-CRE) is a subset of CRE. CP-CRE became reportable in Ohio on March 22, 2018. The subset is categorized by the production of carbapenemases, which are enzymes that break down carbapenems and related antimicrobials, making treatment ineffective. The genes that code for production of carbapenemases are referred to as resistance mechanisms and are mobile genetic elements that can be passed between bacteria once in the body, contributing to CP-CRE's spread. These drug-resistant bacteria are easily transmitted person-to-person in healthcare settings, often by the hands of healthcare personnel or contaminated indwelling devices. CP-CRE persists in healthcare facilities due in part to the organism colonizing patients and the environment long-term, making transmission possible even after active infection is resolved.

CP-CRE have been targeted for prevention because much of the recent increase in CRE in the U.S. appears to have been driven by the spread of CP-CRE strains. Experience from both the U.S. and from other parts of the world suggests that these organisms have the ability to spread rapidly and can cause infections that are associated with high mortality rates.

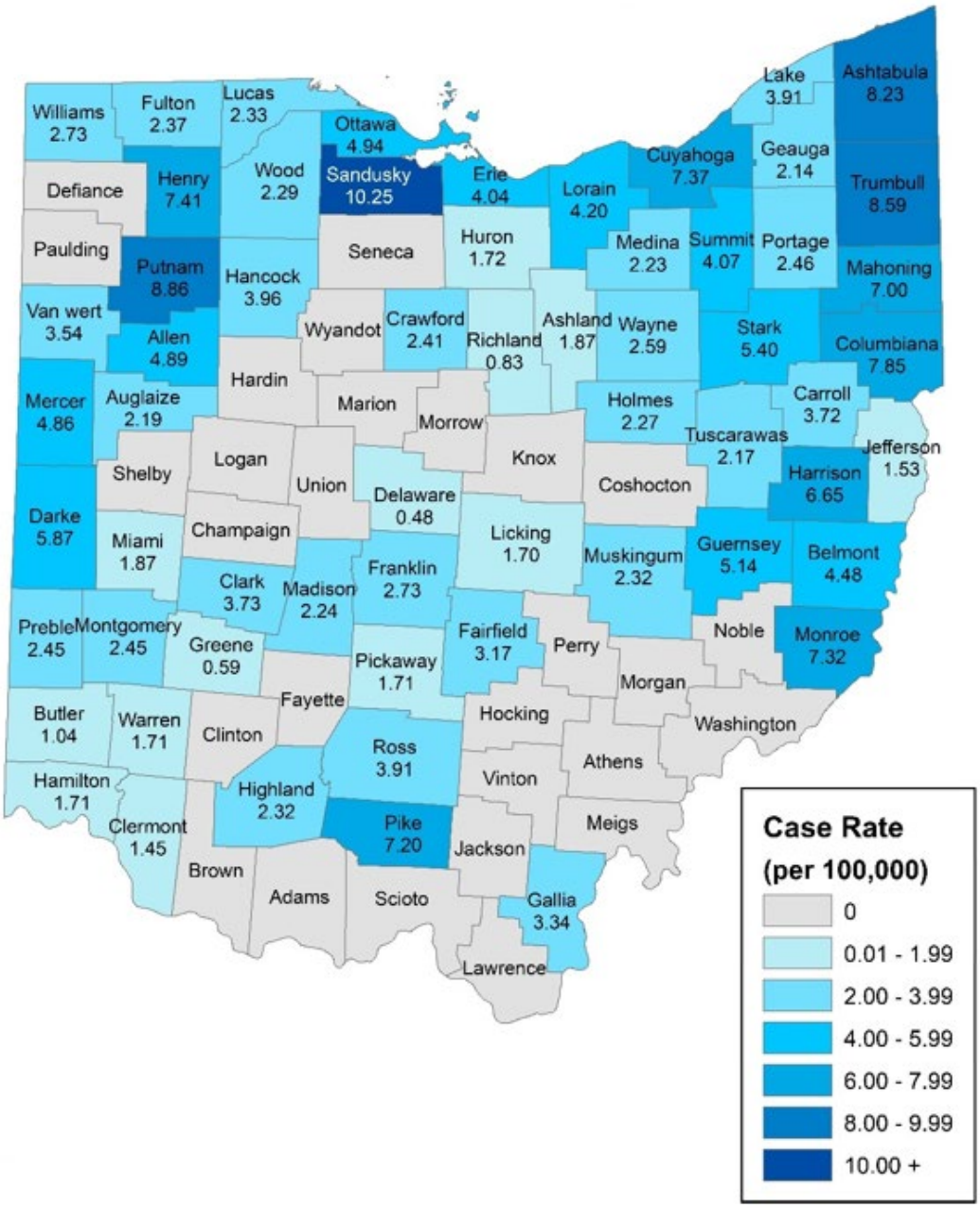
Data used to populate the maps below are based on specimen collection date, case's county of residence, and testing results from clinical isolates submitted to the Ohio Department of Health Laboratory (ODHL). Counts represent number of cases; a single person can have multiple cases of CP-CRE at any given time if specimens test positive for a different organism or mechanism of carbapenemase production. In 2019, Ohio had 382 cases of CP-CRE and the rate was 3.3 cases per 100,000 population (Figures 1 and 2).

Figure 1: CP-CRE Cases Reported in Ohio, 2019
Total = 382



Source of disease data: Ohio Disease Reporting System.

