Monthly Communicable Disease Surveillance Report

December 2022

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HAMILTON COUNTY PUBLIC HEALTH
PREVENT. PROMOTE. PROTECT.

NOTIFIABLE COMMUNICABLE DISEASES

Hamilton County Public Health (HCPH) Jurisdiction

Number of Communicable Diseases Reported: 223

Most frequently reported communicable diseases:

- Influenza-associated hospitalization (n=149)
- Chronic hepatitis C (n=19)
- Chronic hepatitis B (n=9)
- Syphilis (n=8)
- Streptococcal pneumoniae (n=6)
- Streptococcal, Group A (invasive) (n=6)

Southwest Ohio (SWOH)

Number of Communicable Diseases Reported: 869

Most frequently reported communicable diseases:

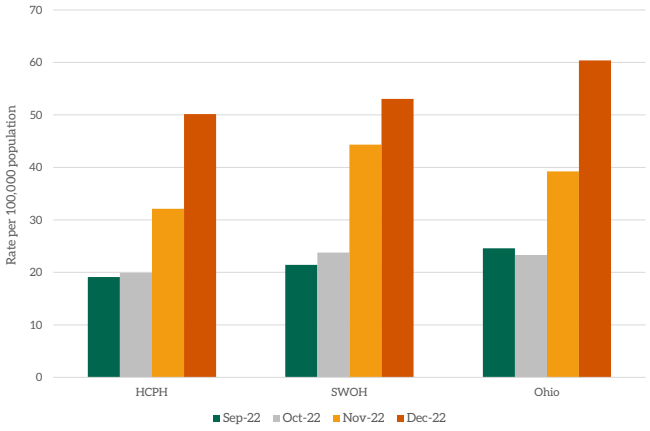
- Influenza-associated hospitalization (n=532)
- Chronic hepatitis C (n=121)
- Streptococcal pneumoniae (n=38)
- Chronic hepatitis B (n=32)
- Streptococcal, Group A (invasive) (n=22)

Summary

The overall rates of reported communicable diseases for HCPH, SWOH, and Ohio in December increased by 56%, 20% and 54% respectively (Figure 1). These rates are pro-rated to 30 days so they can be compared accurately. The Ohio rate (60.4) was the highest of the three rates, and the HCPH rate (50.2) was the lowest. The SWOH rate (53.1) was higher than the HCPH rate and lower than the SWOH rate. (Table 1).

Influenza-associated hospitalization was the most commonly reported communicable disease across SWOH, with Chronic hepatitis C and Streptococcal pneumoniae 2nd and 3rd respectively (Table 2). Influenza-associated hospitalization cases accounted for 61.2% of the total communicable diseases reported during December. The number of cases of Influenza-associated hospitalization reported for SWOH in December (532) was higher than the number of cases in the previous month (430). The rate of Influenza-associated hospitalization within Hamilton County for December was 30.3 per 100,000 residents. This rate was 1% lower than the SWOH rate of 30.6 per 100,000 residents.

Figure 1. 30-Day Rates of Reported Communicable Diseases in Ohio, Southwest Ohio, and Hamilton County Public Health Jurisdiction, September 2022 - December 2022



Chronic hepatitis C was the second most frequently reported communicable disease across SWOH. Chronic hepatitis (Hepatitis C and Hepatitis B combined) comprised 17.6% of the total communicable diseases reported during December. Southwest Ohio is currently on pace to have 13.4% fewer hepatitis cases than the previous year's average number of cases (191). The rate of chronic hepatitis within Hamilton County for December was 7.6 per 100,000 residents. This rate was 14% lower than the SWOH rate of 8.8 per 100,000 residents.

Table 1. Comparison of the Reported Cases of Notifiable Communicable Diseases by Location, December 2022

Location	Number of Reported Cases	Rate per 100,000	Rate Ratio†	Confidence Interval (99%)‡
HCPH	223	46.82	0.83	0.70 - 0.99
SWOH	869	49.52	0.88	0.80 - 0.96
Ohio	6,524	56.36	.	. - .

