



Licking County
Health Department

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www.LickingCoHealth.org

2018 Communicable Disease Annual Report



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Summary of 2018 Events

The Licking County Health Department (LCHD) is dedicated to conducting disease surveillance and continues to evaluate investigation protocols to better serve county residents. In 2018, LCHD responded to four outbreaks (**influenza, pertussis, pneumonia, and scabies**) in the community, 1,421 reportable diseases through the Ohio Disease Reporting System (ODRS), and 4,657 cases of influenza captured through the department's Influenza Reporting Information System (IRIS). In addition to the investigations of communicable disease, LCHD sent five Health Alert Network (HAN) messages to local providers regarding education on public health issues in 2018.

HAN Messages

LCHD sends HAN messages to local providers when an emerging issue presents in the community. The intent is to provide education and guidance to help prevent illness. HANs were sent in 2018 regarding influenza and Lyme disease. Influenza HANs are sent each year based on historical data to remind providers to continue to test and suspect influenza as a diagnoses. LCHD identified an increase in Lyme disease cases which prompted a HAN message to providers along with an additional HAN regarding appropriate testing for Lyme disease.

Vector-Borne Diseases

During the summer of 2018, LCHD detected an increase in the number of cases of LaCrosse virus disease. The number of cases exceeded historical data and prompted the LCHD Epi Team to discuss a plan of action. With consultation from the Ohio Department of Health (ODH), LCHD will plot locations of cases using GIS mapping software and target those areas in the future during mosquito spraying seasons. LaCrosse virus disease is known to persist in areas each summer once it establishes its self amongst mosquito breeding grounds. LCHD plans to do the same mapping for Lyme disease and continue to share education on tick prevention.

Statewide Hepatitis A Outbreak

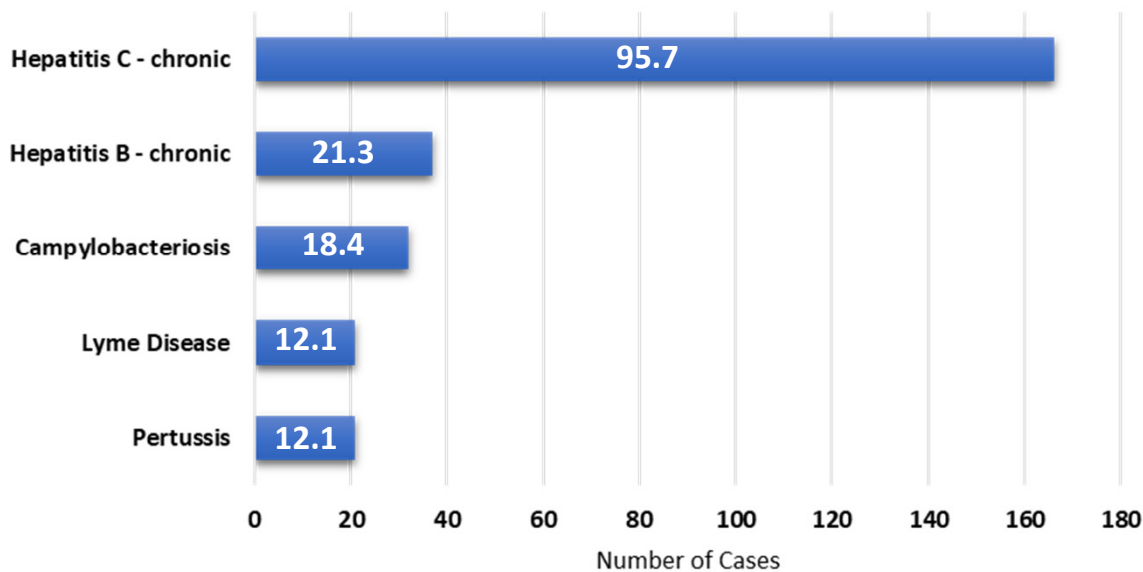
Towards the end of 2018, LCHD started to see an influx of cases of Hepatitis A. Investigations revealed that these cases were linked with the statewide outbreak being investigated by ODH. Populations considered high risk in this outbreak include the homeless, people who use street drugs whether they are injected or not, men who have sex with men, people with direct contact with infected individuals, people who are incarcerated, and people who travel to other areas currently experiencing outbreaks. In order to address this issue, LCHD is going out into the community and targeting high risk populations and people who work with high risk populations to provide Hepatitis A vaccine. Education is also being shared amongst the community to reduce transmission by practicing proper hygienic measures. Hepatitis A is acquired through the fecal-oral route and unsanitary conditions contribute to most infections.