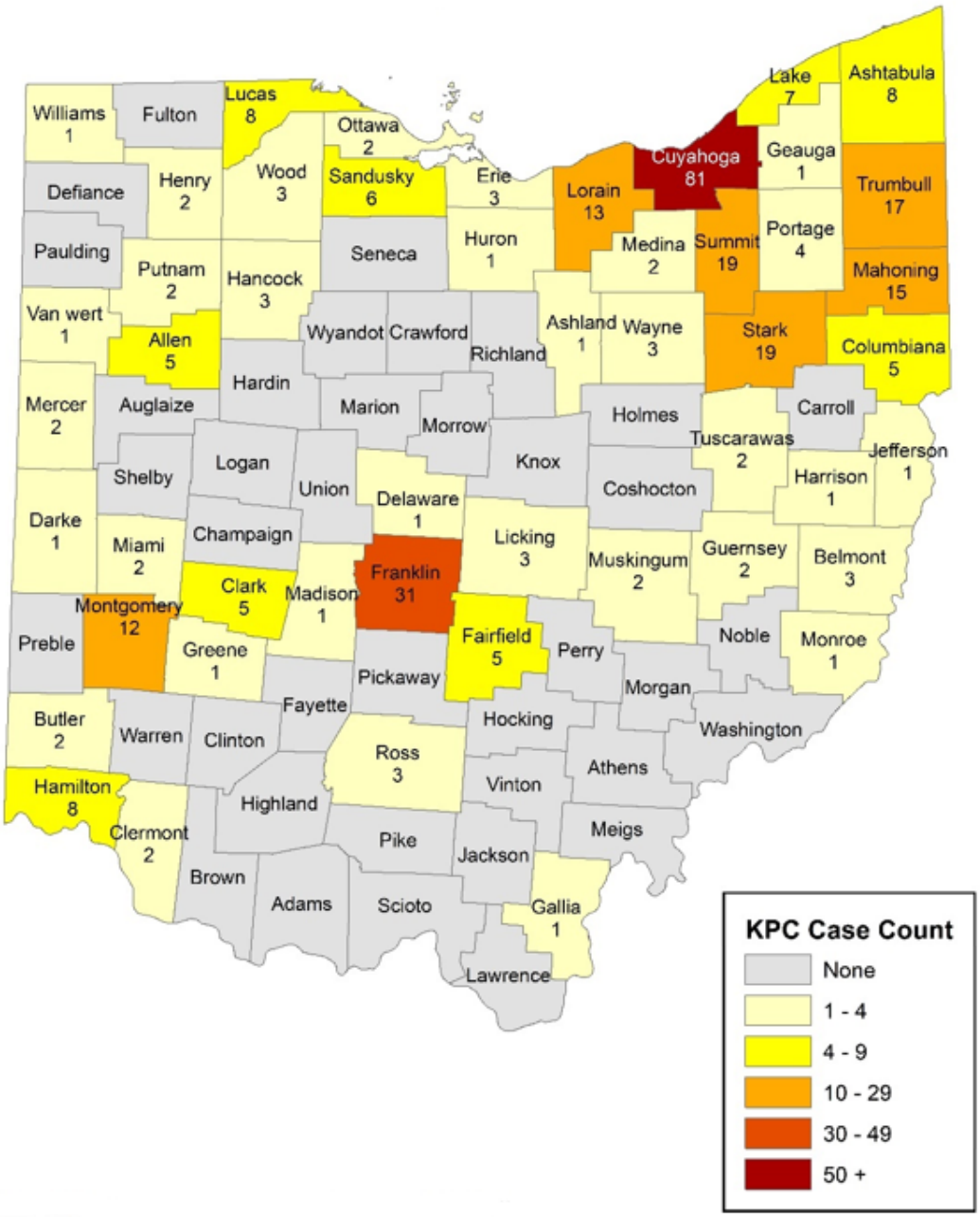
Figure 2: CP-CRE Rates in Ohio, 2019
Overall = 3.3 per 100,000



Source of disease data: Ohio Disease Reporting System.
Rates use 2019 U.S. population estimates and are per 100,000.

Klebsiella pneumoniae carbapenemase (KPC) is the most common carbapenemase in Ohio, and is identified most frequently in northeast Ohio (Figure 3). KPC accounted for more than 80% of isolates testing positive for carbapenemase production at ODHL in 2019.

Figure 3: CP-CRE Cases Positive for KPC in Ohio, 2019
Total = 324

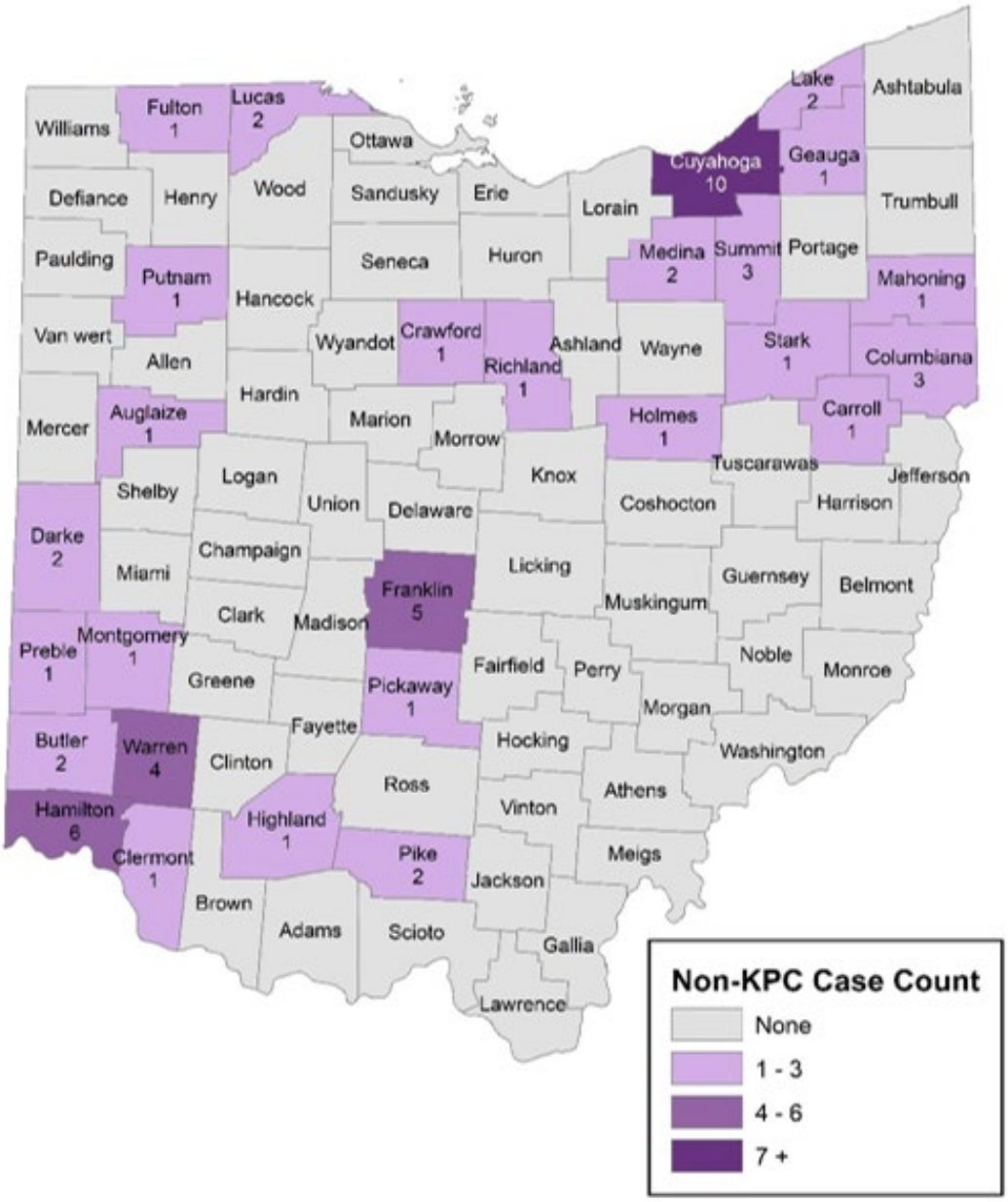


Source of disease data: Ohio Disease Reporting System.

