



**CUYAHOGA COUNTY  
BOARD OF HEALTH**

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**Five-Year Summary  
Reportable Infectious Diseases  
Cuyahoga County, Ohio**

**2019-2023**

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# Acknowledgements

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This report was a collaborative effort among Communicable Disease Investigators and Epidemiologists from the Cuyahoga County Board of Health (CCBH).

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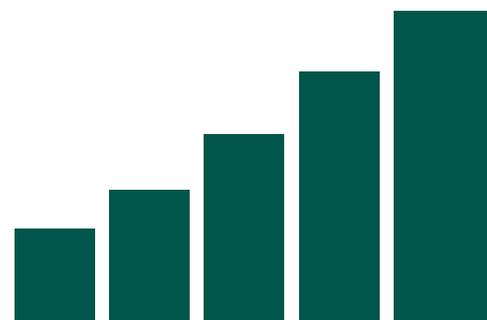
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# Introduction

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In compliance with state law, the occurrence/diagnosis of certain infectious diseases is reportable to local and state health departments (Ohio Administrative Code Chapter 3701-3).

This report is a five-year summary of infectious disease data and notable highlights, based on information collected by the Cuyahoga County Board of Health. It provides the following:

- A summary of the different types of illness outbreaks reported to CCBH
- Historical data regarding reportable diseases and infectious disease events

It is important to note that the COVID-19 pandemic significantly impacted infectious disease surveillance and access to testing and healthcare services. Data from the pandemic years may be underreported due to these factors.

The report does not include information about all reportable communicable diseases. Specifically, Tuberculosis data are exclusively managed by the Tuberculosis Clinic at MetroHealth Medical Center.

Sexually transmitted disease data [can be found on the CCBH HIV/STI Data Dashboard](#)



# Reportable Conditions in Cuyahoga County 2019-2023

<b>Table 1.</b>	<b>2019</b>		<b>2020</b>		<b>2021</b>		<b>2022</b>		<b>2023</b>		<b>Median</b>		<b>Mean</b>	
<b>General Infectious Diseases</b>	<b>N</b>	<b>Rate</b>	<b>N</b>	<b>Rate</b>	<b>N</b>	<b>Rate</b>								
Aseptic Meningitis	19	2.2	11	1.3	13	1.5	10	1.1	23	2.6	13	1.5	15	1.7
Coccidioidomycosis	0	**	1	0.1	0	**	2	0.2	4	0.5	1	0.1	1	0.2
Creutzfeldt-Jakob disease (CJD)	5	0.6	2	0.2	1	0.1	5	0.6	2	0.2	2	0.2	3	0.3
Haemophilus influenzae, invasive	22	2.5	4	0.5	12	1.4	19	2.2	30	3.4	19	2.2	17	2.0
Legionnaires' disease	112	12.9	72	8.3	85	9.8	73	8.4	77	8.8	77	8.8	84	9.6
Leprosy (Hansen disease)	0	**	0	**	1	0.1	1	0.1	0	**	0	**	0	**
Meningitis, bacterial (non-Neisseria)	4	0.5	7	0.8	7	0.8	10	1.1	6	0.7	7	0.8	7	0.8
Mpox	0	**	0	**	0	**	64	7.4	0	**	0	**	13	1.5
Streptococcal disease, Group A, invasive	61	7.0	79	9.1	52	6.0	51	5.9	107	12.3	61	7.0	70	8.0
Streptococcal disease, Group B, newborn	5	0.6	3	0.3	5	0.6	6	0.7	7	0.8	5	0.6	5	0.6
Streptococcal Toxic Shock Syndrome	0	**	1	0.1	0	**	0	**	2	0.2	0	**	1	0.1
Streptococcus pneumoniae, invasive disease, non-resistant or unknown resistance	34	3.9	24	2.8	28	3.2	34	3.9	37	4.3	34	3.9	31	3.6
Streptococcus pneumoniae, invasive disease, resistant	34	3.9	16	1.8	17	2.0	15	1.7	23	2.6	17	2.0	21	2.4
Toxic Shock Syndrome	0	**	0	**	0	**	0	**	0	**	0	**	0	**
Staphylococcus aureus, with intermediate resistance to vancomycin (VISA)	0	**	0	**	0	**	0	**	0	**	0	**	0	**

<b>Table 2.</b>	<b>2019</b>		<b>2020</b>		<b>2021</b>		<b>2022</b>		<b>2023</b>		<b>Median</b>		<b>Mean</b>	
<b>Hepatitis</b>	<b>N</b>	<b>Rate</b>	<b>N</b>	<b>Rate</b>	<b>N</b>	<b>Rate</b>								
Hepatitis A	32	3.7	31	3.6	5	0.6	0	**	0	**	5	0.6	14	1.6
Hepatitis B, acute	4	0.5	1	0.1	3	0.3	3	0.3	5	0.6	3	0.3	3	0.4
Hepatitis B, chronic	122	14.0	97	11.1	103	11.8	107	12.3	137	15.7	107	12.3	113	13.0
Hepatitis C, acute	4	0.5	7	0.8	5	0.6	1	0.1	2	0.2	4	0.5	4	0.4
Hepatitis C, chronic	600	68.9	1,100	126.4	901	103.5	530	60.9	271	31.1	600	68.9	680	78.2
Hepatitis E	0	**	1	0.1	0	**	0	**	1	0.1	0	**	0	**

# Reportable Conditions in Cuyahoga County 2019-2023

<b>Table 3.</b>	<b>2019</b>		<b>2020</b>		<b>2021</b>		<b>2022</b>		<b>2023</b>		<b>Median</b>		<b>Mean</b>	
<b>Enteric Diseases</b>	<b>N</b>	<b>Rate</b>	<b>N</b>	<b>Rate</b>	<b>N</b>	<b>Rate</b>								
Amebiasis	0	**	1	0.1	1	0.1	0	**	0	**	0	**	0	**
Botulism, foodborne	0	**	0	**	0	**	0	**	0	**	0	**	0	**
Campylobacteriosis	193	22.2	122	14.0	134	15.4	162	18.6	155	17.8	155	17.8	153	17.6
Cryptosporidiosis	13	1.5	3	0.3	7	0.8	10	1.1	10	1.1	10	1.1	9	1.0
Cyclosporiasis	0	**	0	**	2	0.2	1	0.1	3	0.3	1	0.1	1	0.1
<i>E. coli</i> O157:H7 and other enterohemorrhagic	40	4.6	23	2.6	41	4.7	35	4.0	39	4.5	39	4.5	36	4.1
Giardiasis	32	3.7	18	2.1	20	2.3	23	2.6	8	0.9	20	2.3	20	2.3
Hemolytic uremic syndrome (HUS)	0	**	0	**	0	**	0	**	0	**	0	**	0	**
Listeriosis	1	0.1	1	0.1	1	0.1	4	0.5	0	**	1	0.1	1	0.2
Salmonellosis	87	10.0	80	9.2	100	11.5	70	8.0	89	10.2	87	10.0	85	9.8
Shigellosis	50	5.7	23	2.6	21	2.4	34	3.9	68	7.8	34	3.9	39	4.5
Typhoid Fever	0	**	0	**	0	**	0	**	0	**	0	**	0	**
Vibriosis, other (not cholera)	3	0.3	1	0.1	7	0.8	1	0.1	4	0.5	3	0.3	3	0.4
Yersiniosis	5	0.6	4	0.5	4	0.5	4	0.5	5	0.6	4	0.5	4	0.5

<b>Table 4.</b>	<b>2019</b>		<b>2020</b>		<b>2021</b>		<b>2022</b>		<b>2023</b>		<b>Median</b>		<b>Mean</b>	
<b>Vaccine Preventable Diseases</b>	<b>N</b>	<b>Rate</b>	<b>N</b>	<b>Rate</b>	<b>N</b>	<b>Rate</b>								
Influenza A - novel virus	0	**	0	**	0	**	0	**	0	**	0	**	0	**
Influenza-associated hospitalization	801	92.0	918	105.5	11	1.3	701	80.5	334	38.4	701	80.5	553	63.5
Influenza-associated pediatric mortality	1	0.1	1	0.1	0	**	1	0.1	0	**	1	0.1	1	0.1
Meningococcal disease	1	0.1	1	0.1	0	**	1	0.1	0	**	1	0.1	1	0.1
Mumps	5	0.6	1	0.1	1	0.1	3	0.3	1	0.1	1	0.1	2	0.3
Pertussis	26	3.0	6	0.7	3	0.3	4	0.5	7	0.8	6	0.7	9	1.1
Rubella	0	**	0	**	0	**	1	0.1	0	**	0	**	0	**
Varicella	22	2.5	5	0.6	14	1.6	10	1.1	4	0.5	10	1.1	11	1.3