Streptococcal pneumoniae was the third most frequently reported disease in SWOH (Table 2). Streptococcal pneumoniae cases accounted for 4.4% of the total communicable diseases reported during December. The number of cases of Streptococcal pneumoniae reported for SWOH in December (38) was higher than the number of cases in the previous month (29). The rate of Streptococcal pneumoniae within Hamilton County for December was 1.7 per 100,000 residents. This rate was 20% lower than the SWOH rate of 2.2 per 100,000 residents.

NOTES: Data are provisional and are subject to change as data becomes finalized. Suspected, probable and confirmed cases are included in counts except for arboviral encephalitis and Zika virus diseases, of which only probable and confirmed cases are reported. Novel Influenza A cases are only confirmed cases. COVID-19, chlamydia and gonorrhea are not reported within this report. The completeness of reporting varies by region and can impact the incidences of reported diseases. This report reflects the time period of December 1-28, 2022. Data was accessed from the Ohio Disease Reporting System on 12/29/2022.

†Ratio of local rate to the Ohio rate.

‡Confidence intervals that do not contain the value of one are considered statistically significant.

Table 2. Cases of Notifiable Diseases in Southwest Ohio as Reported in ODRS by County, December 2022

Reportable Condition	County								Total
	Hamilton	Adams	Brown	Butler	Clermont	Clinton	Highland	Warren	
Amebiasis	1	.	.	.	.	.	.	.	**1**
C. auris	1	.	.	1	1	.	.	.	**3**
C. auris - Investigation	10	.	.	2	.	.	.	.	**12**
CP-CRE	2	.	.	1	1	.	.	.	**4**
Campylobacteriosis	5	.	.	1	1	.	.	2	**9**
Coccidioidomycosis	3	.	.	.	.	.	.	.	**3**
Cryptosporidiosis	.	.	.	2	.	.	.	.	**2**
E.Coli (shiga toxin producing)	3	.	.	1	.	.	.	.	**4**
Giardiasis	4	.	.	2	.	.	1	2	**9**
Haemophilus influenzae (invasive)	2	.	1	3	3	.	.	.	**9**
Hepatitis A	4	1	1	.	.	.	.	.	**6**
Hepatitis B (chronic)	17	1	1	5	2	3	.	3	**32**
Hepatitis C (acute)	.	.	.	2	.	.	.	.	**2**
Hepatitis C (chronic)	44	1	1	37	15	2	3	18	**121**
Influenza-associated hospitalization	243	4	13	125	56	7	34	50	**532**
Legionellosis	1	.	.	.	.	.	.	1	**2**
Leprosy	.	.	.	1	.	.	.	.	**1**
Listeriosis	.	.	.	1	.	.	.	.	**1**
Lyme Disease	1	1	1	1	2	.	1	2	**9**
Measles	.	.	.	1	.	1	.	.	**2**
Meningitis (aseptic/viral)	3	.	.	3	.	.	.	.	**6**
Meningitis (bacterial)	3	.	.	1	1	.	.	.	**5**
Monkeypox	2	.	.	.	.	.	.	.	**2**
Mumps	1	.	.	.	.	.	.	.	**1**
Salmonellosis	5	.	.	.	.	.	1	1	**7**
Shigellosis	1	.	.	.	.	.	.	.	**1**
Streptococcal pneumoniae (invasive)	14	.	1	9	5	1	2	6	**38**
Streptococcal, Group A (invasive)	9	.	.	10	1	.	.	2	**22**
Syphilis	11	.	1	1	1	.	.	.	**14**
Tuberculosis	2	.	.	.	.	.	.	1	**3**
Varicella	2	.	.	1	.	.	.	1	**4**
Yersiniosis	1	.	.	1	.	.	.	.	**2**
Total	**395**	**8**	**20**	**212**	**89**	**14**	**42**	**89**	**869**

Table 3. YTD Cases of Notifiable Diseases in Southwest Ohio as Reported in ODRS by County, January - December 2022

