

COMMUNICABLE DISEASE ANNUAL REPORT 2021



Summary of Events

COVID-19

COVID-19 continued to be a top priority in 2021 accounting for 95% of the communicable diseases reported in Knox County. Staff maintained their efforts with the pandemic response ranging from contact tracing, personal protective equipment (PPE) and test kit management, along with vaccine clinics.

As vaccine availability increased and additional doses offered, Knox Public Health (KPH) adjusted protocols. The pandemic response continues at present with case management and vaccines ongoing. KPH will wait for a statewide decision to cease response activities.

Once the pandemic response is declared over, KPH will update plans to account for the lessons learned and address improvement items. Meetings with coalitions and partner agencies will gather feedback to further strengthen local emergency preparedness plans.

LYME DISEASE

Lyme Disease was one of the top communicable diseases reported in 2021. Cases ranked 3rd overall behind COVID-19 and Chlamydia. KPH has formed a quality improvement team to address Lyme Disease in the community by analyzing data and raising awareness. In addition, other projects are being discussed to educate the community.

LOCAL INFLUENZA SURVEILLANCE

The COVID-19 pandemic response put a temporary pause on local influenza surveillance but KPH restarted this program. Weekly data collection ramped back up prior to the start of the 2021-2022 season. KPH has added additional providers to the network and shares data in the monthly communicable disease report for situational awareness.

COVID-19

COVID-19 Key Terms

Probable Case: SARS-CoV-2 specific antigen (rapid or at-home test)

Confirmed Case: SARS-CoV-2 RNA (PCR)

Quarantine: people exposed to an infectious agent but not showing symptoms/sick

Isolation: people sick or lab positive for an infectious agent

Incubation Period: timeframe someone was exposed to time they can develop symptoms

Communicable Period: timeframe someone is sick or lab positive with an infectious agent and has the ability to spread the agent to other people.

COVID-19 2021 Stats

TOTAL Cases = **7,180**

- Average Cases per day = **19.7** (13.9 confirmed; 5.8 probable)
- Highest # of Cases per day = **104** (December 29)

Deaths

- Average Age = **73.8**
- Age Range = **35 - 100**
- Gender = Female (**46.9%**); Male (**53.1%**)
- Unvaccinated = **71.8%**
- Fully Vaccinated = **24.7%**

2021 COVID-19 Cases Knox County, Ohio				
Month	Confirmed	Probable	Suspected	Deaths
January	504	276	2	31
February	147	102	1	11
March	157	82	0	1
April	119	84	1	3
May	60	29	0	2
June	12	11	0	0
July	79	26	0	0
August	810	197	4	7
September	1060	395	4	10
October	598	289	1	35
November	517	260	0	16
December	966	387	0	12
TOTAL	5029	2138	13	128