# Reportable Conditions in Cuyahoga County 2019-2023

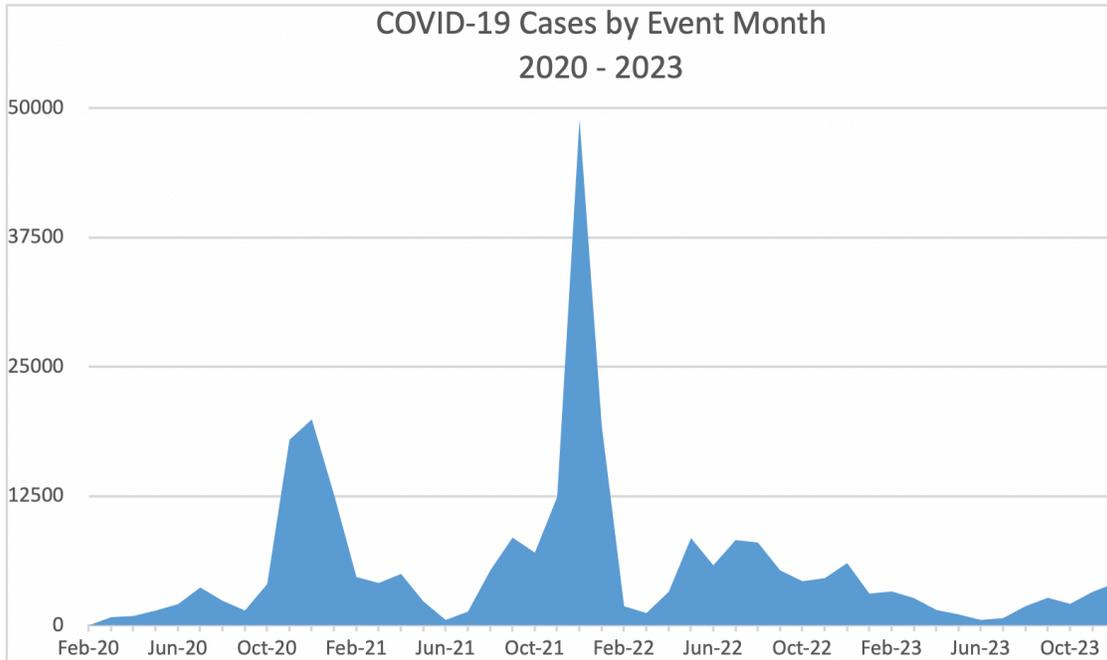
<b>Table 5.</b>	<b>2019</b>		<b>2020</b>		<b>2021</b>		<b>2022</b>		<b>2023</b>		<b>Median</b>		<b>Mean</b>	
<b>Zoonotic Diseases</b>	<b>N</b>	<b>Rate</b>	<b>N</b>	<b>Rate</b>	<b>N</b>	<b>Rate</b>								
Arboviral	1	0.1	0	**	1	0.1	0	**	2	0.2	1	0.1	1	0.1
Brucellosis	0	**	1	0.1	0	**	0	**	1	0.1	0	**	0	**
Dengue	2	0.2	0	**	0	**	1	0.1	1	0.1	1	0.1	1	0.1
Lyme disease	37	4.3	53	6.1	58	6.7	51	5.9	79	9.1	53	6.1	56	6.4
Malaria	6	0.7	2	0.2	6	0.7	3	0.3	5	0.6	5	0.6	4	0.5
Rocky Mountain Spotted Fever (RMSF)	3	0.3	2	0.2	2	0.2	3	0.3	2	0.2	2	0.2	2	0.3

<b>Table 6.</b>	<b>2019</b>		<b>2020</b>		<b>2021</b>		<b>2022</b>		<b>2023</b>		<b>Median</b>		<b>Mean</b>	
<b>Healthcare Associated Infections</b>	<b>N</b>	<b>Rate</b>	<b>N</b>	<b>Rate</b>	<b>N</b>	<b>Rate</b>								
C. auris, clinical	0	**	0	**	0	**	10	1.1	11	1.3	0	**	4	0.5
C. auris, screening	0	**	0	**	0	**	49	5.6	69	7.9	0	**	24	2.7
Carbapenemase-producing organism, clinical	60	6.9	63	7.2	69	7.9	76	8.7	138	15.9	69	7.9	81	9.3
Carbapenemase-producing organism, screening	0	**	0	**	0	**	0	**	20	2.3	0	**	4	0.5



# COVID-19

## 2019-2023



Reported Cases: 270,000  
 Hospitalizations: 10,595  
 Deaths: 3,025

Age (years)	
<1 - 19	15.1%
20-29	16.3%
30-39	16.3%
40-49	13.3%
50-59	13.5%
60-69	11.8%
70-79	7.4%
80+	6.3%

Ethnicity	
Non-Hispanic or Non-Latino	73.5%
Unknown	23.6%
Hispanic or Latino	2.9%

Sex	
Female	57.0%
Male	43.0%

Race	
White	54.6%
Black	22.6%
Unknown	13.3%
Other	7.3%
Asian	2.1%

# COVID-19

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## 2019-2023

CCBH reported the first three cases of COVID-19 in Ohio on March 9, 2020. This caused the entire state of Ohio to be placed under a state of emergency. Two days later, COVID-19 was declared a pandemic by the World Health Organization (WHO). A primary concern for public health at that moment was to implement prevention measures to “slow the spread” or “flatten the (epidemiological) curve.” While the pandemic was a very challenging time for public health, years of planning and preparing for such a scenario were put into motion.

COVID-19 is a Class A reportable disease in Ohio, requiring local public health entities to be notified upon recognition of a case, suspect case, or positive laboratory result. This protocol allowed public health to quickly initiate investigations and implement prevention measures.

The initial phases of the pandemic called for quick identification and isolation of ill individuals, contact tracing and quarantine for those identified as close contacts. Additional prevention measures, known as non-pharmaceutical interventions (NPI) included masking, social distancing, frequent handwashing and cleaning of common surfaces. In order to prevent further transmission from occurring in public settings, Ohio’s governor ordered the temporary closing of all schools and “non-essential” businesses.

As would be done in any public health emergency, CCBH activated its Incident Command System (ICS). This system is designed to deliver improved coordination of operations and directives. Health department staff were assigned as teams to a wide variety of important duties, which included:

- Case investigation
- Contact tracing
- Environmental risk assessments
- Investigation of public complaints
- Media response
- Outbreak detection
- Public call center

# COVID-19

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## 2019-2023

The response quickly became a 24/7 effort with dedicated public health professionals working around the clock to mitigate the impact of this novel and deadly virus.

Initially, testing to identify COVID-19 was very limited. Testing was further complicated by the large number of sick people seeking testing as well as the need to isolate those individuals in order to prevent transmission from occurring within medical centers. Drive-thru testing locations were soon set up across the county. In time, scientific advances brought rapid detection of the virus in the form of at-home test kits, which became widely available in August 2020. Access to these tests was provided through the United States government, which offered four free test kits per household via COVIDTests.gov. The government supplied these test kits several times throughout the pandemic.

As schools, restaurants, and other businesses began to reopen, CCBH saw a sharp increase in the number of cases reported. Despite following guidance from the Ohio Department of Health (ODH) and Centers for Disease Control and Prevention (CDC) about reducing local transmission, CCBH still investigated 1,597 outbreaks. Settings included businesses, congregate care, healthcare, and schools during 2020 - 2023.

In December 2020, the COVID-19 vaccine became available to priority groups in Ohio. CCBH, in partnership with volunteers from the Medical Reserve Corps (MRC) and other volunteer organizations, hosted mass vaccination clinics at various sites across the county. As the vaccine became more widely available in 2021, the eligibility restrictions began to include the general population. When the vaccine eventually made its way to medical practices and pharmacies, CCBH moved from mass vaccination clinics toward targeting populations still in need of vaccine. As more became known about the efficacy of the vaccine, additional booster doses were recommended.