Top Reportable Diseases (not including STDs or Influenza)

Figure 1: 2018 Reportable Diseases, Licking County (Number of Cases and Incidence Rate per 100,000)

Top 5 Reportable Diseases



Disease Fact Table

Disease	Source	Transmission	Treatment	Prevention
Hepatitis C – chronic	human blood	iv drug use blood to blood contact	antiviral medications	clean needles avoid blood to blood contact
Hepatitis B – chronic	human blood human body fluids	iv drug use blood to blood contact sex bodily fluid contact	antiviral medications	vaccination
Campylobacter	poultry cattle puppies kittens swine sheep rodents birds	fecal-oral	supportive care antibiotics for high risk patients	cook raw meat to appropriate temperatures avoid cross contamination avoid unpasteurized milk and untreated water
Lyme Disease	reservoir - white footed mouse vector - blacklegged tick	blacklegged tick bite	antibiotics	prompt removal of ticks insect repellent containing DEET early detection
Pertussis	humans	person to person direct contact with discharges	antibiotics	vaccination early detection and isolation



STDs

Local Activity: During the investigation of STDs, LCHD has tracked the number of reinfections amongst Chlamydia cases and the number of coinfections (positive test for both Chlamydia and Gonorrhea) amongst Gonorrhea cases. Below are graphs for these statistics for the last five years along with historical data for comparison. Historical data is used to measure if cases are above or below their expected averages for each year.