Reportable Condition	County								Total
	Hamilton	Adams	Brown	Butler	Clermont	Clinton	Highland	Warren	
Amebiasis	3	0	0	1	0	0	0	2	**6**
Babesiosis	1	0	0	0	0	0	0	0	**1**
Botulism (Infant)	2	0	0	0	1	0	0	0	**3**
Botulism - wound	0	0	0	1	0	0	0	0	**1**
C. auris	54	0	1	2	3	0	1	0	**61**
C. auris - Investigation	97	0	0	8	8	0	0	0	**113**
CP-CRE	27	2	4	16	9	4	5	6	**73**
CP-CRE - Investigation	0	0	0	0	0	2	0	0	**2**
Campylobacteriosis	100	4	14	47	29	6	5	36	**241**
Chikungunya virus	0	0	0	1	0	0	0	0	**1**
Coccidioidomycosis	10	0	2	2	2	0	0	2	**18**
Creutzfeldt-Jakob Disease	4	0	0	1	0	0	0	0	**5**
Cryptosporidiosis	10	2	0	7	2	1	0	4	**26**
Cyclosporiasis	0	0	0	1	2	0	0	0	**3**
Dengue	1	0	0	2	0	0	0	0	**3**
E.Coli (shiga toxin producing)	31	1	1	17	7	0	2	11	**70**
Ehrlichiosis/Anaplasmosis	1	1	0	1	0	0	0	2	**5**
Giardiasis	38	0	2	10	5	0	3	14	**72**
Haemophilus influenzae (invasive)	22	0	1	12	8	0	0	2	**45**
Hemolytic uremic syndrome (HUS)	0	0	0	0	0	0	0	1	**1**
Hepatitis A	26	4	4	5	2	4	6	15	**66**
Hepatitis B (acute)	12	1	1	3	3	8	1	2	**31**
Hepatitis B (chronic)	202	23	17	146	27	17	28	76	**536**
Hepatitis C (acute)	10	0	0	2	0	0	0	1	**13**
Hepatitis C (chronic)	738	41	75	393	157	37	51	210	**1702**
Hepatitis C - Perinatal Infection	1	2	0	0	3	0	0	0	**6**
Hepatitis E	1	0	0	1	0	0	0	0	**2**
Influenza-associated hospitalization	579	8	41	290	158	18	63	135	**1292**
Legionellosis	19	0	2	16	4	1	0	9	**51**
Leprosy	0	0	0	1	0	0	0	0	**1**

Table 3. YTD Cases of Notifiable Diseases in Southwest Ohio as Reported in ODRS by County, January - December 2022, Continued

Reportable Condition	County								Total
	Hamilton	Adams	Brown	Butler	Clermont	Clinton	Highland	Warren	
Listeriosis	2	0	0	1	1	0	0	0	**4**
Lyme Disease	58	16	11	6	40	1	19	18	**169**
MIS-C associated with COVID-19	8	1	0	7	0	0	0	2	**18**
Malaria	2	0	0	3	0	0	0	0	**5**
Measles	1	0	0	1	0	1	0	0	**3**
Meningitis (aseptic/viral)	28	0	2	12	10	1	3	10	**66**
Meningitis (bacterial)	14	0	1	12	4	2	0	6	**39**
Meningococcal disease	1	0	0	0	0	0	0	0	**1**
Monkeypox	27	1	0	4	0	0	0	2	**34**
Mumps	4	1	0	0	0	0	0	2	**7**
Pertussis	9	0	1	8	2	1	1	1	**23**
Psittacosis	1	0	0	0	0	0	0	0	**1**
Q fever (acute)	0	0	0	0	0	0	0	1	**1**
Q fever (chronic)	1	0	0	0	0	0	0	0	**1**
Rubella (not congenital)	0	0	0	0	1	0	0	0	**1**
Salmonella Typhi	0	0	0	0	1	0	0	0	**1**
Salmonellosis	86	5	5	36	27	3	6	25	**193**
Shigellosis	26	0	0	6	1	0	0	3	**36**
Spotted Fever Rickettsiosis	9	4	3	1	5	2	4	2	**30**
St. Louis encephalitis virus disease	0	0	0	1	0	0	0	0	**1**
Streptococcal pneumoniae (invasive)	92	0	4	41	20	6	8	18	**189**
Streptococcal, Group A (invasive)	67	0	3	38	19	1	3	17	**148**
Streptococcal, Group B (in newborn)	5	0	0	1	0	1	0	0	**7**
Syphilis	214	0	6	46	9	4	1	6	**286**
Tuberculosis	24	0	1	8	3	2	1	5	**44**
Tularemia	0	1	0	0	0	0	0	0	**1**
Typhus fever	0	0	0	1	0	0	0	0	**1**
Varicella	28	0	0	9	6	0	3	9	**55**
Vibriosis	1	0	0	2	0	0	0	2	**5**
West Nile virus infection (WNV)	0	0	0	1	0	0	0	0	**1**
Yersiniosis	7	0	0	3	2	0	0	2	**14**
Total	**2704**	**118**	**202**	**1234**	**581**	**123**	**214**	**659**	**5835**