# COVID-19

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## 2019-2023

As of November 9, 2023, a total of 820,729 Cuyahoga County residents (66.45%) completed the initial two-dose vaccine series. Unfortunately, as additional boosters were recommended, the number of residents receiving them significantly decreased. This trend was also seen across Ohio and the United States. (For additional COVID-19 vaccine data, visit [Archived COVID-19 Reporting | DataOhio](#)).

CCBH would experience another sharp increase in the number of cases reported with the emergence of the new Omicron variant in December 2021. Also that month, CCBH reported its highest number of cases with 49,000. As new variants appeared, so did small increases in case counts, but none compared to the winter of 2021.

In total, 270,005 COVID-19 cases were reported to CCBH during March 2020 – December 2023. Of these cases, 10,595 were hospitalized and 3,025 deaths were reported due to COVID-19. For additional data about CCBH COVID-19 cases, visit [COVID-19 Dashboard & Resources – CCBH](#).

While the federal government declared the end of the COVID-19 Public Health Emergency on May 11, 2023, it is clear that COVID-19 is here to stay. On May 12, 2023, COVID-19 became a Class B disease in Ohio.

The COVID-19 virus is continuously mutating and producing new variants, causing a newfound awareness and vigilance on behalf of public health. Lessons learned from this pandemic will also help with preparation for the next emerging or re-emerging infectious disease. In the meantime, we will continue to promote traditional prevention strategies such as staying home when sick, frequent handwashing, and staying up-to-date on vaccinations, which have proven effective relative to COVID-19 and other communicable illnesses.

# Influenza



Influenza (flu) is a contagious respiratory illness that affects millions of people each year.

Flu season in the United States traditionally begins in October and lasts into May.

During these months, the CDC, ODH, and CCBH closely observe flu activity.

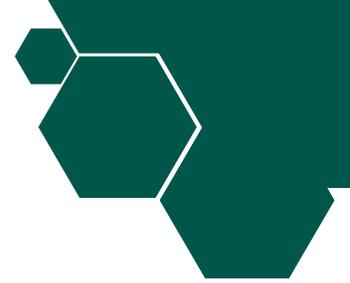
## CDC estimates of the annual impact of flu-related illness 2010-2023

- 9.3 million - 41 million cases of illness
- 100,000 - 710,000 hospitalizations
- 4,900 - 51,000 deaths

CCBH monitors several surveillance systems weekly to provide the public with information about local and regional flu activity. These systems include:

- Emergency department (ED) visits for fever and influenza-like illness (ILI)
- Number of influenza-associated hospitalizations (IAH)
- Over-the-counter (OTC) sales data for pediatric cold products, anti-fever products, and thermometer sales
- Vital statistics for pneumonia and influenza-related deaths
- Voluntary school absenteeism data

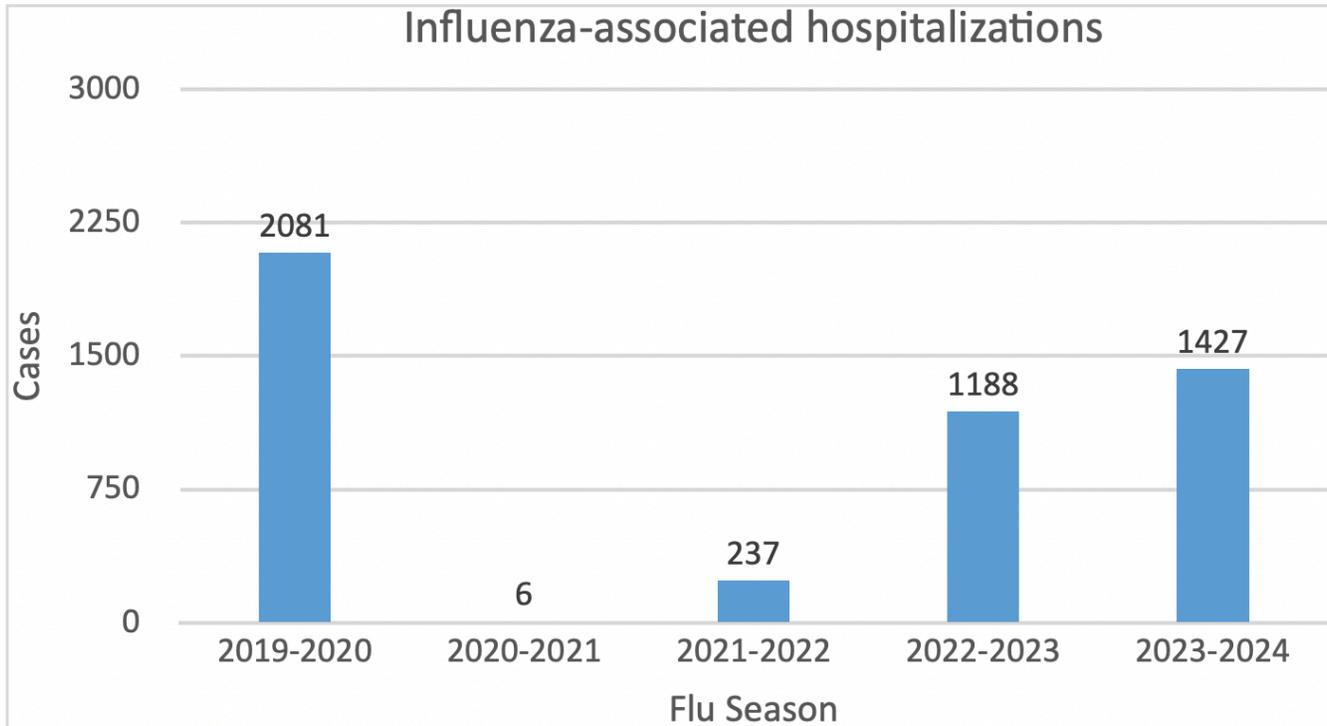




# Influenza

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IAH are an accurate measure of flu severity. This bar graph displays the total number of hospitalizations reported to CCBH and the Cleveland Department of Public Health (CDPH) over the past five flu seasons (2019-2024).



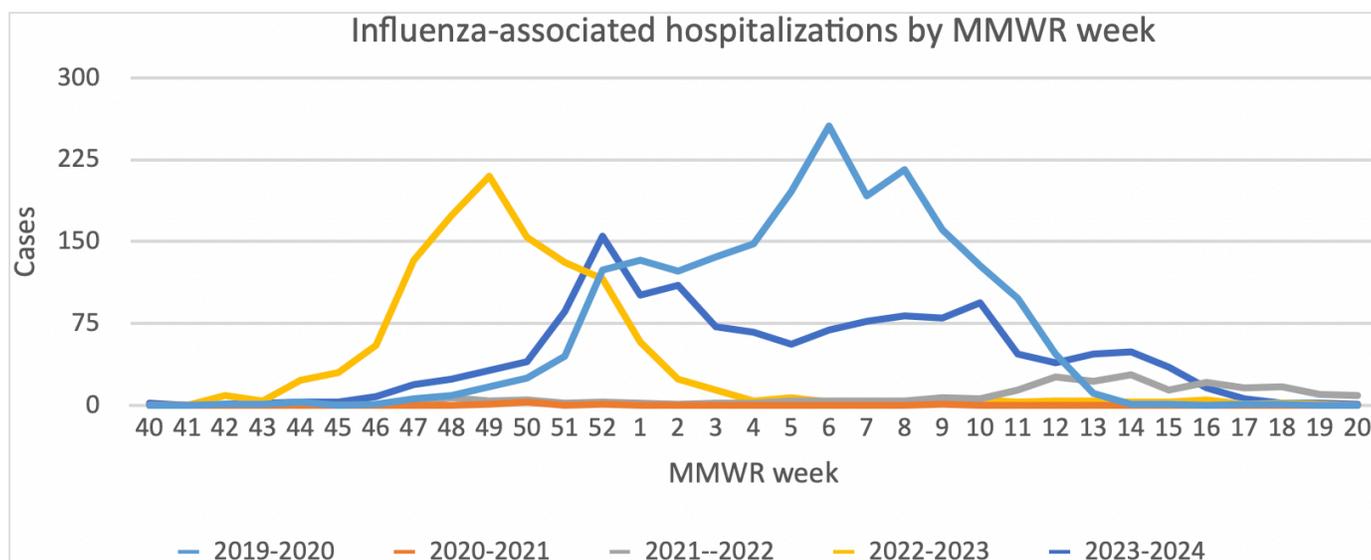
The second-highest number of IAH since CCBH began flu surveillance in 2009 occurred in the 2019-2020 season. Flu activity was extraordinarily high and lasted for weeks at this sustained level.