COVID-19

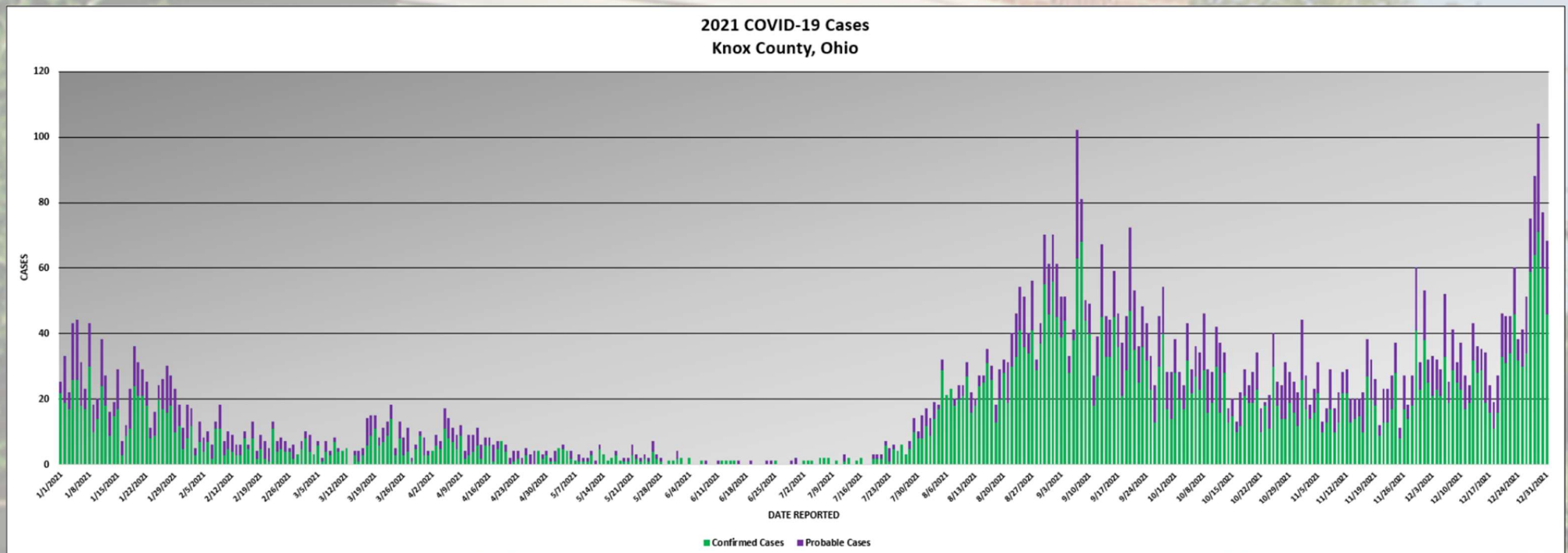
COVID-19 Epi Curve 2021

The Epi Curve below shows probable and confirmed cases reported during the 2021 calendar year. Reviewing data from the start of the pandemic, we are starting to see some trends amongst our spikes in cases.

Essentially, any time people are in increased close contact with one another is when we see spikes in our data. Some of the possible explanations from our data include:

- Holidays - Thanksgiving and Christmas
- Start of School
- Cold weather resulting in more people inside and in close contact with one another.

Available are two years worth of COVID-19 data but differences in public health measures between the two years present some challenges with explaining spikes. More data needs to be collected and analyzed to confirm the above.