Figure 2: Licking County Chlamydia Cases, Reinfections vs. Historical Data

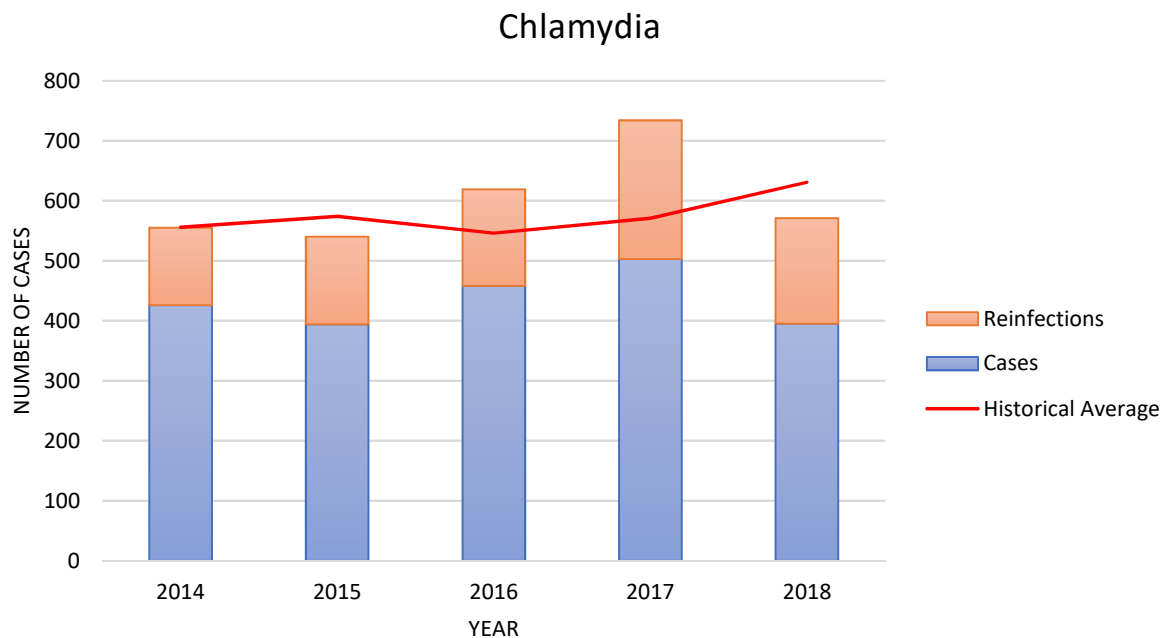
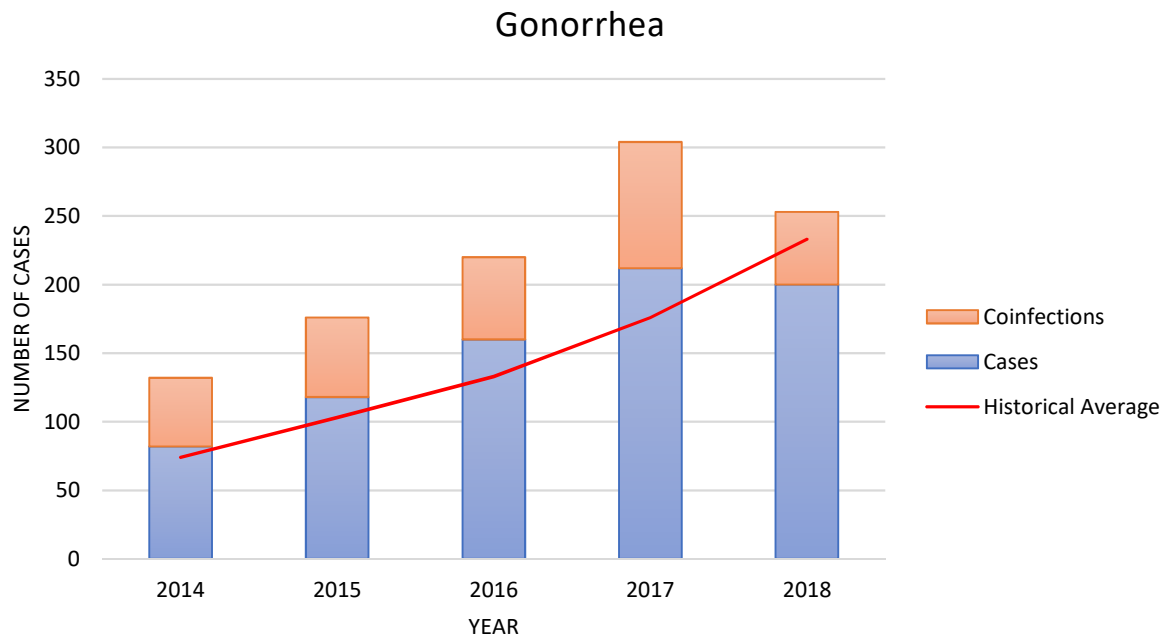


Figure 3: Licking County, Gonorrhea Cases, Coinfections vs. Historical Data





Vector-Borne Diseases

Description: Vectors are living organisms that can transmit infectious diseases between humans or from animals to humans. Most are blood sucking insects. These insects ingest microorganisms when they take a blood meal from an infected host and later inject it into a new host during their next blood meal. Mosquitoes and ticks are two of the most common disease vectors.