During the 2020-2021 and 2021-2022 flu season, IAH were significantly lower due to the impact of the COVID-19 pandemic. IAH reported during the 2022-2023 and 2023-2024 flu seasons reflect a more typical pattern.



# Influenza

The graph shows the weekly number of IAH from 2019-2024. Most years, an increase in IAH is observed in late fall and early winter. The 2019-2020 flu season peaked late, but lasted for many weeks and into the spring. While IAH in 2023-2024 peaked as expected, they also continued to occur well into the spring.



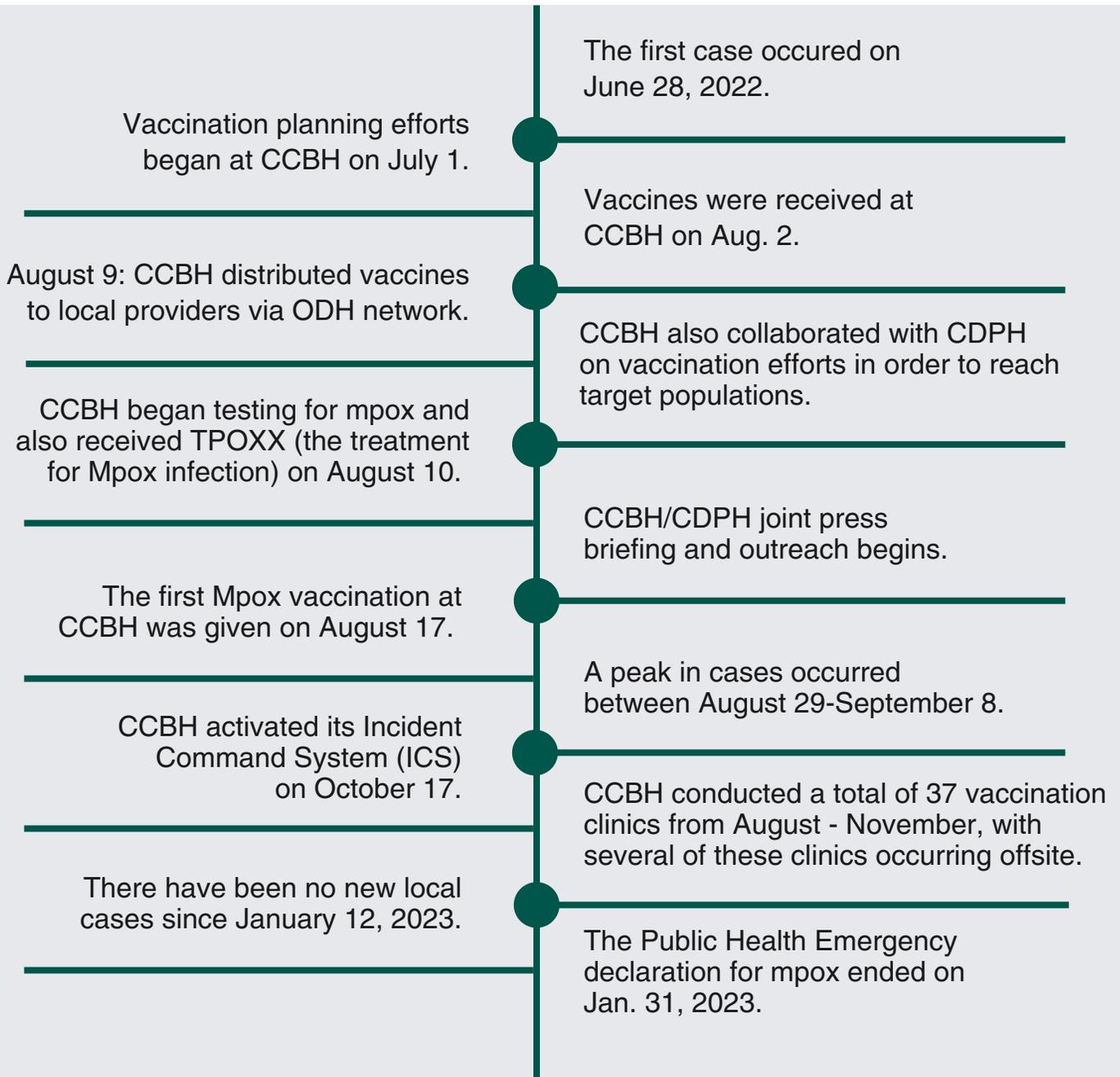
CCBH now uses a data dashboard to illustrate flu-related activity and information. This reporting is part of the agency’s overall [respiratory illness dashboard](#), which also includes information about COVID-19 and RSV. Archived flu surveillance reports from 2023-2024 and earlier [can be found here](#).

It is hard to predict how mild or severe a flu season may be, but by closely monitoring multiple surveillance systems, public health can alert its communities as necessary and provide reminders about appropriate protective and preventive measures:

- Cover your coughs and sneezes with the inside of your elbow
- Get your vaccine every year to protect yourself, your family and your co-workers
- Keep away from those who are sick
- Stay home when sick
- Wash hands frequently and thoroughly

# Mpox

The 2022 mpox outbreak was complex and challenging for many health departments across the country, including CCBH. Coming on the heels of the COVID-19 pandemic, it resurrected many of the same confounding issues: vaccine availability and access, connecting with difficult to reach populations, and countering misinformation and mistrust.



# Mpox

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## Demographics

Cases were primarily identified among males 20-34 years old.

Mpox disproportionately affected those who are Black/African American, who comprised 66% of the total cases countywide.

The majority of those who received vaccine in Cuyahoga County are White, while the majority of cases occurred among those who are Black/African American.

Only 19% of those who are currently vaccinated in Cuyahoga County are Black/African American.

## Community Outreach

The mpox response highlighted the need for agencies to be innovative when addressing the needs of those who were most affected by the illness.

These local bars, nightclubs, and non-profit organizations were partners who worked with CCBH to reach the most at-risk populations:

- Cleveland Heights Community Center
- Cleveland Rape Crisis Center
- Dean Rufus House of Fun
- Grog Shop
- Leather Stallion Saloon
- LGBT Center
- Renee Jones Empowerment Center
- The Symposium at Studio West 117

While deliberate efforts were made to reach populations in need of vaccination, disparities remained.

# Mpox

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## Summary

Cuyahoga County had 156 cases, the highest number statewide.

Franklin County - 86

Hamilton County - 28

Several local cases experienced severe outcomes, including two deaths. Severe outcomes due to mpox occurred especially among those who had uncontrolled HIV/AIDS infection.

6,346 vaccines have been administered by providers in Cuyahoga County.

2,090 (33%) of those doses were administered by CCBH, either through the main clinic or community/neighborhood pop-up clinics.

CCBH is the largest provider of mpox vaccines in the county.

# Lyme Disease

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## **Epidemiology**

Lyme disease has become the most prevalent tickborne illness in Ohio. According to ODH, there has been a 35-fold increase in cases reported over the past 13 years.

The Lyme disease bacteria, *Borrelia burgdorferi* and *Borrelia mayonii*, lives in animals such as rodents, deer and household pets. These bacteria are transmitted among these animals – and to humans – through the bites of certain species of ticks.

The onset of erythema migrans (EM), a common symptom that occurs in over 70% of individuals who are infected, generally occurs in the peak season of late spring or summer. Late manifestations can occur at any time of the year.

Human-to-human transmission is not known to occur, although all persons are susceptible. The incubation period for EM is 3-32 days after an initial tick bite, with a mean time of 7 to 10 days.

Symptoms of illness may be unapparent, as there is a possibility of later manifestations. When left untreated, Lyme disease may become more severe and life-altering (ODH, 2024).

## **Case Classification Status**

In this report, cases of Lyme disease will account for all cases reported in Ohio, including confirmed, suspected, and probable cases.



# Lyme Disease

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## Data Trends

Cuyahoga County is in the 13th percentile for reported cases in the state of Ohio from 2019-2023 (n=115).