Less common forms of resistance mechanisms include New Delhi metallo-beta-lactamase (NDM), Imipenemase metallo-beta-lactamase (IMP), Oxacillinase-48-like metallo-beta-lactamase (OXA-48), and Verona integron-encoded metallo-beta-lactamase (VIM). In 2019, NDM was the second most common resistance mechanism in Ohio with 28 cases, followed by IMP (14), OXA-48 (12), and VIM (3). The proportion of cases with non-KPC mechanisms associated with travel outside the U.S. decreased substantially from two-third of cases in 2018, to less than one-third in 2019, indicating increased domestic

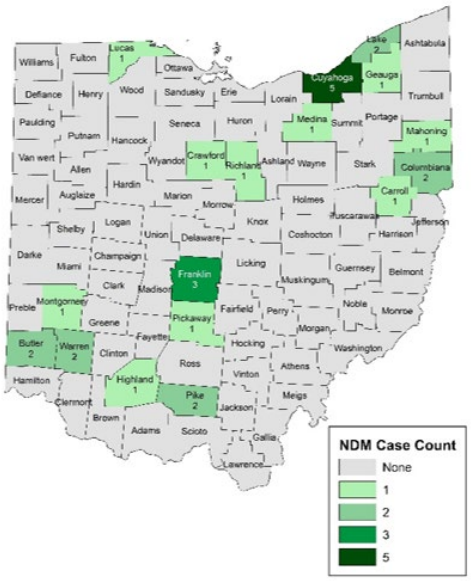
transmission. The maps below show the geographic distribution of these resistance mechanisms reported across the state in 2019 (Figures 4-8). One non-KPC case in Cuyahoga County was found to be a "Novel" resistance mechanism, which means it produced the carbapenemase enzyme but did not test positive for any known resistance mechanisms.

Figure 4: CP-CRE Cases Positive for Non-KPC* Mechanism Reported in Ohio, 2019
Total = 58



Source of disease data: Ohio Disease Reporting System.
* Non-KPC mechanisms include NDM, IMP, OXA-48, VIM, and one "Novel" mechanism reported in Cuyahoga County.

Figure 5: CP-CRE Cases Positive for NDM Reported in Ohio, 2019
Total = 28



Source of disease data: Ohio Disease Reporting System.

Figure 6: CP-CRE Cases Positive for IMP Reported in Ohio, 2019
Total = 14

Source of disease data: Ohio Disease Reporting System.

Figure 7: CP-CRE Cases Positive for OXA-48 Reported in Ohio, 2019
Total = 12

Source of disease data: Ohio Disease Reporting System.

Figure 8: CP-CRE Cases Positive for VIM Reported in Ohio, 2019
Total = 3

Source of disease data: Ohio Disease Reporting System.

OUTBREAK SUMMARIES

Starting in 2009, the categories for outbreak reporting changed (see Ohio Administrative Code Chapter 3701-03). These are referred to as "Class C: Report an outbreak, unusual incidence or epidemic by the end of the next business day." The categories for outbreak reporting are: community outbreak, foodborne outbreak, healthcare-associated outbreak, institutional outbreak, waterborne outbreak, and zoonotic outbreak.

In 2019, the Bureau of Infectious Diseases (BID) assisted local health jurisdictions in Ohio in the investigation of 454 outbreaks. These outbreaks were detected in 67 of 88 counties throughout the state. The number of Ohioans known to be ill from these outbreaks was 7,985 (median 11, range 1-233). The outbreaks were classified as: community (25), foodborne (68), healthcare-associated (148), institutional (187), waterborne (9), and zoonotic (17). Causative agents identified during the outbreak investigations included: *Acinetobacter* spp., astrovirus, *Bacillus cereus*, *Bordetella parapertussis*, *Bordetella pertussis*, *Campylobacter* spp., *Clostridium perfringens*, coxsackievirus, *Cryptosporidium* spp., *Cyclospora cayetanensis*, *Enterobius vermicularis*, enteropathogenic *Escherichia coli* (EPEC), Epstein-Barr virus, influenza virus, *Legionella* spp., mumps virus, *Mycobacterium chimaera*, *Mycoplasma pneumoniae*, norovirus genotypes GI and GII, parainfluenza virus, parvovirus, *Pseudomonas aeruginosa*, respiratory syncytial virus, rotavirus, *Salmonella* spp. (various serotypes), *Sarcoptes scabiei* (scabies mite), scombroid (histamine), *Serratia marcescens*, Shiga toxin-producing *Escherichia coli* (various serotypes), *Shigella* spp., *Staphylococcus aureus* (various strains), *Streptococcus* spp., and varicella-zoster virus.

This is the 10th year that norovirus sequencing data has been available in the annual summary. Viral sequencing, as well as most serotyping, was performed at the ODHL.

Details on the types of 2019 outbreaks are discussed below.

COMMUNITY OUTBREAKS

In 2019, 25 community outbreaks were reported from a variety of settings. Fourteen of these outbreaks were confirmed, with the causative agent as follows: *B. pertussis* (4), *Campylobacter* spp. (1), impetigo (1), influenza virus (1), mumps virus (1), norovirus (2), *Salmonella* spp. (1), *Shigella* spp. (2), and varicella-zoster virus (1).

The confirmed community outbreaks of 2019 are listed in Table 1.

Table 1: Confirmed Community Outbreaks, Ohio, 2019

Month of Onset	Causative Agent	County	# Ill
December 2018	*Bordetella pertussis*	Richland	20
March 2019	Varicella-zoster virus	Stark	6
April 2019	Norovirus GII	Cuyahoga	60
April 2019	*Salmonella* (I) 4,5,12:i:-	Franklin	2
April 2019	*Shigella sonnei*	Hamilton	4
June 2019	*Bordetella pertussis*	Warren	3
June 2019	*Campylobacter* spp.	Hamilton	13
July 2019	Influenza virus	Washington	9
July 2019	Mumps virus	Franklin	5

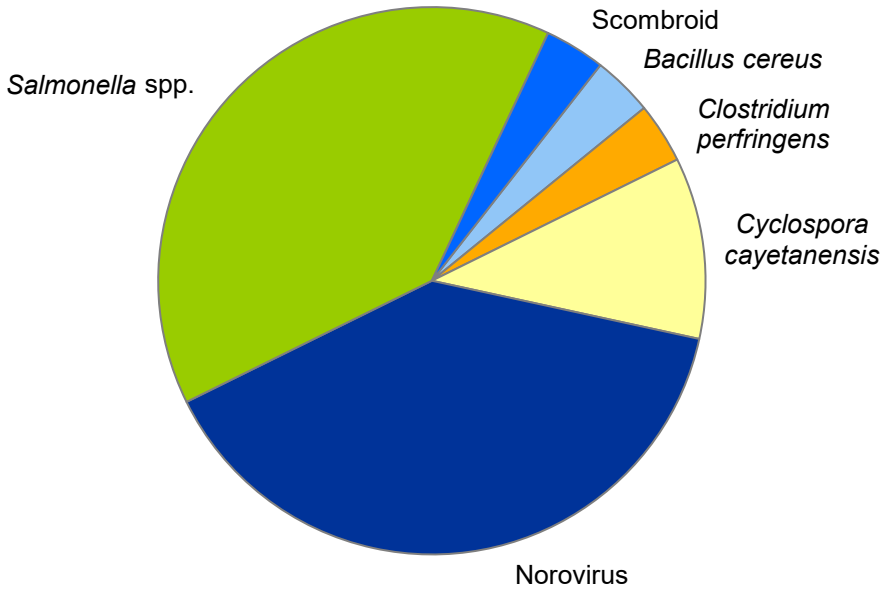
Month of Onset	Causative Agent	County	# Ill
September 2019	*Bordetella pertussis*	Franklin	3
October 2019	*Bordetella pertussis*	Warren	29
October 2019	Impetigo	Clark	7
October 2019	*Shigella flexneri*	Franklin	3
December 2019	Norovirus GII.8 [P8]	Montgomery	61