Examples: Lyme disease, LaCrosse virus disease, Rocky Mountain spotted fever, Ehrlichiosis, and Malaria

Data:

Figure 4: 2018 Vector-Borne Diseases, Licking County

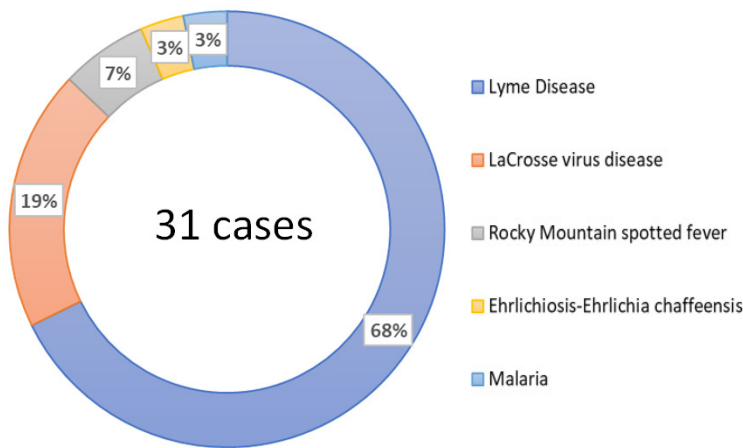
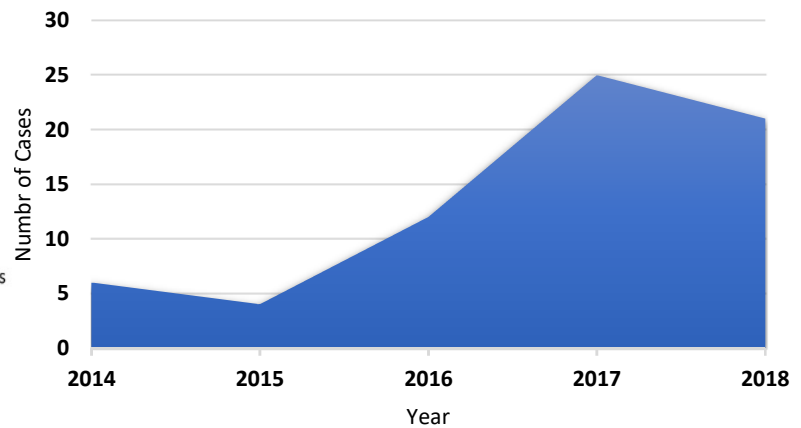


Figure 5: Lyme Disease, Licking County (2014-2018)



Local Activity: The two most notable diseases for Licking County in 2018 were Lyme Disease and LaCrosse virus disease. For Lyme Disease, a 16% decrease in the number of reported cases compared to 2017 was seen but case investigations continue to suggest locally acquired transmission. Even though an overall decrease was noted in 2018, the surge of cases reported during summer months prompted two HAN messages to local providers. In 2018, Licking County was the leading county in the entire state for reported cases of LaCrosse virus disease. LCHD has been collaborating with the Ohio Department of Health to address this emergence of LaCrosse cases in the county and historical markers are being placed through mapping to target areas of risk.

Prevention: Currently, LCHD continues active surveillance for cases of Lyme Disease and promoting education in the community. No other projects are available at this time to address tick populations in Licking County but discussions are taking place.

For LaCrosse virus disease, LCHD is mapping cases through GIS software and maintaining a historical data base for summer mosquito spraying. LaCrosse virus disease is known to reemerge each year in the same geographical areas in which it presents.

Recommendations: Education on vector-borne diseases and practicing preventative measures. If symptoms develop, seek medical attention and provide information on travel and local activities involving bug bites.



Bacterial Enteric Infections

Description: Bacterial enteric infections are when pathogenic bacteria enter the body and cause disease. Symptoms include diarrhea, vomiting, nausea, abdominal cramps, and fever. The route in which these bacteria enter the body are through ingestion of feces (animal or human) in which the bacteria are in. Contamination of food, contact with animals, or consuming unpasteurized goods are common ways in which people get sick with bacterial enteric infections.

