



2016 Communicable Disease Annual Report

Published: March 15, 2017

The Knox County Health Department is committed to promoting healthy lifestyles, preventing illness and protecting the environment for our community.



2016 Communicable Disease Annual Report



SUMMARY OF 2016 EVENTS

The Knox County Health Department (**KCHD**) is dedicated to conducting disease surveillance and continues to evaluate investigation protocols to better serve county residents. Notable events from 2016 that members of the KCHD Epidemiological Team (**Epi Team**) participated in include: Ebola Functional Exercise, Zika Virus Response, and Lyme Disease Surveillance.

EBOLA FUNCTIONAL EXERCISE

Members of the Knox County Health Department participated in a Ebola Functional Exercise which simulated a traveler entering the jurisdiction from a country with active transmission of the Ebola virus. The individual required active monitoring and during the course of the exercise became symptomatic requiring activation of plans and transportation to a frontline hospital. Meanwhile, hospitals were working on an increase of admissions due to a fictitious disease infecting a large percentage of county residents. KCHD tested the following capabilities during the exercise: Medical Surge, Information Sharing, Non-Pharmaceutical Interventions, Community Preparedness, Public Health Surveillance and Epidemiological Investigation, Mass Care, and Responder Safety and Health.

ZIKA VIRUS RESPONSE

In 2016, KCHD investigated five reports of travel associated Zika Virus infections. Of the five, only one case had laboratory evidence of Zika Virus infection. The lab results only classified the case as being “probable” and not “confirmed”. This individual had traveled outside of the United States to Aruba and experienced symptoms consistent for Zika Virus (joint pain, rash, fever, and other flu-like symptoms.) All other cases had laboratory evidence ruling out Zika Virus and classifying them as “not a case”. KCHD continues surveillance for all mosquito borne illnesses and during the summer conducts mosquito control practices.

LYME DISEASE SURVEILLANCE

In 2016, Knox County had the highest number of reported cases of Lyme Disease for a full calendar year. A total of seven cases were reported in 2016 with the expected average for a full year being three cases. Five out of the seven cases appear to have been acquired locally in Knox County. Cases in Ohio increased significantly back in 2013 and have continued a steady increase throughout 2016. The majority of Lyme Disease cases in the state are reported from the northeast region. 68 percent of Ohio counties (Knox included) have established populations of blacklegged deer ticks, the vector for Lyme Disease. KCHD will continue Lyme Disease surveillance to assess whether the cases in 2016 were an anomaly or if an emergence of increased activity is presenting in Knox County.

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REPORTABLE DISEASES

There are three classes of reportable diseases in Ohio which require different timeframes for notifications based on their importance and impact on the health of the public.

CLASS A = 0 cases

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.

CLASS B = 357 cases

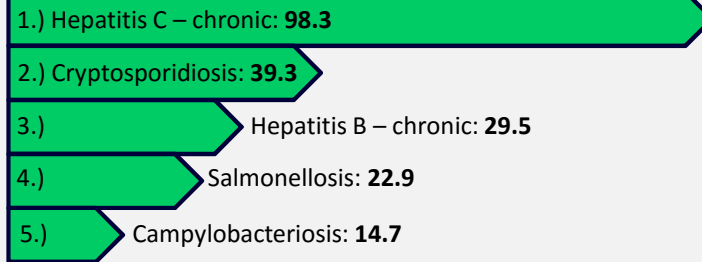
Disease of public health concern needing timely response because of potential for epidemic spread – report by the end of the next business day after the existence of a case, suspected case, or a positive laboratory result is known.

CLASS C = 1 outbreak

Report an outbreak, unusual incident or epidemic of other diseases by the end of the next business day.

Top 5 Class B Incidence Rates

(Rates per 100,000)



Sexually Transmitted Diseases

GONORRHEA

- 3rd lowest rate in the Central Region
- 53.3% of cases were coinfections of Chlamydia

CHLAMYDIA

- 6.9% increase from 2015
- 21.3% of cases had prior Chlamydia infections

2016 Knox County Confirmed Outbreaks

The Knox County Health Department investigated one outbreak in 2016. The outbreak was in a skilled nursing and rehabilitation center and the causative agent was *Acinetobacter baumannii* (**Acinetobacter**). A total of four people tested positive for *Acinetobacter* and all were ventilator patients. Isolation procedures were put in place and patients coming into the facility were screened for *Acinetobacter*. The outbreak started in February 2016 and resolved a month later.

The Ohio Department of Health and Ohio Department of Agriculture initiated an investigation into a herdshare farm located in Knox County. A total of five people were sick with *Campylobacter jejuni* (**Campylobacteriosis**) from consuming raw milk from the herdshare farm. None of the cases were Knox County residents so KCHD staff were not involved in the primary investigation.