Source of outbreak data: Ohio Disease Reporting System.

FOODBORNE OUTBREAKS

In 2019, 28 of the 68 foodborne outbreaks reported were confirmed. These 28 outbreaks in Ohio met the general definition of a foodborne outbreak: "An incident in which two or more persons experience a similar illness after ingestion of a common food, and epidemiologic analysis implicates the food as the source of the illness." (Some outbreaks with one person ill are multistate outbreaks.) The 28 confirmed outbreaks also met the agent-specific criteria for confirmation of outbreaks. As shown in Figure 1, for these 28 foodborne outbreaks, the causative agent was distributed as follows: *B. cereus* (1), *C. perfringens* (1), *C. cayetanensis* (3), norovirus (11), *Salmonella* spp. (11), and scombroid (1).

Figure 1: Confirmed Foodborne Outbreaks by Etiologic Agent, Ohio, 2019



Source of outbreak data: Ohio Disease Reporting System.

There were no individual cases of foodborne botulism in Ohio in 2019.

The 28 confirmed foodborne outbreaks are detailed in Table 2.

Table 2: Confirmed Foodborne Outbreaks, Ohio, 2019

Month of Onset	Causative Agent	County	# Ill	Suspected Food Vehicle	Event/Setting
December 2018	*Salmonella* Hadar	Multistate	3	Turkey	Private home; restaurant
January 2019	Norovirus GII.4 Sydney [P16]	Montgomery	4	Unknown	Restaurant
February 2019	Norovirus GII.4 Sydney [P16]	Delaware	15	Unknown	Restaurant
March 2019	Norovirus GII.1 [P16]	Seneca	7	Unknown	Restaurant
March 2019	Norovirus GII.4 Sydney [P16]	Montgomery	7	Unknown	Restaurant
March 2019	Norovirus GII.4 Sydney [P16]	Tuscarawas	41	Unknown	School trip
March 2019	*Salmonella* Carrau	Multistate	48	Cut melon	Commercial product; private home
April 2019	Norovirus GI.3 [P3]	Hamilton	34	Chips and salsa	Restaurant
April 2019	Norovirus GII.4 Sydney [P16]	Franklin	2	Unknown	Restaurant
April 2019	Norovirus GII.4 Sydney [P16]	Lorain	19	Unknown	Private home; caterer; grocery store; church
May 2019	*Bacillus cereus*	Logan	11	Mango quinoa	School
May 2019	Norovirus GII.4 Sydney [P16]	Champaign	58	Coleslaw	Wedding reception; caterer; private home
May 2019	Norovirus GII.4 Sydney [P16]	Clark	33	Unknown	Restaurant
May 2019	*Salmonella* Paratyphi B, var L - Tartrate +	Multistate	5	Unknown	Restaurant
June 2019	*Cyclospora cayetanensis*	Auglaize	10	Basil	Restaurant
June 2019	*Cyclospora cayetanensis*	Hamilton	8	Unknown	Restaurant
June 2019	*Cyclospora cayetanensis*	Lucas	4	Basil	Restaurant
June 2019	*Salmonella* Enteritidis	Holmes	6	Egg	Private home
June 2019	*Salmonella* Enteritidis	Multistate	5	Chicken	Church; private home
July 2019	*Salmonella* Berta	Multistate	2	Pork	Private home
July 2019	*Salmonella* Enteritidis	Multistate	2	Chicken	Private home
July 2019	*Salmonella* Enteritidis	Multistate	1	Chicken	Private home
September 2019	Norovirus GI.3 [P3]	Hamilton	4	Unknown	Restaurant
September 2019	*Salmonella* Montevideo	Multistate	1	Iceberg lettuce	Restaurant
September 2019	Scombroid (histamine)	Multicounty	11	Yellowfin tuna steak	Private home
October 2019	*Salmonella* Thompson	Multistate	1	Chicken	Restaurant
October 2019	*Salmonella* Typhimurium	Multistate	1	Ground beef	Private home; restaurant
December 2019	*Clostridium perfringens*	Richland	35	Cream gravy	Correctional facility

Source of outbreak data: Ohio Disease Reporting System.

Here are the links to the outbreak reports for some of the foodborne multistate outbreaks:

Outbreak of *Salmonella* Infections Linked to Pre-Cut Melons

Outbreak of *Cyclospora* Infections Linked to Fresh Basil from Siga Logistics de RL de CV of Morelos, Mexico

HEALTHCARE-ASSOCIATED OUTBREAKS

There were 148 healthcare-associated outbreaks reported in 2019, 90 of which were confirmed as shown in Table 3.

Table 3: Confirmed Healthcare-Associated Outbreaks, Ohio, 2019

Month of Onset	Causative Agent	# Ill	Setting
August 2017	*Mycobacterium chimaera*	2	Hospital
December 2018	Norovirus genotype unknown	6	Memory unit, assisted living facility
December 2018	Norovirus GI.3 [P3]	20	Hospital
December 2018	Norovirus GII.13 [P16]	18	Long-term care facility
January 2019	Carbapenemase-producing *Acinetobacter* spp.	2	Long-term care facility
January 2019	Influenza virus	24	Long-term care facility, rehab facility
January 2019	Influenza virus	18	Group home, Division of Mental Retardation and Developmental Disabilities facility
January 2019	Influenza virus	12	Long-term care facility
January 2019	Influenza virus	7	Assisted living facility, long-term care facility
January 2019	Influenza virus	7	Long-term care facility
January 2019	Influenza virus	4	Long-term care facility
January 2019	Norovirus GI.3 [P3]	48	Long-term care facility
January 2019	Norovirus GI.3 [P3]	36	Long-term care facility
January 2019	Norovirus GII	16	Hospital
January 2019	Norovirus GII.1 [P16]	75	Long-term care facility
January 2019	Norovirus GII.12 [P16]	11	Hospital
January 2019	Norovirus GII.4 Sydney [P16]	167	Long-term care facility
January 2019	Respiratory syncytial virus (RSV)	11	Long-term care facility
February 2019	Influenza virus	35	Long-term care facility
February 2019	Influenza virus	24	Long-term care facility
February 2019	Influenza virus	18	Long-term care facility
February 2019	Influenza virus	13	Long-term care facility
February 2019	Influenza virus	8	Long-term care facility
February 2019	Influenza virus	7	Long-term care facility
February 2019	Influenza virus	6	Long-term care facility
February 2019	Influenza virus	5	Long-term care facility
February 2019	Influenza virus	3	Long-term care facility
February 2019	Influenza virus	3	Long-term care facility
February 2019	Norovirus GII.17 [P17]	12	Hospital
February 2019	Verona integron-encoded metallo-β-lactamase-producing carbapenem-resistant *Pseudomonas aeruginosa* (VIM-CRPA)	2	Hospital