Examples: Campylobacter, Botulism, Escherichia coli (E.coli), Listeria, Salmonella, and Shigella

Data:

Figure 6: 2018 Bacterial Enteric Infections, Licking County

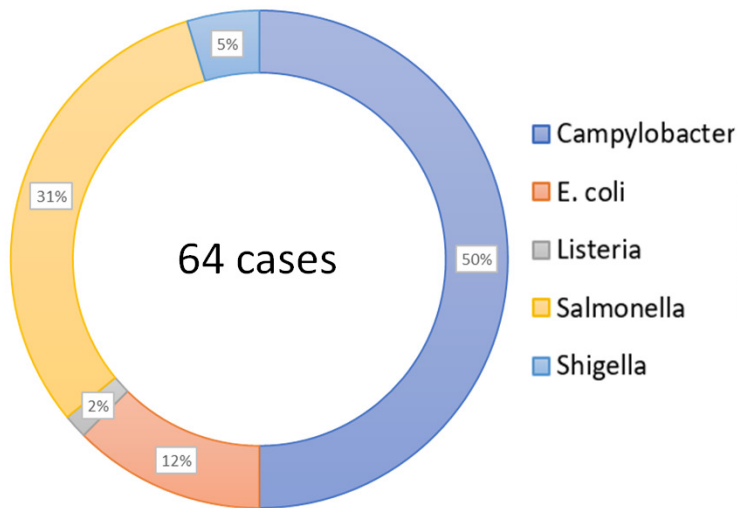
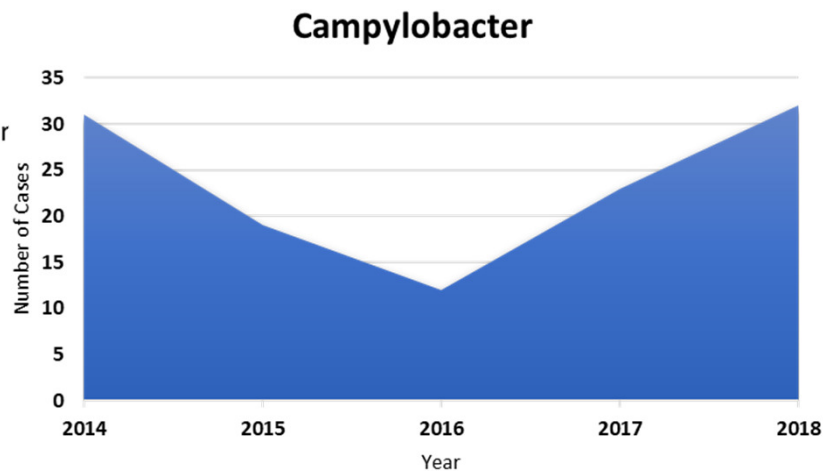


Figure 7: Campylobacter, Licking County (2014 – 2018)



Local Activity: Licking County had a 39.1% increase in reported cases of campylobacter (type of bacterial enteric infection) compared to 2017. The top exposures identified during case interviews were consumption of poultry and contact with dogs. None of the exposures were linked to a common source.

Prevention: Keys to preventing bacterial enteric infections involve washing hands with warm soapy water and thoroughly cooking raw meats to appropriate temperatures. Avoid consuming any unpasteurized juices or milk. LCHD will continue to provide education and guidance to the jurisdiction to help prevent future cases. Active surveillance will continue along with case investigations to identify any new sources of exposures.

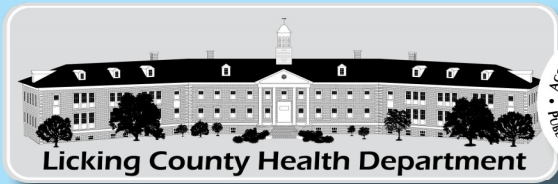
Recommendations: The single most effective preventative measure one can take is thorough, regular hand washing with soap and warm water. Education on each organism knowing sources and routes of transmission.