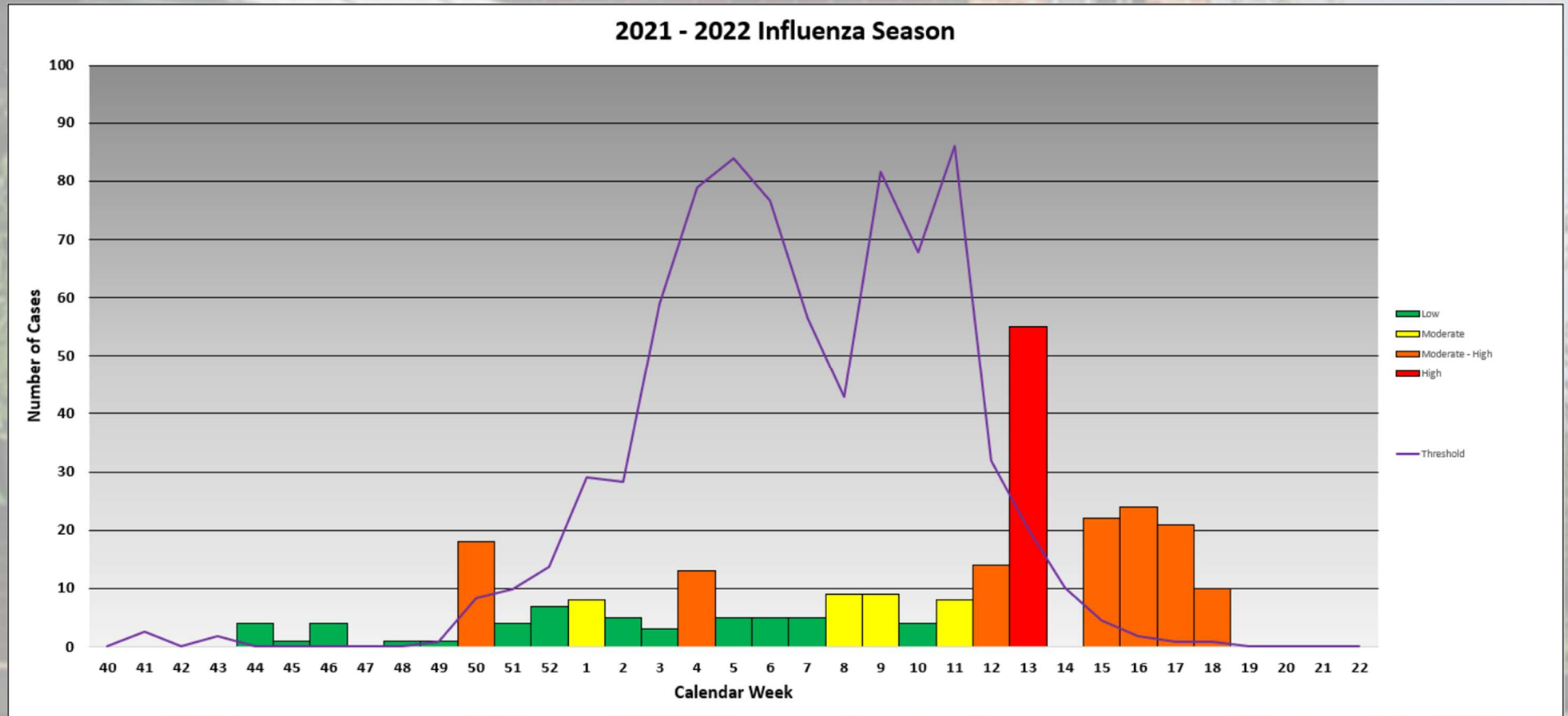
INFLUENZA

Weekly Influenza Reporting

Cases of flu are only reportable if a pediatric death occurs or if someone is admitted to the hospital. Flu cases diagnosed and sent home from a physicians office are not required to be reported in the state of Ohio.

KPH has implemented a program to reach out to county providers for flu stats for situational awareness within Knox County. Due to COVID-19, this weekly collection of data was "paused" in 2020 to respond to the pandemic. Data collection started back up in 2021 to capture data for the upcoming flu season (2021-2022).

A dashboard has been created to analyze data collected from past seasons and is used to help forecast upcoming flu seasons along with current activity.



TOP REPORTABLE DISEASES

2021 Top Reportable Diseases Knox County, Ohio				
Class A	Knox County		Ohio	
	Cases	Rate	Cases	Rate
COVID-19	7,180	11,447.5	1,351,620	11,473.8
Sexually Transmitted Infections (STIs)	Knox County		Ohio	
	Cases	Rate	Cases	Rate
Chlamydia	130	207.3	57,454	487.7
Gonorrhea	21	33.5	28,500	241.9
Influenza Cases	Knox County		Ohio	
	Cases	Rate	Cases	Rate
Influenza (IRIS)	27	43.0	N/A	
Influenza-associated hospitalization	1	1.6	472	4.0
Vector-Borne Diseases	Knox County		Ohio	
	Cases	Rate	Cases	Rate
LaCrosse virus disease	4	6.4	22	0.2
Lyme Disease	41	65.4	3,085	26.2
Rocky Mountain spotted fever	2	3.2	282	2.4
Hepatitis	Knox County		Ohio	
	Cases	Rate	Cases	Rate
Hepatitis A	2	3.2	634	5.4
Hepatitis B (including delta) - acute	0	0.0	145	1.2
Hepatitis B (including delta) - chronic	3	4.8	3,759	31.9
Hepatitis B - Perinatal Infection	1	1.6	172	1.5
Hepatitis C - acute	0	0.0	145	1.2
Hepatitis C - chronic	36	57.4	12,406	105.3
Hepatitis E	0	0.0	16	0.1
Enteric Diseases	Knox County		Ohio	
	Cases	Rate	Cases	Rate
Campylobacteriosis	18	28.7	2,026	17.2
Salmonellosis	5	8.0	1,252	10.6
E.coli, Shiga Toxin Producing (O157:H7, Not O157, Unknown Serotype)	1	1.6	478	4.1
Waterborne Diseases	Knox County		Ohio	
	Cases	Rate	Cases	Rate
Giardiasis	3	4.8	562	4.8
Cryptosporidiosis	10	15.9	406	3.4
Respiratory Diseases	Knox County		Ohio	
	Cases	Rate	Cases	Rate
Legionellosis - Legionnaires' disease	3	4.8	783	6.6
Pertussis	5	8.0	252	2.1

TOP REPORTABLE DISEASES - REGIONAL COMPARISON

Ranking Amongst the Region

The top reportable diseases reported in Knox County were compared amongst the region to determine a ranking and if any unique scenarios are occurring in the county. For comparison, cases were converted to a rate per 100,000 to account for population differences.