26% of cases were classified as confirmed, 15% as probable, and 59% as suspected.

The rate of reported cases in 2023 (n=79) was the highest of the five-year period. However, over half of these reported cases were considered suspected cases (n=46), with 11 cases being confirmed.

The highest count of confirmed cases (n=26) was seen in 2021. Overall, cases have increased over the years, which may be due to increased surveillance efforts as well as an increase in the range of tick species known to carry the bacteria.

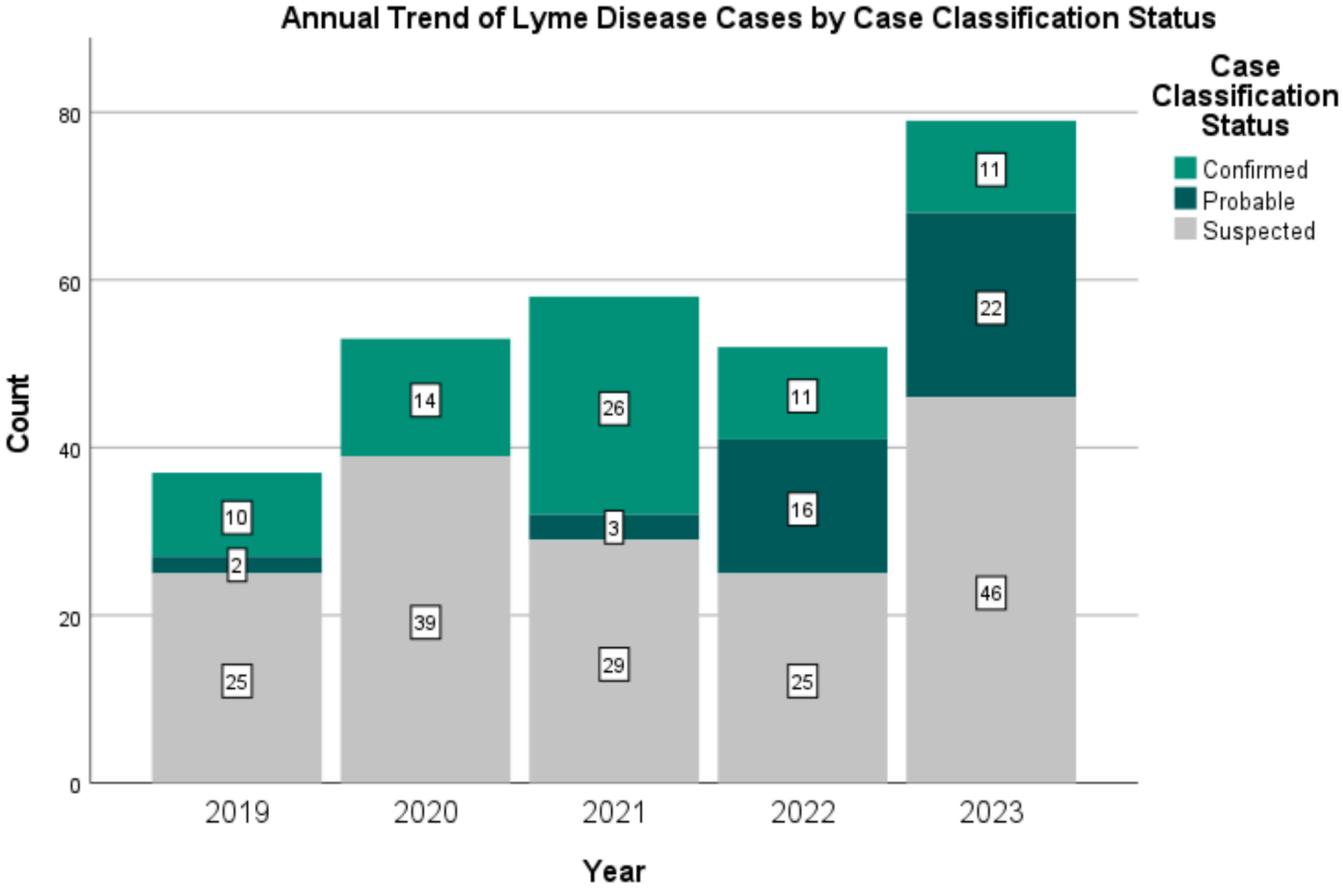
**Table 1**

**Case Classification Status Counts, 2019-2023**

	Frequency	Percent
Confirmed	72	25.8
Probable	43	15.4
Suspected	164	58.8
Total	279	100.0



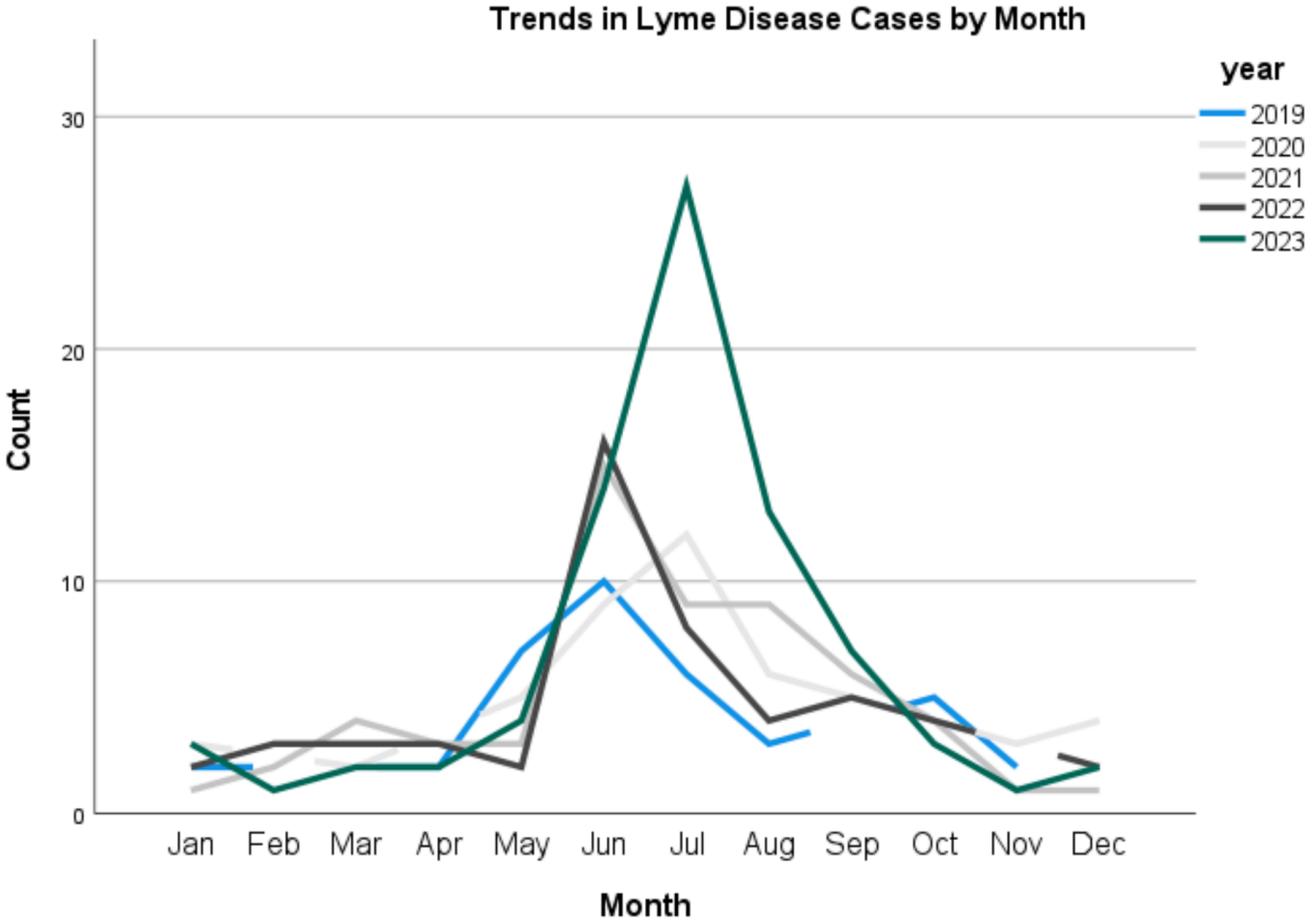
# Lyme Disease



Trends typically follow a seasonal peak, generally occurring in late spring and summer. The summer months of 2023 showed the highest counts of reported cases.