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Table 1: Licking County’s Top Disease Rates vs. Regional Rates

Top Reportable Diseases in Licking County in Comparison to Central Region Counties (Rate per 100,000)														
CENTRAL REGION COUNTIES	HEPATITIS C - CHRONIC		HEPATITIS B - CHRONIC		CAMPYLOBACTERIOSIS		LYME DISEASE		PERTUSSIS		CHLAMYDIA		GONORRHEA	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Crawford	54	129.4	17	40.7	1	2.4	2	4.8	1	2.4	172	412.0	37	88.6
Delaware	83	41.4	20	10.0	38	19.0	11	5.5	22	11.0	366	182.6	81	40.4
Fairfield	177	114.4	28	18.1	20	12.9	8	5.2	16	10.3	336	217.1	107	69.2
Fayette	40	139.1	20	69.6	5	17.4	0	0.0	1	3.5	76	264.3	26	90.4
Franklin	1,634	126.5	630	48.8	253	19.6	40	3.1	173	13.4	10,733	830.7	5,068	392.3
Hardin	51	162.6	12	38.3	14	44.6	0	0.0	3	9.6	90	287.0	20	63.8
Knox	69	112.6	11	18.0	17	27.8	7	11.4	9	14.7	123	200.8	33	53.9
Licking	164	94.6	37	21.3	32	18.4	21	12.1	21	12.1	571	329.2	253	145.9
Logan	45	99.3	4	8.8	10	22.1	1	2.2	12	26.5	146	322.1	35	77.2
Madison	85	193.0	22	50.0	12	27.3	0	0.0	6	13.6	97	220.3	39	88.6
Marion	160	246.3	31	47.7	21	32.3	1	1.5	2	3.1	317	487.9	73	112.4
Morrow	42	120.0	18	51.4	14	40.0	3	8.6	3	8.6	86	245.8	13	37.1
Pickaway	719	1,243.3	132	228.3	6	10.4	1	1.7	15	25.9	228	394.3	74	128.0
Union	320	564.0	54	95.2	15	26.4	2	3.5	5	8.8	206	363.1	59	104.0
Wyandot	18	81.7	4	18.2	17	77.2	0	0.0	0	0.0	53	240.6	8	36.3
OHIO	18,321	157.1	N/A	N/A	2,190	18.8	317	2.7	637	5.5	61,604	528.4	24,472	209.9



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INFLUENZA

The Licking County Health Department uses several different techniques to track local influenza activity. Influenza is not a reportable disease unless under certain conditions including a case being hospitalized, a pediatric death, or detection of a novel strain. In 2010, LCHD developed the Influenza Reporting Information System (IRIS) which collects weekly influenza statistics from local providers. Predicting influenza activity is a difficult task, but based on our historical data, flu seasons can start as early as Week 39 and last through Week 26. For this report, data will be included for the 2017 – 2018 season and 2018 – 2019 season. **Flu reports are published on the LCHD website on the dashboard page.**