Knox County had some of the top rates for Lyme Disease, Cryptosporidiosis, and Strep. Pneumo - resistance unknown within the central region. Cryptosporidiosis has historically been high in comparison to the central region. Common sources of infection include cattle (calves), goats, and other domestic animals. Cryptosporidium in surface water is considered to be widespread as well.

2021 Central Region Comparison for Knox County, Ohio
Rate per 100,000

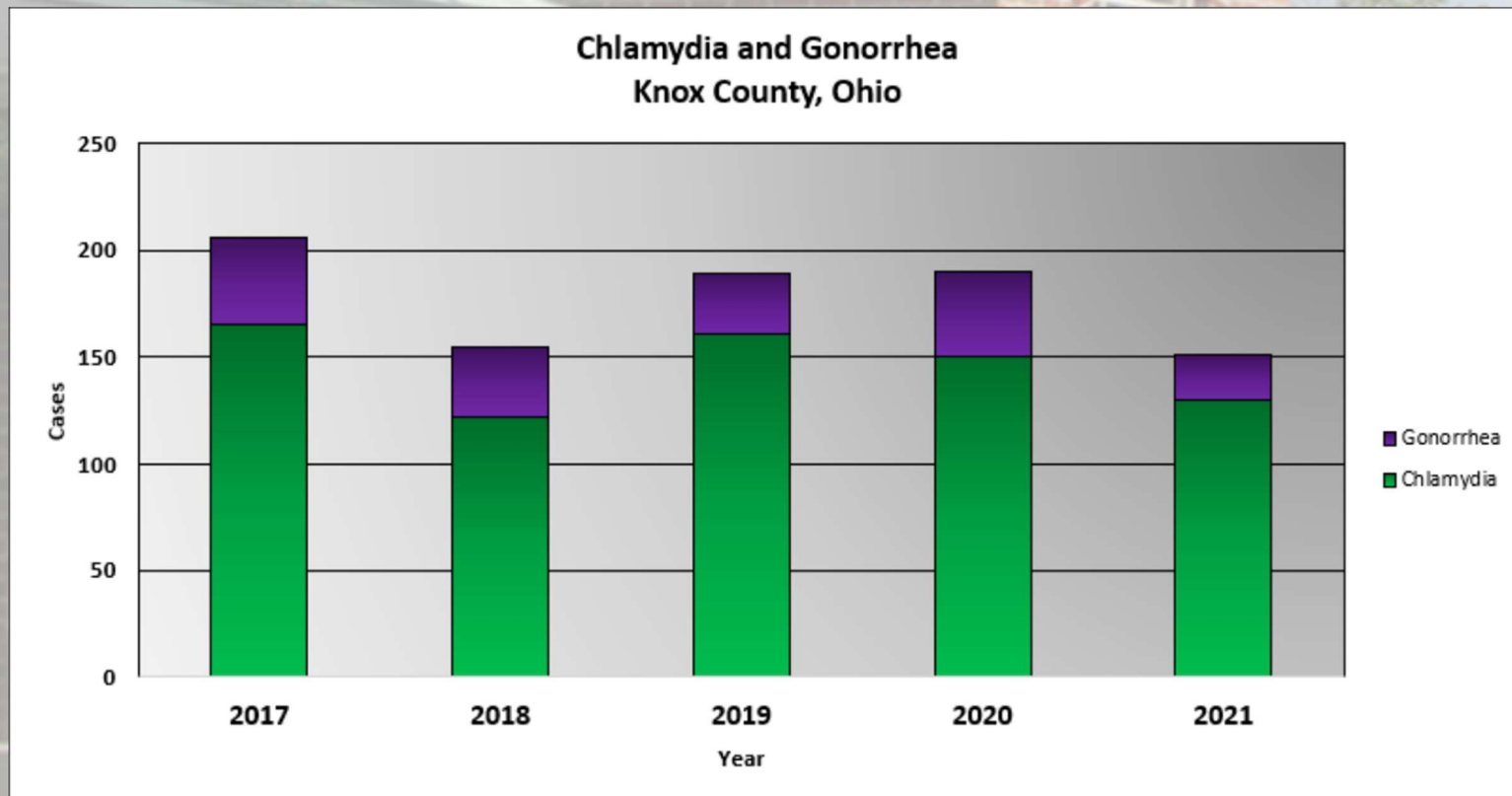
Central Region Counties	Chlamydia		Gonorrhea		Lyme Disease		Hepatitis C - chronic		Campylobacteriosis		Cryptosporidiosis		Strep. Pneumo - resistance unknown	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Crawford	93	221.3	22	52.3	0	0.0	20	47.6	5	11.9	0	0.0	0	0.0
Delaware	335	156.5	99	46.2	27	12.6	65	30.4	31	14.5	3	1.4	7	3.3
Fairfield	340	213.9	91	57.3	37	23.3	105	66.1	24	15.1	3	1.9	2	1.3
Fayette	100	345.4	25	86.4	0	0.0	27	93.3	21	72.5	3	10.4	0	0.0
Franklin	9,146	690.9	4,815	363.7	123	9.3	1,099	83.0	225	17.0	47	3.6	69	5.2
Hardin	74	241.1	9	29.3	2	6.5	39	127.1	7	22.8	4	13.0	1	3.3
Knox	132	210.5	22	35.1	41	65.4	35	55.8	18	28.7	10	15.9	6	9.6
Licking	556	311.5	225	126.0	167	93.5	118	66.1	36	20.2	6	3.4	8	4.5
Logan	118	255.7	28	60.7	4	8.7	38	82.3	9	19.5	0	0.0	0	0.0
Madison	115	262.4	38	86.7	7	16.0	74	168.9	4	9.1	1	2.3	1	2.3
Marion	285	436.1	77	117.8	6	9.2	114	174.4	20	30.6	3	4.6	5	7.7
Morrow	75	214.6	7	20.0	5	14.3	24	68.7	15	42.9	0	0.0	2	5.7
Pickaway	135	230.6	41	70.0	9	15.4	361	616.7	11	18.8	2	3.4	0	0.0
Union	177	281.9	45	71.7	10	15.9	150	238.9	12	19.1	0	0.0	0	0.0
Wyandot	49	223.7	4	18.3	0	0.0	15	68.5	7	32.0	2	9.1	0	0.0