# Lyme Disease



Note: Breaks in the lines represent no cases reported for that month.

The majority of cases identified as male (61%), with individuals identifying as female representing over one-third (39%) of cases (table 2).



# Lyme Disease

		Sex	
		Frequency	Percent
Female		108	38.7
Male		171	61.3
Total		279	100.0

The age distribution of all cases ranged between 3-82 years of age. The mean age of onset was 40 years old. Overall, Lyme disease affected individuals of all ages relatively evenly.

Age Distribution						
	N	Range	Minimum	Maximum	Mean	Std. Deviation
age	279	79	3	82	40.37	20.710

## Limitations and Considerations

Surveillance has been steadily increasing over the years, which may explain the identification of more cases. One limitation observed is the lack of correct laboratory testing needed for confirmatory diagnosis.

Due to the increase in cases public health agencies and healthcare providers should consider the following:

- Consider tickborne diseases, including Lyme disease, as a differential diagnosis when evaluating patients with febrile illness, with or without a rash.
- Familiarize clinicians with the laboratory tests available to properly diagnose Lyme Disease:
  - Testing involves two steps and can be completed with the same blood sample. Step one is to perform an immunoassay antibody test detecting IgM and/or IgG antibodies to *B. burgdorferi*. If negative, no further testing recommended.
  - If the first step is positive or indeterminate/equivocal, step two is to perform an IgM and/or IgG western blot\*.

\*The IgM Western blot usually is positive a few days to a few weeks after illness onset. The IgG Western blot should be positive around four weeks after symptom onset.



# Healthcare-associated Infections (HAI)

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**Patients develop healthcare-associated infections (HAI)** while receiving treatment for other conditions. They can happen anywhere healthcare treatment is provided. HAI are the most common complication of hospital care.

The CDC's HAI prevalence survey provides a national estimate among acute care hospitals in the United States. In 2011, the survey found that on any given day, approximately 1 in 25 hospital patients has at least one healthcare-associated infection.

Relevant data:

- An estimated 722,000 HAI occurred in these facilities in 2011
- HAI result in an estimated \$30 billion in excess annual healthcare costs nationally (N Engl J Med 2014;370:1198-208)
- More than half of all HAI occurred outside of the intensive care unit
- Nearly 75,000 hospital patients with HAI died during their hospitalizations

**Multi-Drug Resistant Organisms (MDRO)** are defined as microorganisms, predominantly bacteria, that are resistant to one or more classes of antimicrobial agents. Options for treating patients with these infections are often extremely limited.

Illness related to MDRO has steadily increased since 2018 in Cuyahoga County. Increased lengths of hospital stay, costs, and mortality also have been associated with MDRO.

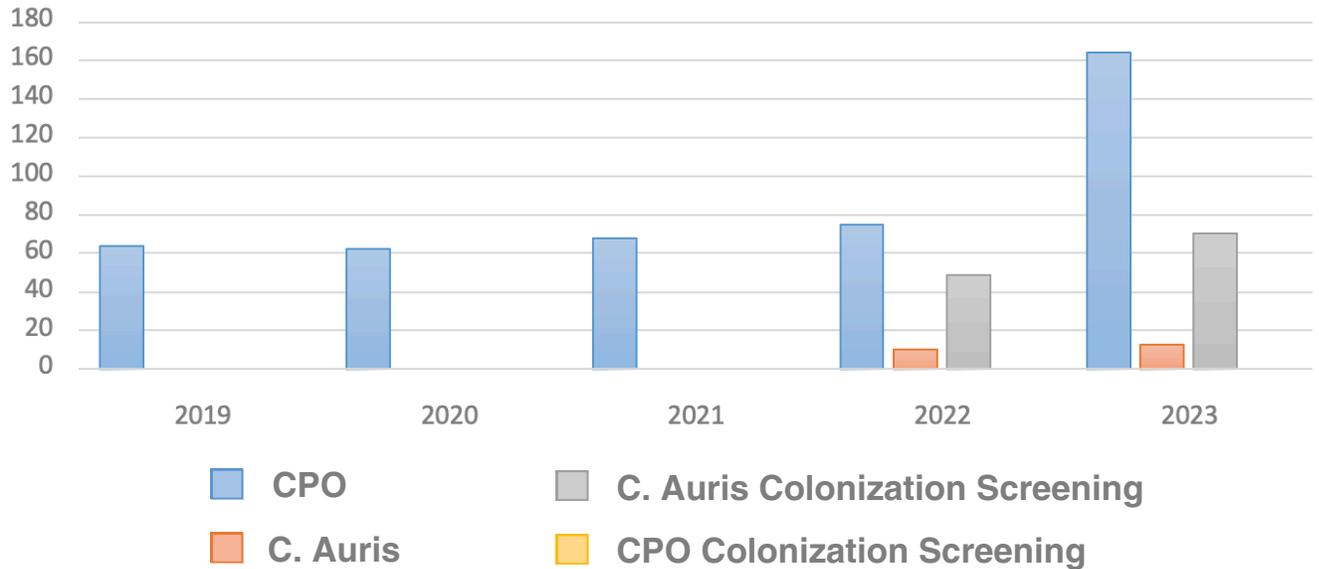
Relevant data:

- Carbapenemase-Producing Carbapenem-Resistant Enterobacterales were (CP-CRE) were re-classified as Carbapenemase-Producing Organisms (CPO) by ODH in 2023
- Local cases of both *C. Auris* and CPO peaked in 2023, predominantly affecting age groups 60-69 (31.2%) and 70-79 (30.4%)
- The first cases of *Candida Auris* (*C. Auris*) were confirmed in Cuyahoga County in 2022

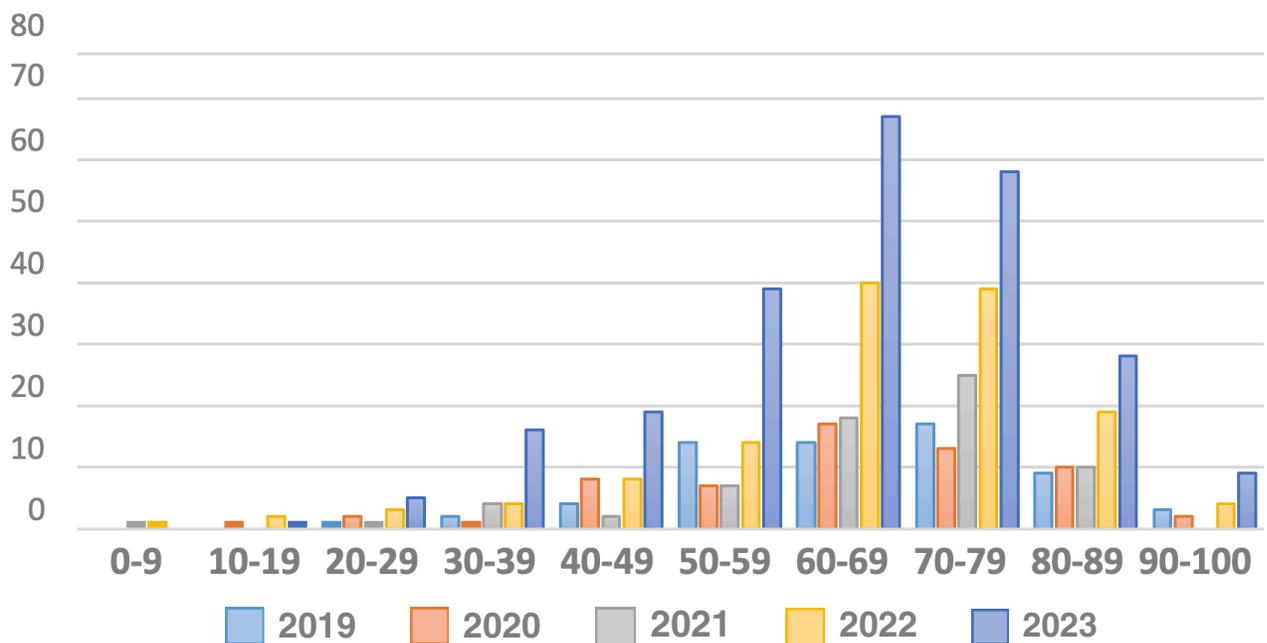


# Healthcare-associated Infections (HAI)

### Multi-drug-Resistant Organisms Confirmed Cases by Year



### Confirmed Cases by Age Group





# Healthcare-associated Infections (HAI)

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## Age Group (Years)

0-9	0.4%
10-19	0.8%
20-29	2.4%
30-39	5.4%
40-49	8.2%
50-59	16.2%
60-69	31.2%
70-79	30.4%
80-89	15.2%
90-100	3.6%



# Healthcare-associated Infections (HAI)

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A patient tested positive in May 2023 in Cuyahoga County for a very rare strain called Carbapenem-resistant *Acinetobacter baumannii* (CRAB), OXA-23 carbapenemase (OXA23), New Delhi metallo-beta-lactamase (NDM). As of December 2023, six cases were confirmed in Cuyahoga County, thus being classified as an outbreak by ODH.