Figure 8: Licking County Influenza Seasons vs. Historical Data

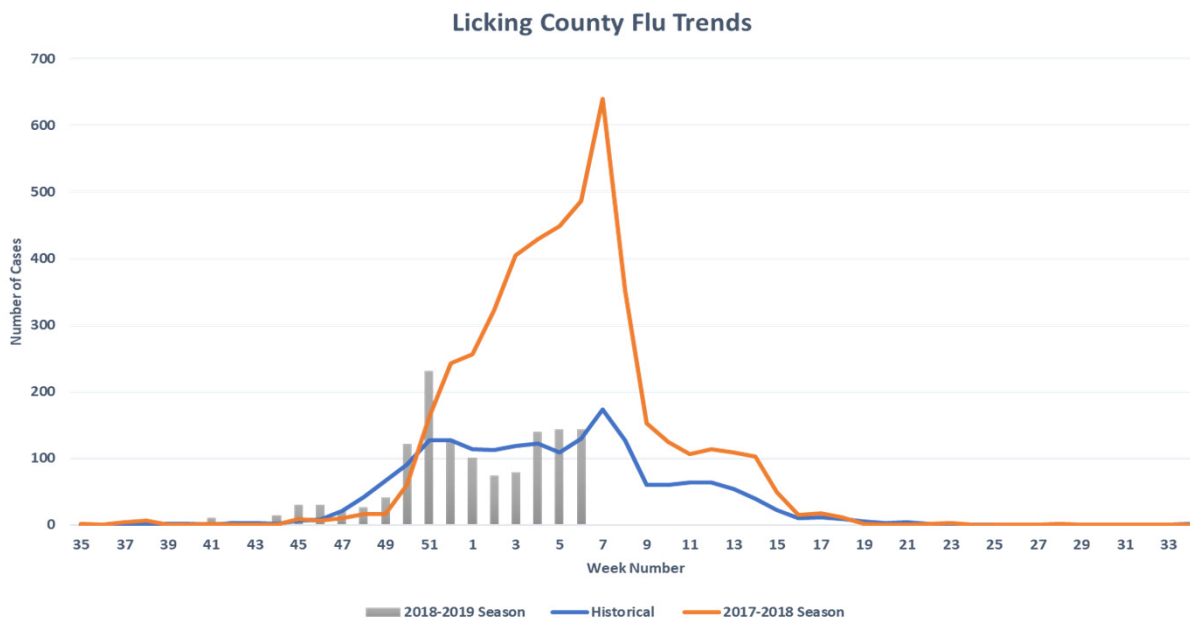


Table 2: Licking County Influenza Surveillance Totals

Flu Totals	Flu Case Types				Total
	IRIS	Hospitalizations	Pediatric Mortality	Novel	
2017 – 2018 Season	4,520	180	0	0	4,700
2018 – 2019 Season	1,305	51	0	0	1,356
Total Cases in 2018	4,657	177	0	0	4,834

Table 3: Licking County Influenza Types

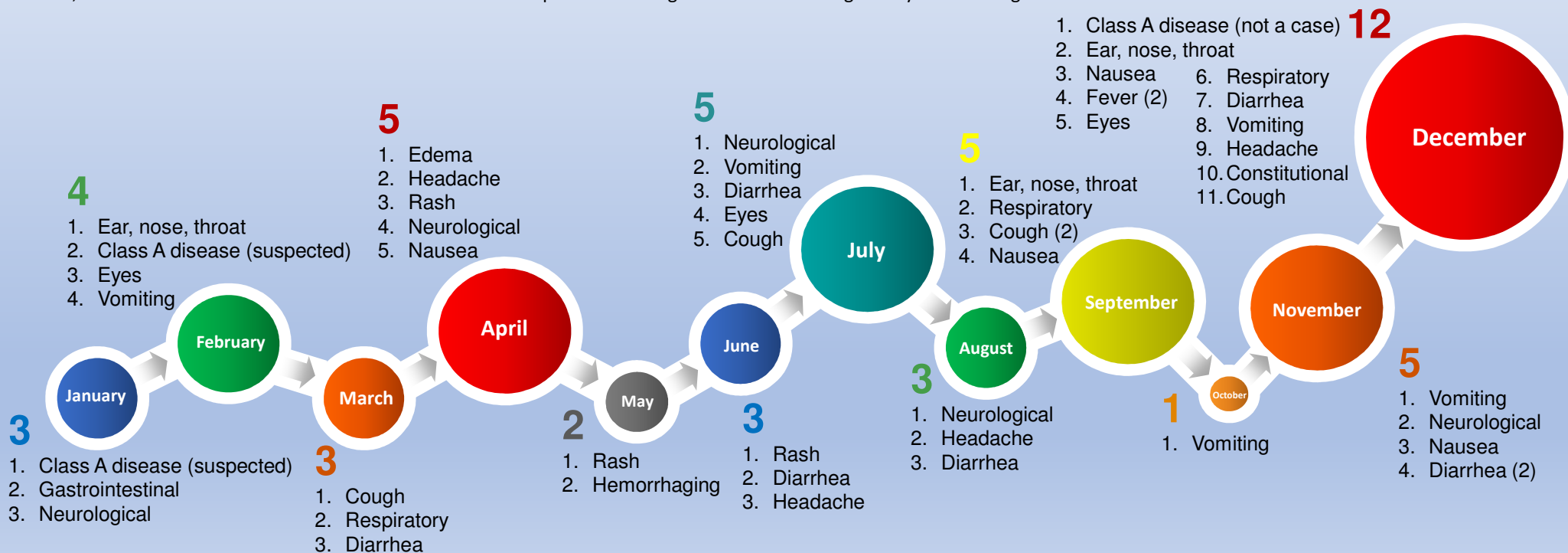
Flu Totals	IRIS Flu Types			Total
	Rapid A's	Rapid B's	Symptomatic	
2017 – 2018 Season	1,535	1,169	1,816	4,520
2018 – 2019 Season	820	114	371	1,305
Total Cases in 2018	1,605	1,197	1,855	4,657