Table 4. YTD Cases of Notifiable Diseases in Hamilton County, January - Deecember 2022

Reportable Disease	December 2021	YTD 2021	December 2022	YTD 2022
Amebiasis	0	1	1	3
Babesiosis	0	0	0	1
Botulism (Infant)	0	0	0	2
Brucellosis	0	1	0	0
C. auris	9	26	1	54
C. auris - Investigation	6	51	10	97
CP-CRE	1	21	2	18
Campylobacteriosis	5	73	5	100
Coccidioidomycosis	1	9	3	10
Creutzfeldt-Jakob Disease	2	5	0	4
Cryptosporidiosis	0	9	0	10
Cyclosporiasis	0	3	0	0
E.Coli (shiga toxin producing)	3	31	3	31
Ehrlichiosis/Anaplasmosis	0	2	0	1
Giardiasis	4	57	4	38
Haemophilus influenzae (invasive)	3	20	2	22
Hantavirus	0	1	0	0
Hemolytic uremic syndrome (HUS)	0	1	0	0
Hepatitis A	3	52	4	26
Hepatitis B (acute)	1	6	0	12
Hepatitis B (chronic)	22	292	17	202
Hepatitis C (acute)	0	6	0	10
Hepatitis C (chronic)	61	904	44	738
Hepatitis C - Perinatal Infection	0	4	0	1
Hepatitis E	0	1	0	1
Influenza-associated hospitalization	26	42	243	579
Legionellosis	0	26	1	19

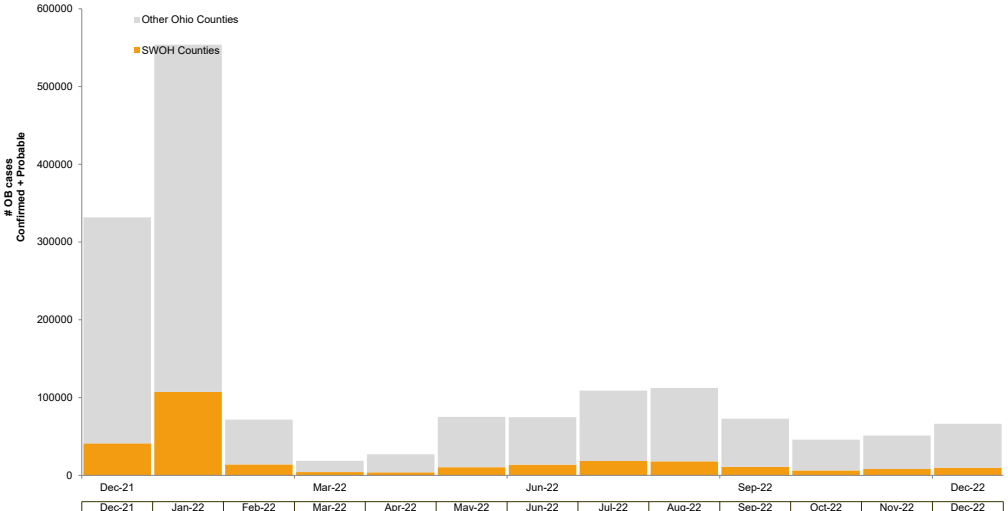
Reportable Disease	December 2021	YTD 2021	December 2022	YTD 2022
Listeriosis	0	6	0	2
Lyme Disease	3	61	1	58
MIS-C associated with COVID-19	3	31	0	8
Malaria	0	8	0	2
Measles	0	0	0	1
Meningitis (aseptic/viral)	5	36	3	28
Meningitis (bacterial)	1	22	3	14
Meningococcal disease	0	2	0	1
Monkeypox	0	0	2	27
Mumps	0	2	1	4
Pertussis	1	4	0	9
Psittacosis	0	2	0	1
Q fever (acute)	0	1	0	0
Q fever (chronic)	0	0	0	1
Salmonellosis	4	65	5	86
Shigellosis	1	18	1	26
Spotted Fever Rickettsiosis	0	12	0	9
Staphylococcal aureus (VISA)	0	1	0	0
Streptococcal pneumoniae (invasive)	4	48	14	92
Streptococcal, Group A (invasive)	4	45	9	67
Streptococcal, Group B (in newborn)	0	4	0	5
Syphilis	7	271	11	214
Tuberculosis	6	37	2	24
Typhus fever	0	1	0	0
Varicella	2	22	2	28
Vibriosis	0	5	0	1
Yersiniosis	1	4	1	7