Prompt identification of HAI and immediate implementation of recommended infection control measures are the best methods to prevent additional patients from becoming infected or colonized with an MDRO. Public health response to these cases should be informed by [CDC's containment guidance](#).

Response actions are based on a tier structure as determined by local epidemiology, with the highest level of response reserved for rare or novel organisms. With healthcare facilities using contact precautions or enhanced barrier precautions depending on the setting, as well as pre-admission testing for all healthcare settings, the transmission of these MDRO may be reduced.

In response to the increase in cases of CPO as well as *C. Auris*, ODH has created enhanced barrier precaution recommendations as well as the use of colonization screenings throughout clinical settings. They have created an interfacility transfer form, which requires staff to notify the receiving facility about any organism that necessitates transmission-based precautions, including a patient colonized or infected with CPO or another MDRO.

# Outbreaks

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## **Outbreaks Summary (Excludes COVID-19) CCBH 5-Year Report 2019-2023**

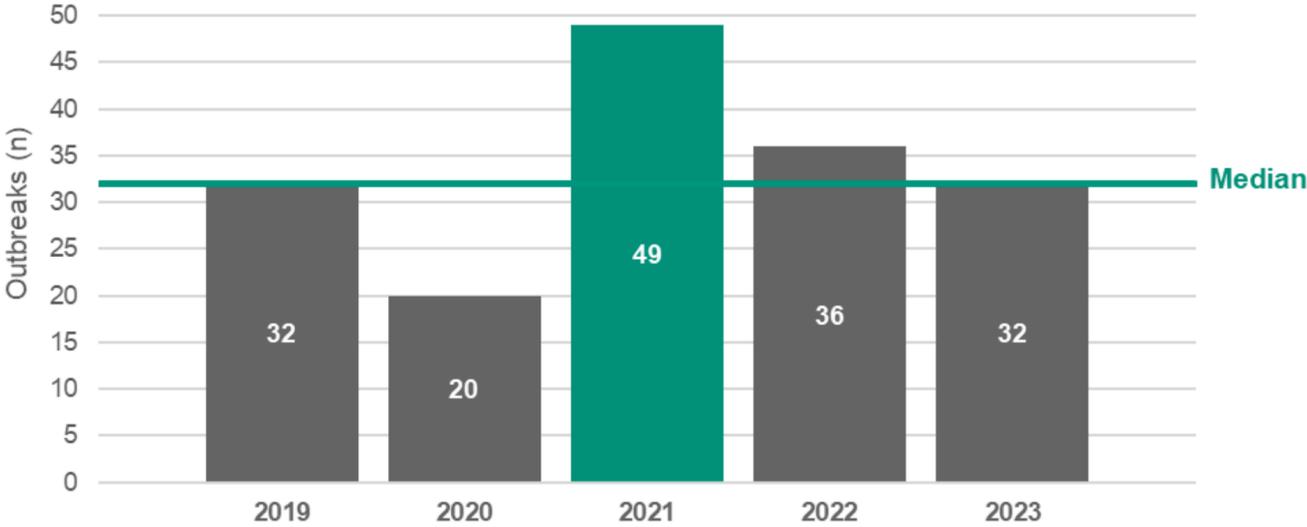
From 2019-2023, Cuyahoga County received 169 reports of non-COVID-19 outbreaks affecting 2,402 individuals. The number of outbreaks reported per year ranged from 20 in 2020 to 49 in 2021, with a median of 32 outbreaks per calendar year. In 2020, there were relatively few non-COVID-19 outbreaks reported (20), indicative of low rates of non-COVID-19 illness due to the COVID-19 pandemic and stay at home mandates. Outbreak reporting then peaked in September 2021, signaling the return to work and school and likely increased awareness of reporting requirements for many Cuyahoga County residents. A closer look at the data showed that outbreak reporting tends to peak in the months of February, September, and October, though 2023 had less distinct seasonal patterns.

Although the number of outbreaks reported by year remained consistent, early trends show that the size of the outbreaks decreased over the past five years. The largest outbreak occurred in 2019 and consisted of 233 norovirus cases at a long-term care facility (LTCF), accounting for 10% of all outbreak-related cases from 2019-2023. Of the 20 largest outbreaks in this period, 2023 only had one affecting 30 people, while 2021 had seven affecting 318 people.

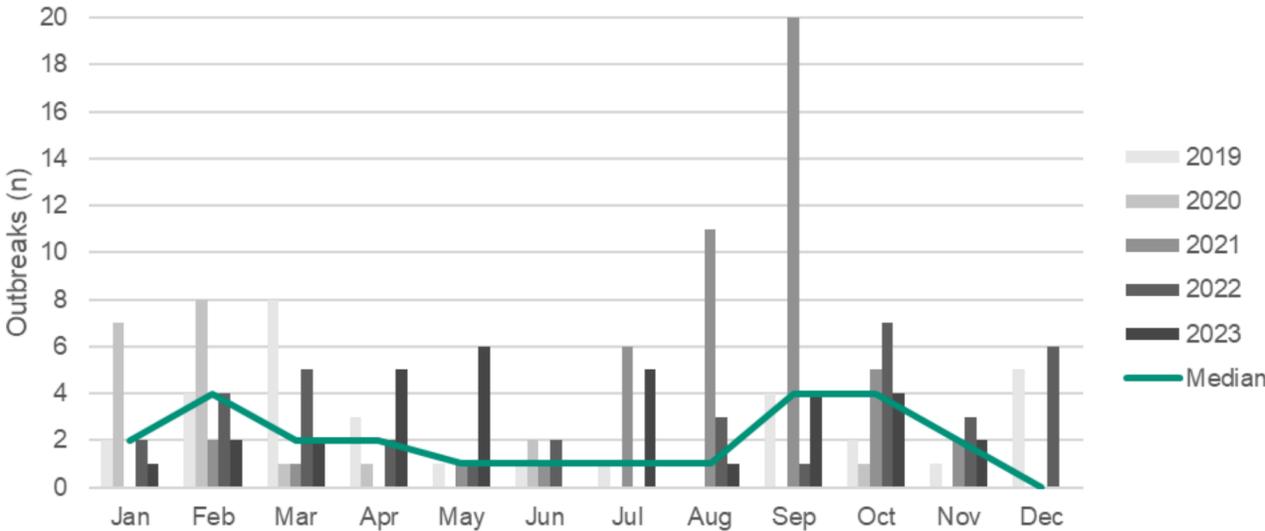


# Outbreaks

Outbreaks reported by year



Outbreaks reported by month and year



# Outbreaks



## Outbreaks Summary (Excludes COVID-19) CCBH 5-Year Report 2019-2023

Top 20 largest outbreaks: 2019-2023						
Year	Type	Setting	Illness	Agent	Cases	
					(n)	(%)
2019	Healthcare	LTCF	Gastrointestinal	Norovirus	233	10%
2020	Institutional	School	Respiratory	Influenza	100	4%
2021	Institutional	Day Care	Gastrointestinal	Norovirus	89	4%
2022	Community	Community	Dermatologic	Mpox	64	3%
2019	Community	Community	Gastrointestinal	Norovirus	60	2%
2022	Institutional	Assisted Living	Gastrointestinal	Norovirus	54	2%
2021	Institutional	Day Care	Respiratory	RSV	47	2%
2021	Institutional	Day Care	Dermatologic	HFMD	46	2%
2019	Institutional	Assisted Living	Gastrointestinal	Norovirus	41	2%
2021	Healthcare	Memory Care	Dermatologic	Scabies	40	2%
2022	Institutional	Independent Living	Gastrointestinal	Norovirus	40	2%
2022	Institutional	Assisted Living	Gastrointestinal	Norovirus	36	1%
2022	Institutional	School	Respiratory	Influenza	34	1%
2019	Healthcare	LTCF	Gastrointestinal	Norovirus	33	1%
2021	Institutional	Day Care	Gastrointestinal	Norovirus	33	1%
2021	Institutional	Day Care	Dermatologic	HFMD	32	1%
2019	Institutional	Day Care	Dermatologic	HFMD	31	1%
2019	Healthcare	LTCF	Gastrointestinal	Norovirus	31	1%
2021	Institutional	School	Respiratory	RSV	31	1%
2023	Institutional	Assisted Living	Gastrointestinal	Norovirus	30	1%