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EPICENTER

The Licking County Health Department uses EpiCenter, a syndromic surveillance system using emergency department registration data to detect events of public health significance. The system establishes thresholds and if data exceeds these thresholds, an alert is generated. Public health staff with access to the system can investigate these alerts and identify events including, clusters, outbreaks, and seasonal illness. Below is a calendar timeline of all EpiCenter alerts generated and investigated by LCHD during 2018.





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Table 4: 2018 Rank of Reported Communicable Diseases in Licking County

Rank	Communicable Disease	Cases	Rate
1	Influenza - Seasonal (IRIS)	4657	2685.0
2	Chlamydia	571	329.2
3	Gonorrhea	253	145.9
4	Hepatitis C - chronic	166	95.7
5	Influenza - associated hospitalization	158	91.1
6	Hepatitis B (including delta) - chronic	37	21.3
7	Campylobacteriosis	32	18.4
8	Lyme Disease	21	12.1
9	Pertussis	21	12.1
10	Salmonellosis	20	11.5
11	Meningitis - aseptic/viral	13	7.5
12	Streptococcal - Group A - Invasive	13	7.5
13	Legionellosis - Legionnaires' Disease	12	6.9
14	Streptococcus pneumoniae - invasive antibiotic resistance unknown	10	5.8
15	Cryptosporidiosis	9	5.2
16	Hepatitis A	9	5.2
17	E.coli, Shiga Toxin-Producing (O157:H7, Not O157, Unknown Serotype)	8	4.6
18	Giardiasis	8	4.6
19	LaCrosse virus disease	6	3.5
20	Streptococcus pneumoniae - invasive antibiotic resistant/intermediate	4	2.3
21	Syphilis - early latent (<1year)	4	2.3
22	Syphilis - late latent (>1year) asymptomatic	4	2.3
23	Syphilis - secondary	4	2.3
24	Syphilis - stage Unknown	4	2.3
25	Varicella	4	2.3
26	CP-CRE	3	1.7
27	Hepatitis C - acute	3	1.7
28	Shigellosis	3	1.7
29	Haemophilus influenzae (invasive disease)	2	1.2
30	Hepatitis B (including delta) - acute	2	1.2
31	Hepatitis C - Perinatal Infection	2	1.2
32	Immigrant Investigation	2	1.2
33	Meningitis - bacteria (Not N. meningitidis)	2	1.2
34	Mumps	2	1.2
35	Rocky Mountain spotted fever (RMSF)	2	1.2
36	Coccidioidomycosis	1	0.6
37	Ehrlichiosis-Ehrlichia chaffeensis	1	0.6
38	Listeriosis	1	0.6
39	Malaria	1	0.6
40	Meningococcal disease - Neisseria meningitidis	1	0.6
41	Rubella - not congenital	1	0.6
42	Syphilis - primary	1	0.6