SARS-CoV-2 (COVID-19) Outbreak

Chinese Health Officials identified the novel coronavirus, now known as SARS-CoV-2 or COVID-19, in December, 2019. Due to rapid global spread of disease, the World Health Organization declared COVID-19 a pandemic March 11, 2020. The United States identified its first case of COVID-19 January 21, 2020 and declared COVID-19 a national emergency March 13, 2020. Outbreak confirmed and probable cases increased rapidly between March and April, 2020. After remaining steady through May and June, 2020, Ohio experienced a spike in confirmed and probable cases in July, 2020. After a decrease in cases through August and September, 2020, Ohio experienced a significant spike in November and December, 2020. Cases began to decrease in January, 2021 and continued to decline through June, 2021, with the exception of a slight increase in cases in April, 2021. From July through September 2021 Ohio experienced an increase in confirmed and probable cases. After a decline in October 2021, Ohio experienced a rapid increase from November, 2021 through January, 2022. In 2022 Ohio experienced increasing cases from April to July and from October to December. The Southwest Ohio (SWOH) counties recognize the same pattern of confirmed and probable cases as Ohio. As of December 28, 2022, cases in Ohio and SWOH are increasing. The SWOH counties account for 524,007 confirmed and probable cases.

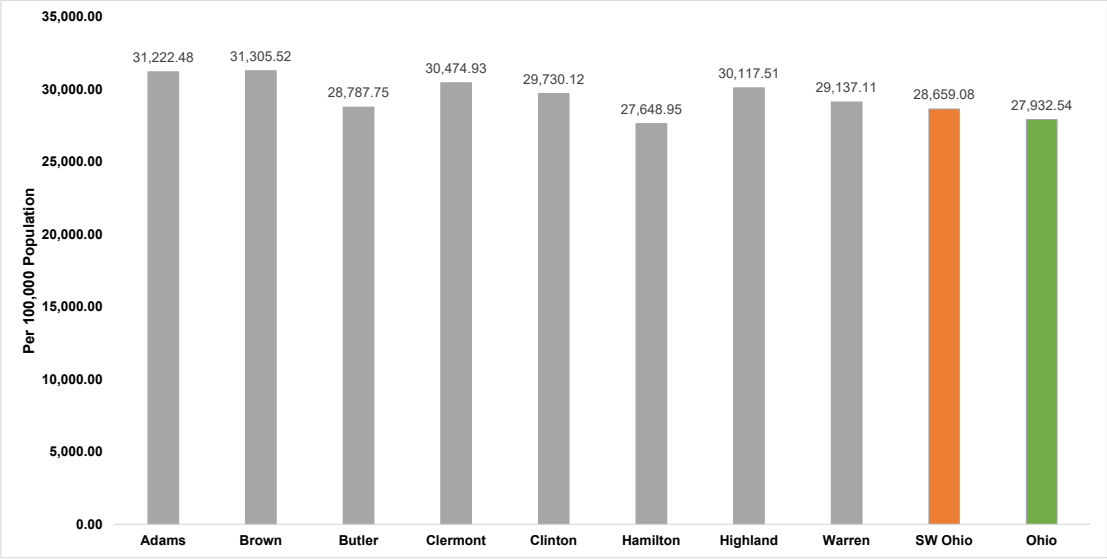
Overall, the SWOH rate is higher than the Ohio rate (Figure 3). The SWOH region accounts for 15.9 percent of Ohio cases. Brown County has the highest rate of the 8 SWOH counties, followed by Adams County and Clermont County. Currently the Hamilton County rate is lower than the Ohio rate, while all other counties in the SWOH region have rates that are higher than the Ohio rate.