Outbreaks are categorized by type of outbreak and type of illness. Outbreak types include:

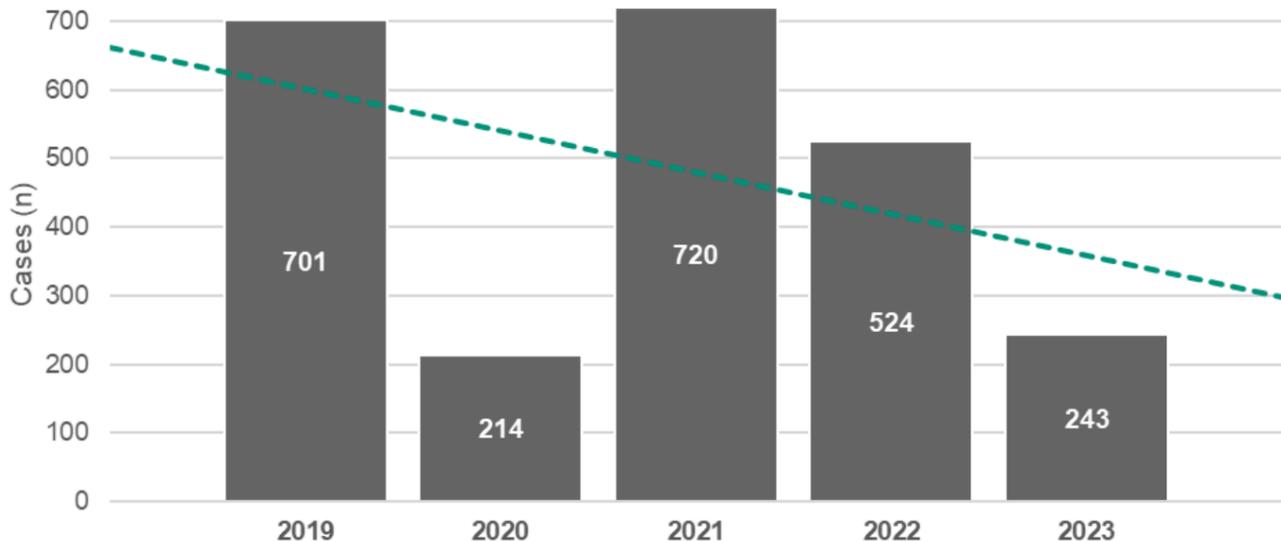
- Community
- Foodborne
- Healthcare-associated
- Institutional
- Waterborne
- Zoonotic



# Outbreaks

## Outbreaks Summary (Excludes COVID-19) CCBH 5-Year Report 2019-2023

Outbreak-associated cases over time



Outbreaks are categorized into a type based on where or how the common exposure would have occurred. Examples of these outbreaks could be:

- Influenza in a long-term care facility (healthcare-associated)
- Legionellosis on a cruise ship (waterborne)
- Mpox in the United States (community)
- Norovirus in a school (institutional)
- Salmonellosis spread via common food (foodborne)
- West Nile virus (zoonotic)

Illness types include dermatologic, gastrointestinal, respiratory, or other. Most common types of outbreak agents in Cuyahoga County include hand, foot and mouth disease (HFMD, dermatologic), norovirus (gastrointestinal), and influenza (respiratory).



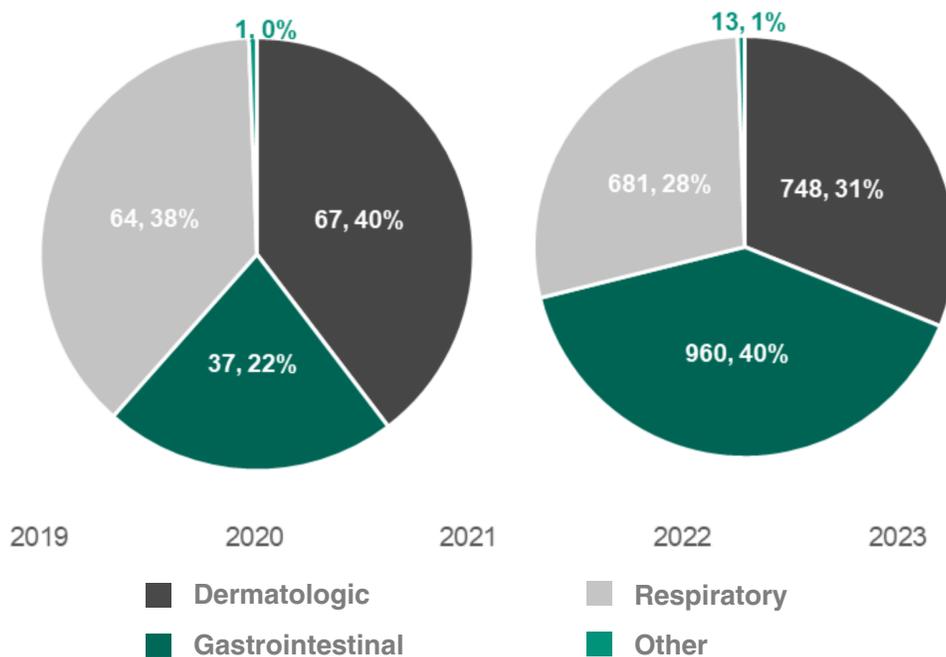
# Outbreaks

## Outbreaks Summary (Excludes COVID-19) CCBH 5-Year Report 2019-2023

Most outbreaks reported were either dermatologic (67, 40%) or respiratory (64, 38%). However, more individuals were affected by gastrointestinal (GI) outbreaks than either dermatologic or respiratory. This means that while there were fewer GI outbreaks reported, they were generally larger, involving more cases. Additionally, dermatologic and GI outbreaks appear to be either trending up or returning to pre-pandemic levels between 2019 and 2023. Respiratory outbreaks hit a peak in 2021 and decreased in frequency in both 2022 and 2023.

Only one outbreak of other illness was reported from 2019-2023. This outbreak was first reported in 2023 and consisted of 13 healthcare-associated infections of *Acinetobacter baumannii*, which is individually reportable as Carbapenemase-Producing Organism (CPO). With 13 hospitalizations and 3 reported deaths, this outbreak is also one of the most severe during the five-year period.

Outbreaks vs. outbreak-associated cases by type of illness





# Outbreaks

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## Outbreaks Summary (Excludes COVID-19) CCBH 5-Year Report 2019-2023

Most severe outbreaks reported by year: 2019-2023								
Year	Type	Setting	Illness	Agent	Cases (n)	Hospitalizations (n)	Deaths (%)	Deaths (n)
2019	Healthcare	LTCF	Respiratory	Influenza	13	5	38%	0
2020	Healthcare	LTCF	Respiratory	Influenza	15	4	27%	1
2021	Institutional	School	Respiratory	RSV	31	4	13%	0
2022	Institutional	Assisted Living	Respiratory	Influenza	6	3	50%	2
2023	Healthcare	Hospital, LTCF	Other	A. baumannii	13	13	100%	3

# Data Sources and Methodology

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All infectious disease case data was obtained from the Ohio Disease Reporting System (ODRS), a platform managed and maintained by the Ohio Department of Health.

All vaccine data was obtained from IMPACT-SIIS, a statewide vaccine data platform, also managed and maintained by the Ohio Department of Health  
Additional sources used for this report:

## *References*

Lyme Disease: A Rising Concern in Ohio | Ohio Department of Health

<https://odh.ohio.gov/know-our-programs/zoonotic-disease-program/news/lyme-disease-a-rising-concern-in-ohio>