Month of Onset	Causative Agent	# Ill	Setting
March 2019	Influenza virus	35	Long-term care facility
March 2019	Influenza virus	31	Long-term care facility
March 2019	Influenza virus	25	Memory unit, long-term care facility
March 2019	Influenza virus	23	Long-term care facility
March 2019	Influenza virus	19	Long-term care facility
March 2019	Influenza virus	13	Long-term care facility
March 2019	Influenza virus	10	Memory unit, assisted living facility
March 2019	Influenza virus	8	Long-term care facility
March 2019	Influenza virus	6	Long-term care facility
March 2019	Influenza virus	6	Long-term care facility
March 2019	Influenza virus	6	Long-term care facility
March 2019	Influenza virus	3	Long-term care facility
March 2019	Influenza virus	3	Long-term care facility
March 2019	Influenza virus	3	Long-term care facility
March 2019	Norovirus genotype unknown	12	Long-term care facility
March 2019	Norovirus GII.1 [P16]	14	Memory unit, assisted living facility
March 2019	Norovirus GII.4 Sydney [P16]	233	Memory unit, assisted living facility, long-term care facility
March 2019	Norovirus GII.4 Sydney [P16]	62	Long-term care facility
March 2019	Norovirus GII.4 Sydney [P16]	61	Memory unit, long-term care facility
March 2019	Norovirus GII.4 Sydney [P16]	59	Long-term care facility
March 2019	Norovirus GII.4 Sydney [P16]	55	Memory unit, long-term care facility
March 2019	Norovirus GII.4 Sydney [P16]	28	Long-term care facility
March 2019	Norovirus GII.4 Sydney [P16]	27	Assisted living facility, long-term care facility
March 2019	Norovirus GII.4 Sydney [P16]	13	Long-term care facility
March 2019	Norovirus GII.4 Sydney [P16]; enteropathogenic *Escherichia coli* (EPEC)	37	Assisted living facility, long-term care facility
March 2019	*Sarcoptes scabiei*	32	Memory unit, long-term care facility
April 2019	Norovirus genotype unknown	44	Long-term care facility
April 2019	Norovirus genotype unknown	11	Hospital
April 2019	Norovirus GII.4 Sydney [P16]	45	Assisted living facility, long-term care facility, rehab facility
April 2019	Norovirus GII.4 Sydney [P16]	31	Long-term care facility
April 2019	Norovirus GII.4 Sydney [P16]	17	Long-term care facility
April 2019	Norovirus GII.4 Sydney [P16]	12	Hospital
April 2019	Norovirus GII.4 Sydney [Pe]	21	Memory unit, assisted living facility, long-term care facility

Month of Onset	Causative Agent	# Ill	Setting
June 2019	Group A *Streptococcus*	6	Hospital
June 2019	Parainfluenza virus type 3	18	Long-term care facility
June 2019	Parainfluenza virus type 3	3	Long-term care facility
August 2019	Norovirus GII.2 [P16]	10	Private home; hospital
August 2019	Norovirus GII.3 [P untypeable]	10	Hospital
September 2019	*Serratia marcescens*	3	Hospital
October 2019	Multi-drug resistant *Acinetobacter baumannii* OXA-24/40	6	Hospital; long-term care facility
October 2019	Norovirus GII.4 Sydney [P16]	36	Assisted living facility, long-term care facility
October 2019	Norovirus GII.6 [P7]	12	Hospital
November 2019	Norovirus genotype unknown	21	Memory unit, assisted living facility
November 2019	Norovirus GI.1 [P1]	59	Memory unit, assisted living facility, long-term care facility
November 2019	Norovirus GII.13 [P16]	28	Long-term care facility
November 2019	Norovirus GII.2 [P16]	47	Assisted living facility, long-term care facility
November 2019	Norovirus GII.4 Sydney [P16]	22	Rehab facility
November 2019	Norovirus GII.4 Untypeable [P16]	11	Hospital
November 2019	*Sarcoptes scabiei*	4	Hospital
December 2019	Influenza virus	13	Long-term care facility, rehab facility
December 2019	Influenza virus	3	Rehab facility
December 2019	Norovirus genotype unknown	36	Long-term care facility
December 2019	Norovirus GI.1 [P1]	24	Long-term care facility
December 2019	Norovirus GI.1 [P1]	10	Rehab facility
December 2019	Norovirus GII.1 [P16]	41	Long-term care facility
December 2019	Norovirus GII.2 [P16]; Rotavirus	15	Long-term care facility
December 2019	Norovirus GII.4 Sydney [P16]	92	Long-term care facility
December 2019	Norovirus GII.4 Sydney [P16]	26	Long-term care facility
December 2019	Norovirus GII.6 [P7]; *Aeromonas hydrophila*	45	Long-term care facility
December 2019	Norovirus GII.7 [P7]	8	Hospital

Source of outbreak data: Ohio Disease Reporting System.

INSTITUTIONAL OUTBREAKS

In 2019, 187 institutional outbreaks were reported. Of these, 81 were confirmed. See Table 4 below for the confirmed institutional outbreaks.