Figure 2. Number of Confirmed and Probable Cases of COVID-19 in Ohio and Southwest Ohio Counties, December 2021 - December 2022



	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
Other Ohio Counties	290504	446446	57538	14481	23231	64706	61088	90379	94430	61881	39662	43027	56446
SWOH Counties	41222	107390	14144	4259	3840	10463	13709	18561	18009	10984	6328	8134	9773

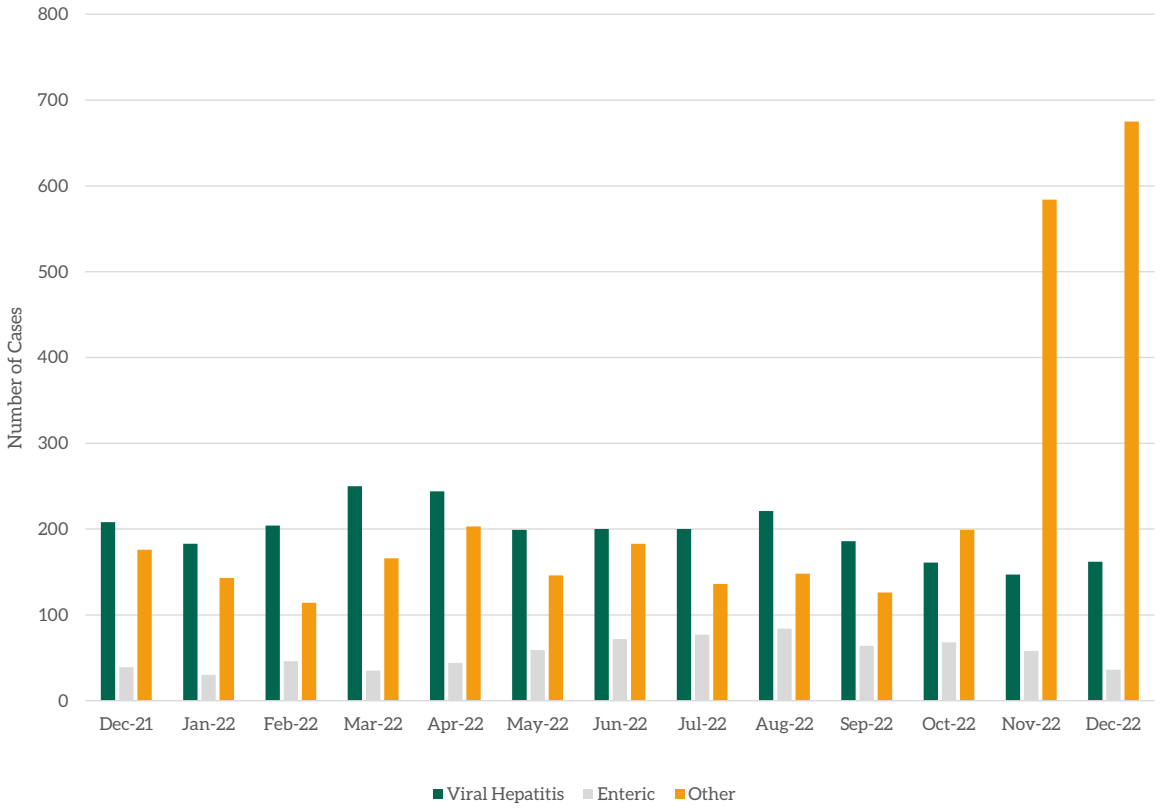
Figure 3. Rate of Confirmed and Probable Cases of COVID-19 in Ohio and Southwest Ohio Counties, March 9, 2020 - December 28, 2022



NOTES: This data is provisional and subject to change when additional information is gained. Outbreak confirmed positive cases between March 9, 2020 and December 28, 2022 were used for analysis. Cases were selected based on address at diagnosis. Confirmed and probable cases determined by date reported to local health department.