SEXUALLY TRANSMITTED INFECTIONS (STIs)

STIs Down in 2021

Cases of Chlamydia and Gonorrhea were increasing across the state prior to COVID-19. In addition to cases increasing, a significant proportion of Chlamydia cases were repeat infections. The dynamics of repeat infections could have something to do with partner notifications or a lack thereof. For Gonorrhea, coinfections with Chlamydia are common at the time of laboratory positives.

In 2021, cases of both Chlamydia and Gonorrhea were down compared to 2020. More data will need to be collected to determine the cause of this decrease as most of the work done by KPH in 2021 was focused on the pandemic response.



LYME DISEASE

Lyme Disease Increasing Across Ohio

Cases of Lyme Disease continue to increase in Knox County and a geographical spread across the state can be seen from east to west. The last three years have shown historically high numbers of cases and KPH has formed a quality improvement team to educate the community and providers.

2021 Top 20 Counties in Ohio for Lyme Disease			
Rate per 100,000			
Rank	County	Cases	Rate
1	Harrison	106	700.5
2	Monroe	59	426.7
3	Jefferson	231	350.3
4	Guernsey	126	323.1
5	Carroll	73	268.4
6	Noble	38	263.7
7	Belmont	145	215.1
8	Coshocton	68	186.0
9	Tuscarawas	125	135.6
10	Holmes	56	127.4
11	Morgan	18	123.7
12	Columbiana	124	121.0
13	Muskingum	89	103.4
14	Washington	62	103.0
15	Wyandot	20	91.3
16	Licking	148	84.4
17	Jackson	24	74.0
18	Gallia	22	73.3
19	Knox	41	66.4
20	Ashtabula	64	65.7