Table 4: Confirmed Institutional Outbreaks, Ohio, 2019

Month of Onset	Causative Agent	County	# Ill	Setting
December 2018	Influenza virus	Medina	33	Assisted living facility
January 2019	*Bordetella pertussis*	Franklin	6	School
January 2019	Lice	Hamilton	7	Day care center
January 2019	Mumps virus	Mahoning	18	Correctional facility
January 2019	Norovirus GII.4 Sydney [P16]	Darke	33	Assisted living facility
January 2019	Norovirus GII.4 Sydney [Pe]	Auglaize	20	Assisted living facility
February 2019	Influenza virus	Franklin	6	School
February 2019	Influenza virus	Hamilton	203	School
February 2019	Influenza virus	Hamilton	203	School
February 2019	Influenza virus	Hamilton	190	School
February 2019	Influenza virus	Hamilton	190	School
February 2019	Influenza virus	Hamilton	70	School
February 2019	Norovirus genotype unknown	Lucas	71	Assisted living facility
February 2019	*Shigella sonnei*	Cuyahoga	24	Community-wide; private home; school
February 2019	Varicella-zoster virus	Cuyahoga	8	School
March 2019	*Salmonella* Enteritidis; *Salmonella* Typhimurium	Franklin	4	Day care center
March 2019	Norovirus GII.4 Sydney [P16]	Cuyahoga	41	Assisted living facility
March 2019	Norovirus GII.4 Sydney [P16]	Hamilton	27	Assisted living facility
March 2019	Norovirus GII.4 Sydney [Pe]; Norovirus GII.13 [P16]; *Salmonella* Thompson; Rotavirus A	Hamilton	21	Day care center
March 2019	*Salmonella* Agona	Franklin	2	Day care center
March 2019	*Shigella* spp.	Hamilton	9	Day care center
April 2019	Astrovirus	Cuyahoga	23	Memory unit, assisted living facility
April 2019	*Bordetella pertussis*	Clermont	10	School
April 2019	*Bordetella pertussis*	Franklin	5	Religious facility
April 2019	*Bordetella pertussis*	Franklin	5	School
April 2019	*Bordetella pertussis*	Hamilton	6	School
April 2019	*Bordetella pertussis*	Hamilton	2	School
April 2019	*Bordetella pertussis*	Scioto	2	School
April 2019	Methicillin resistant *Staphylococcus aureus*	Allen	25	Correctional facility
April 2019	*Salmonella* Paratyphi B, var L - Tartrate +	Delaware	3	Day care center
April 2019	*Streptococcus* spp.	Franklin	4	School
May 2019	*Bordetella pertussis*	Delaware	3	School
May 2019	*Bordetella pertussis*	Franklin	7	School
May 2019	Conjunctivitis	Richland	8	School
May 2019	Norovirus genotype unknown	Gallia	30	Assisted living facility
May 2019	Norovirus GI.3 [P3]	Franklin	55	School
May 2019	Norovirus GI.3 [P3]	Montgomery	11	Day care center
May 2019	Norovirus GII.4 Sydney [P16]	Putnam	15	Assisted living facility

Month of Onset	Causative Agent	County	# Ill	Setting
May 2019	*Shigella sonnei*	Stark	26	Day care center; private home
May 2019	Varicella-zoster virus	Athens	10	Correctional facility
May 2019	Varicella-zoster virus	Putnam	6	Day care center
May 2019	Varicella-zoster virus	Richland	6	Correctional facility
June 2019	Unknown respiratory pathogen	Clark	20	Assisted living facility
July 2019	*Escherichia coli* O111	Franklin	2	Day care center
August 2019	*Bordetella pertussis*	Franklin	5	School
August 2019	*Bordetella pertussis*	Hamilton	6	School
August 2019	*Bordetella pertussis*	Hamilton	2	School, sports team
August 2019	Coxsackie virus	Stark	3	Day care center
August 2019	Coxsackie virus	Union	8	School
August 2019	*Cryptosporidium* spp.	Franklin	6	Day care center; private home
August 2019	*Cryptosporidium* spp.	Hamilton	10	Day care center
August 2019	Shiga toxin-producing *Escherichia coli*	Mercer	13	Day care center
August 2019	Varicella-zoster virus	Union	20	School
September 2019	*Bordetella pertussis*	Delaware	19	School
September 2019	*Bordetella pertussis*	Hamilton	6	School
September 2019	Coxsackie virus	Richland	11	School
September 2019	*Escherichia coli* O157; *Shigella* spp.	Mercer	17	Day care center
September 2019	Norovirus GII.7 [P7]	Franklin	22	Day care center
September 2019	Respiratory syncytial virus (RSV)	Stark	4	Day care center
October 2019	*Bordetella pertussis*	Clermont	6	School
October 2019	*Bordetella pertussis*	Franklin	3	Day care center; private home
October 2019	*Bordetella pertussis*	Hamilton	7	School
October 2019	*Bordetella pertussis*	Hamilton	3	School
October 2019	*Bordetella pertussis*	Hamilton	3	School
October 2019	*Bordetella pertussis*	Hamilton	2	School
October 2019	*Bordetella pertussis*	Warren	4	School
October 2019	Coxsackie virus	Cuyahoga	15	Day care center
October 2019	Coxsackie virus	Delaware	11	Day care center
October 2019	*Mycoplasma pneumoniae*; Respiratory syncytial virus (RSV)	Medina	28	School
October 2019	Varicella-zoster virus	Mahoning	5	Correctional facility
November 2019	*Bordetella pertussis*	Darke	3	Day care center
November 2019	*Bordetella pertussis*	Hamilton	4	School
November 2019	*Bordetella pertussis*	Hamilton	3	School
November 2019	Impetigo	Clark	7	School, sports team
November 2019	Influenza virus	Franklin	32	School
November 2019	Respiratory syncytial virus (RSV)	Lake	18	Day care center
December 2019	*Bordetella parapertussis*	Delaware	9	School
December 2019	*Bordetella parapertussis*; Influenza virus	Hamilton	26	School

Month of Onset	Causative Agent	County	# Ill	Setting
December 2019	Norovirus GII.4 Sydney [P16]	Hamilton	15	Assisted living facility
December 2019	Respiratory syncytial virus (RSV)	Montgomery	3	Day care center
December 2019	Respiratory syncytial virus (RSV)	Richland	5	Day care center

Source of outbreak data: Ohio Disease Reporting System.

WATERBORNE OUTBREAKS

In 2019, seven confirmed and probable waterborne outbreaks were reported. These are detailed in Table 5.

Table 5: Confirmed and Probable Waterborne Outbreaks, Ohio, 2019

Month of Onset	Causative Agent	County	# Ill	Setting
October 2018	*Legionella pneumophila*	Hamilton	2	Hotel
May 2019	*Legionella pneumophila*	Franklin	16	Hospital
June 2019	*Escherichia coli* O103; Norovirus GII.3 [P12]	Miami	30	Wedding
June 2019	*Legionella pneumophila*	Delaware	23	Long-term care facility
July 2019	*Legionella pneumophila*	Lake	8	Private residence hot tub
August 2019	*Cryptosporidium* spp.	Franklin	4	Outdoor interactive fountain
August 2019	*Cryptosporidium* spp.	Tuscarawas	41	Water park

Source of outbreak data: Ohio Disease Reporting System.

ZOONOTIC OUTBREAKS

In 2019, 17 confirmed and probable zoonotic outbreaks were reported, as seen in Table 6.