Source: Ohio Department of Health, Ohio Disease Reporting System. Data reported as of December 30, 2022. Outbreak confirmed and probable cases have to meet the criteria set by ODH. Detailed information regarding the statewide COVID-19 outbreak is available at: https://coronavirus.ohio.gov/wps/portal/gov/covid-19/home

Figure 4. Notifiable Communicable Diseases in Southwest Ohio by Disease Category as Reported in ODRS, December 2021 - December 2022*



SYNDROMIC SURVEILLANCE

Emergency Department Visits

Number of EpiCenter alerts received: 6

Types of EpiCenter alerts:

- Infectious Disease Symptoms (n=6)
- Syndromic Symptoms (n=0)

One anomaly received in EpiCenter was dispositioned as not a health event. The alerts received for Hamilton County for December 1 - December 28 are summarized in Table 5 (page 8). Constitutional and respiratory related syndromic hospital visits are presented for the entire month for Hamilton County in Figures 6 and 7 respectively (page 8).

*Suspected, Probable and Confirmed cases included in the counts. Cases counted by month reported to the local health department. STIs (i.e., Chlamydia, Gonorrhea, and Syphilis) are excluded from the analysis. Diseases are assigned to mutually exclusive categories, this means that disease cases are NOT included in more than one category shown in Figure 4. All cases are assigned to one of the categories.

Table 5. Emergency Department Visit Anomalies for Hamilton County, December 2022

Anomaly Classifier	Event Date	Alert Category	Analysis Method	Aggregated By	Actual Value	Predicted Value	Threshold Value	Final Dispsition
Diarrhea - Not Watery/Bloody	12/26/2022	Infectious Disease	Recursive Least Squares	Facility Location	33	12.7	32.2	Active
Diarrhea - Not Watery/Bloody	12/26/2022	Infectious Disease	Exponential Moving Average	Facility Location	34	11.3	33.9	Active
Diarrhea - Not Watery/Bloody	12/26/2022	Infectious Disease	Cusum EMA	Facility Location	34	11.5	33.4	Active
Vomiting	12/20/2022	Infectious Disease	Recursive Least Squares	Facility Location	85	55.8	84.0	Active
Vomiting	12/20/2022	Infectious Disease	Recursive Least Squares	Home Location	75	48.2	72.2	Active
Paralysis	12/5/2022	Infectious Disease	Recursive Least Squares	Home Location	17	8.2	16.0	Not a health event

Figure 6. Constitutional-related ED Visits, Hamilton County, Ohio, December 2022

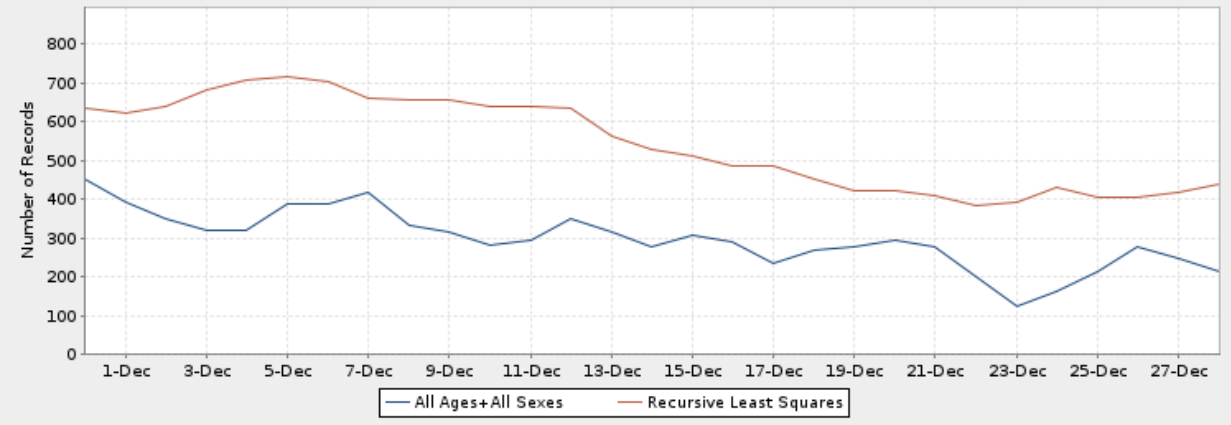


Figure 7. Respiratory-related ED Visits, Hamilton County, Ohio, December 2022