Table 6: Confirmed and Probable Zoonotic Outbreaks, Ohio, 2019

Month of Onset	Causative Agent	County	# Ill	Type of Animal	Setting
January 2019	*Salmonella* Cerro; *Salmonella* Infantis; *Salmonella* London; *Salmonella* Newport	Multistate	12	Dogs (pig ear dog treats)	Private home
February 2019	*Campylobacter jejuni*	Allen	7	Goats	Farm; private home
February 2019	*Campylobacter jejuni*	Multistate	7	Puppies	Private home; pet stores
March 2019	*Salmonella* Anatum	Multistate	7	Live poultry	Private home
March 2019	*Salmonella* Braenderup	Multistate	25	Live poultry	Private home
March 2019	*Salmonella* Enteritidis	Multistate	11	Live poultry	Day care center; private home; workplace

Month of Onset	Causative Agent	County	# Ill	Type of Animal	Setting
March 2019	*Salmonella* Enteritidis	Multistate	21	Live poultry	Private home
March 2019	*Salmonella* Infantis	Multistate	6	Live poultry	Private home
April 2019	*Campylobacter jejuni*	Huron	2	Puppy	Private home
April 2019	*Cryptosporidium* spp.	Marion	2	Calves	Farm
May 2019	*Cryptosporidium* spp.	Lawrence	12	Calves	Agricultural event
May 2019	*Salmonella* Manhattan	Multistate	2	Live poultry	Private home
May 2019	*Salmonella* Newport	Multistate	4	Live poultry	Private home
July 2019	*Campylobacter jejuni*	Stark	3	Dog	Private home
July 2019	*Salmonella* Agona	Multistate	2	Live poultry	Private home
August 2019	*Salmonella* Oranienburg	Multistate	1	Live poultry	Private home
September 2019	*Salmonella* Infantis	Multistate	1	Live poultry	Private home

Source of outbreak data: Ohio Disease Reporting System.

Here are links to reports of multistate zoonotic outbreaks:

Outbreak of Multidrug-Resistant *Salmonella* Infections Linked to Contact with Pig Ear Pet Treats

Outbreak of Multidrug-resistant *Campylobacter* Infections Linked to Contact with Pet Store Puppies

Outbreaks of *Salmonella* Infections Linked to Backyard Poultry

In 2019, a second multistate outbreak of *Campylobacter* associated with Petland puppies was reported by the CDC with 56 cases from 17 states. *Campylobacter* infection is the most common bacterial cause of diarrheal illness in the United States. Most people infected with *Campylobacter* develop diarrhea (often bloody), fever, and stomach cramps two to five days after being exposed to the bacteria and most recover without treatment. However, people infected during this outbreak experienced a more severe illness since the usual antibiotics prescribed for *Campylobacter* infection did not work. Ohio reported seven cases from four counties (Butler, Fairfield, Franklin, and Pickaway) linked to the 2019 outbreak. This was the same strain of multidrug-resistant (MDR) *Campylobacter* that was associated with Petland puppies in 2016-2018. Petland obtains puppies from breeders in Ohio and out of state. When transported, animals from different locations comingle. The 2016-2018 investigation found that breeders may have prophylactically treated puppies with antibiotics. It was also noted that some pet stores treat animals empirically without consulting a veterinarian. The persistence of the MDR strain suggests that it may be established at the breeder level, transmitted to other puppies during transport, and/or perpetuated by empirical treatment administered at pet stores. Ohio's seven cases included three Petland employees and four persons who had purchased Petland puppies. The age range of cases was 8 months to 44 years; the median age was 25 years. Females constituted 57% of cases. Two were hospitalized; all survived. Onsets ranged from Feb. 13, 2019 to Jan. 13, 2020; median onset date was June 1, 2019. Duration was reported for six of the cases, ranging from four to 14 days. Median duration was eight days. *Campylobacter* bacteria isolated from clinical samples from ill people were resistant to commonly recommended first-line antibiotics. Prevention and control recommendations were provided to pet owners and pet store employees. Puppy owners were advised to wash hands promptly after contact with dogs and to monitor dogs for diarrhea. Pet store workers were provided with guidance about hand washing, safe practices around dogs, and safe clean-up of dog waste. Education about the responsible use of antibiotics to pet store workers continues. Additional prevention and control guidance is available from the CDC report.

Please refer to the Technical Notes for additional information on the outbreak data.

Acknowledgements: These outbreak investigations were performed by local public health personnel (nurses, sanitarians, epidemiologists) and healthcare professionals in the medical community. Laboratory analysis was done in local clinical labs, the ODHL, and the Ohio Department of Agriculture Laboratory. Our thanks to all these partners for their work in the investigation of outbreaks and the prevention of disease.

TECHNICAL NOTES

SPECIFIC DISEASES

Anaplasmosis: formerly known as human granulocytic ehrlichiosis (HGE).

Carbapenemase-Producing Carbapenem-Resistant Enterobacterales (CP-CRE): became reportable in Ohio on March 22, 2018. Counts are number of cases; a single person can have multiple cases of CP-CRE at any given time (different organism or mechanism). Data is shown by specimen collection date.

Chikungunya Virus Infection: not explicitly reportable in Ohio until May 1, 2015, but prior reporting was captured under "Other Arthropod-borne Diseases." Case reporting prior to 2015 may not be complete since this was not listed by name on Ohio's reportable disease list at that time.

Ehrlichiosis: formerly known as human monocytic ehrlichiosis (HME).

Hepatitis B, Perinatal Infection: shown by date of confirmatory testing.

Influenza-Associated Pediatric Mortality: includes cases for children younger than 18 years of age. Data in the "Month of Onset" table are by the month of death.

Influenza A Virus, Novel Human Infection: listed in the Vaccine-Preventable Diseases tables as it is an influenza A virus infection, even though in all likelihood there will not be a readily available flu vaccine for a novel virus infection.

La Crosse Virus Disease: also known as California serogroup virus disease.

Meningitis, Other Bacterial: includes cases of bacterial meningitis for which the agent was specified, excluding group A *Streptococcus*, group B *Streptococcus* (in newborns less than 3 months of age), *Haemophilus influenzae*, *Listeria monocytogenes*, *Mycobacterium tuberculosis, Neisseria meningitidis*, and *Streptococcus pneumoniae*. Cases of meningitis due to these agents are reported as those specific conditions.

Rabies, Animal: refers only to cases among animal species. The last reported case of human rabies in Ohio occurred in 1971.

***Salmonella* Paratyphi Infection:** became reportable in Ohio Jan. 1, 2019. Reporting prior to Jan. 1, 2019 was facilitated under "Salmonellosis."

***Salmonella* Typhi Infection:** became reportable in Ohio Jan. 1, 2019. Reporting prior to Jan. 1, 2019 was facilitated under "Typhoid Fever."

Spotted Fever Rickettsiosis: includes Rocky Mountain Spotted Fever (RMSF) and other spotted fever group *Rickettsia*.

***Streptococcus pneumoniae*, Invasive Disease, Ages <5 Years:** numbers include cases for all children younger than 5 years of age, regardless of drug-resistance pattern.

***Streptococcus pneumoniae*, Invasive Disease, Drug Resistant, Ages 5+ Years:** numbers include cases 5 years of age and older with intermediate resistance or resistance to one or more antimicrobial agents.

***Streptococcus pneumoniae*, Invasive Disease, Drug Susceptible, Ages 5+ Years:** numbers include cases 5 years of age and older with invasive *Streptococcus pneumoniae* that are susceptible or of unknown susceptibility to all antimicrobial agents tested.

Zika Virus Infection: became explicitly reportable in Ohio Sep. 16, 2016. Reporting prior to Sep. 16, 2016 was facilitated under "Other Arthropod-borne Diseases."

OUTBREAKS

Numbers indicate the number of outbreaks reported and do not reflect the number of cases involved in the outbreak, except as noted. Outbreak data for vaccine-preventable diseases (i.e., influenza, pertussis, varicella-zoster virus) only include confirmed outbreaks. All other outbreaks are confirmed, probable or suspected.

Outbreak data are not included in the "Age in Years" and "Sex" tables, and rates were not calculated in any table. Outbreak data are by year of report, so "Month" refers to the month of report, except as noted. The source of outbreak data is the ODH BID, the Ohio Disease Reporting System, and local health jurisdictions. ***Twenty-four multistate and multicounty outbreaks are not included in the "County" table; thus, county totals do not match totals. (There were 11 foodborne, one healthcare-associated and 12 zoonotic outbreaks that were multistate or multicounty.)*** A multistate outbreak is an outbreak where the exposure occurred in more than one state while a multicounty outbreak is an outbreak where the exposure occurred in more than one county.

Cases in the non-influenza vaccine-preventable outbreaks (i.e., pertussis, varicella-zoster virus) are either confirmed or probable status. Cases in all other outbreaks are confirmed, probable, or suspected.

Definitions for the six categories of outbreaks are from the ODH Infectious Disease Control Manual (IDCM). Foodborne outbreaks and waterborne outbreaks are also defined on the CDC's National Notifiable Diseases Surveillance System's website. Outbreak definitions for vaccine-preventable diseases are located in the disease-specific chapters of the IDCM.

Community: defined as two or more cases of similar illness with a common exposure in the community and not considered a foodborne or waterborne disease outbreak.

Foodborne: an incident in which two or more persons experience a similar illness after ingestion of a common food, and epidemiologic analysis implicates the food as the source of the illness. In addition, there are agent-specific criteria to confirm foodborne outbreaks.

Healthcare-associated: defined as the occurrence of a disease (illness) above the expected or baseline level, usually over a given period of time, as a result of being in a healthcare facility (e.g., hospital, long-term care facility) or receiving healthcare-associated products or procedures. The number of cases indicating the presence of an outbreak will vary according to the disease agent, size and type of population exposed, previous exposure to the agent, and the time and place of occurrence.

Institutional: defined as two or more cases of similar illness with a common exposure at an institution (e.g., correctional facility, day care center, group home, school) and not considered a foodborne or waterborne disease outbreak.

Waterborne: defined as any outbreak of an infectious disease, chemical poisoning, or toxin-mediated illness for which water is indicated as the source by an epidemiological investigation.

Zoonotic: defined as the occurrence of two or more cases of a similar illness with a common exposure to an animal source and not considered a foodborne or waterborne disease outbreak.

RATE CALCULATIONS

Population estimates for rates in the "Age in Years," "Sex," and "County of Residence" tables come from the 2019 U.S. Census estimates. Population data for rates in the "Year of Onset" table come from the U.S. Census estimates for each year. Rates were not calculated for the following conditions because they pertain to selected age populations and not the entire population. Rates were calculated in the "Age in Years" table only for the conditions below containing an asterisk (*) because appropriate population data were available for the denominator:

- Botulism, infant.
- Hepatitis B, perinatal infection.
- Influenza-associated pediatric mortality.
- Streptococcal disease, group B, in newborn.
- *Streptococcus pneumoniae*, invasive disease, ages < 5 years*.
- *Streptococcus pneumoniae*, invasive disease, drug resistant, ages 5+ years*.
- *Streptococcus pneumoniae*, invasive disease, drug susceptible, ages 5+ years*.

DISEASES NOT INCLUDED IN TABLES

There were no known cases in Ohio of the following reportable diseases during at least the past five years; thus, they are not included in the 2015-2019 disease tables (pages 6-7):

- Anthrax.
- *Candida auris* Infection.
- Cholera.
- Diphtheria.
- Eastern equine encephalitis virus disease.
- Hantavirus.
- Middle East respiratory syndrome.
- Plague.
- Poliomyelitis.
- Powassan virus disease.
- Psittacosis.
- Rabies, human.
- Rubella, congenital.
- Rubella, not congenital.
- Severe acute respiratory syndrome.
- Smallpox.
- St. Louis encephalitis virus disease.
- *Staphylococcus aureus*, resistant to Vancomycin (VRSA).
- Typhus fever, murine*.
- Viral hemorrhagic fever.
- Western equine encephalitis virus disease.
- Yellow fever.

* no longer reportable Sep. 16, 2016

Reportable diseases not included in the "Age in Years," "Sex," "Month of Onset," and "County of Residence" tables (pages 8-43) had no known cases reported in 2019.

SEROTYPES AND SEROGROUPS

The ODHL Microbiology Section performs serogrouping of Shiga toxin-producing *Escherichia coli* isolates, serogrouping of *Neisseria meningitidis* isolates, and serotyping of *Salmonella* isolates. Hospital and other clinical laboratories are encouraged to send *Salmonella*, *Neisseria meningitidis*, and Shiga toxin-producing *Escherichia coli* isolates to ODH for serotyping and serogrouping. ODH also requests *Listeria* and *Vibrio* isolates. *Haemophilus influenzae* (in children younger than 5 years of age) and Vancomycin-resistant *Staphylococcus aureus* isolates with a minimum inhibitory concentration (MIC) of 8 or greater are requested to be sent directly to the Centers for Disease Control and Prevention (CDC) Laboratory. For further information on the submission of isolates, please contact ODHL at 614-644-4656.

REFERENCES

1. Centers for Disease Control and Prevention. Antibiotic Resistance Threats in the United States, 2019. Atlanta, GA: U.S. Department of Health and Human Services, CDC; 2019. Available online at: https://www.cdc.gov/drugresistance/pdf/threats-report/2019-ar-threats-report-508.pdf.

2. Centers for Disease Control and Prevention. Algorithm to identify *Candida auris* based on phenotypic laboratory method and initial species identification. https://www.cdc.gov/fungal/diseases/candidiasis/pdf/testing-algorithm-by-method-temp.pdf. Last updated May 17, 2019. Accessed April 30, 2021.

3. Centers for Disease Control and Prevention. Carbapenem-resistant Enterobacterales (CRE). https://www.cdc.gov/hai/organisms/cre/index.html. Published Nov. 5, 2019. Accessed April 28, 2021.

4. Schoch CL, et al. NCBI Taxonomy: a comprehensive update on curation, resources and tools. Database (Oxford). https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=91347. Published 2020. Accessed April 28, 2021.