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Top Reportable Diseases in Knox County in Comparison to Central Region Counties (Rate per 100,000)

CENTRAL REGION COUNTIES	HEPATITIS C - CHRONIC		CRYPTOSPORIDIOSIS		HEPATITIS B - CHRONIC		SALMONELLOSIS		CAMPYLOBACTERIOSIS		CHLAMYDIA		GONORRHEA	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Crawford	89	210.4	6	14.2	18	42.5	9	21.3	3	7.1	172	406.6	17	40.2
Delaware	98	50.8	149	77.2	30	15.5	25	13.0	27	14.0	361	187.0	72	37.3
Fairfield	219	144.6	43	28.4	57	37.6	15	9.9	12	7.9	415	274.1	66	43.6
Fayette	83	289.4	1	3.5	22	76.7	4	13.9	13	45.3	91	317.3	21	73.2
Franklin	2,138	170.8	959	76.6	604	48.3	191	15.3	161	12.9	9,972	796.7	4,216	336.8
Hardin	68	214.6	4	12.6	11	34.7	9	28.4	5	15.8	88	277.8	6	18.9
Knox	60	98.3	24	39.3	18	29.5	14	22.9	9	14.7	155	253.8	15	24.6
Licking	176	103.2	37	21.7	32	18.8	23	13.5	12	7.0	640	375.2	219	128.4
Logan	31	68.3	40	88.1	3	6.6	3	6.6	6	13.2	113	249.0	16	35.3
Madison	105	238.1	5	11.3	25	56.7	8	18.1	9	20.4	139	315.2	27	61.2
Marion	233	356.5	22	33.7	36	55.1	6	9.2	7	10.7	331	506.5	71	108.6
Morrow	64	182.5	9	25.7	15	42.8	5	14.3	5	14.3	65	185.3	12	34.2
Pickaway	980	1,719.4	11	19.3	63	110.5	7	12.3	10	17.5	196	343.9	38	66.7
Union	470	865.9	28	51.6	58	106.9	12	22.1	23	42.4	210	386.9	47	86.6
Wyandot	19	85.4	5	22.5	2	9.0	4	18.0	18	80.9	43	193.3	3	13.5
OHIO	23,950	206.2	1,944	16.7	3,853	33.2	1,543	13.3	2,015	17.3	58,261	501.6	19,519	168.1

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Review of Top Reportable Diseases in Knox County

HEPATITIS C – CHRONIC: Cases of Hepatitis C – chronic decreased in Knox County from 2015 to 2016 (15.5 percent decrease) even though increases are being seen across the state. Still, Hepatitis C – chronic was the leading communicable disease for Knox County in 2016. Injection drugs are considered to be the major contributing factor for Hepatitis C – chronic cases.

CRYPTOSPORIDIOSIS: The Cryptosporidiosis rate went from 9.8 (2015) to 39.3 (2016) which may have resulted from a large outbreak linked to Zoombezi Bay in Delaware County over the summer. The Zoombezi Bay outbreak accounted for over 200 cases and Knox County had two cases with confirmed travel to Zoombezi Bay during the appropriate timeframe. 50 percent of the Crypto cases in Knox County occurred during the Zoombezi Bay timeframe and could have resulted in illness by either attending the water park or someone introducing Crypto into one of the water parks in Knox County.

HEPATITIS B - CHRONIC: Increases in Hepatitis B cases can also be attributed to the use of injection drugs.

SALMONELLOSIS: Cases of Salmonella were isolated and spread out over the entire county. One case was linked to an outbreak outside of Knox (Wayne County). The Salmonella rate increased from 9.8 (2015) to 22.9 (2016).

CAMPYLOBACTERIOSIS: Campy cases were also isolated and spread out over the entire county. Cases increased 25 percent from 2015 to 2016.

CHLAMYDIA: Knox County had an increase in Chlamydia cases (6.9 percent increase from 2015) and had the fifth lowest rate amongst Central Ohio Region counties. 21.3 percent of the cases reported in 2016 had prior Chlamydia infections.

GONORRHEA: Knox County had the third lowest rate of Gonorrhea in 2016. 53.3 percent of Gonorrhea cases were co-infections of Chlamydia in 2016.

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REPORTABLE DISEASE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YTD	+/-
Amebiasis	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Anaplasmosis - Anaplasma phagocytophilum	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Anthrax	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Botulism - foodborne	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Botulism - infant	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Botulism - wound	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Brucellosis	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Campylobacteriosis	0	0	1	0	1	0	3	2	0	1	0	1	9	+
Chancroid	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Chlamydia	12	13	19	17	11	9	13	12	15	13	9	13	156	+
Cholera	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Coccidioidomycosis	0	0	0	0	0	0	0	0	0	0	1	0	1	+
Creutzfeldt - Jakob Disease	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Creutzfeldt - Jakob Disease - variant (vCJD)	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Cryptosporidiosis	3	1	0	0	1	0	2	8	6	3	0	0	24	+
Cyclosporiasis	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Cytomegalovirus - congenital (CMV)	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	-
Dengue Hemorrhagic Fever	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0	0	=
E.coli – (shiga toxin producing) - Not O157:H7	0	0	0	0	0	0	0	0	0	0	0	0	0	-
E.coli – (shiga toxin producing) - O157:H7	0	0	0	0	0	0	0	0	0	0	0	0	0	=
E.coli – (shiga toxin producing) Unknown serotype	0	0	0	0	0	0	0	0	4	2	0	0	6	+

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E.coli – (O157:H7, Not O157, Unknown)	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Eastern equine encephalitis virus disease	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Ehrlichiosis/Anaplasmosis - Undetermined	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Ehrlichiosis-Ehrlichia chaffeensis	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Ehrlichiosis-Ehrlichia ewingii	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Encephalitis - post chickenpox	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Encephalitis - post mumps	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Encephalitis - post other infection	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Encephalitis - primary viral	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Giardiasis	0	0	0	1	0	0	2	1	1	0	0	0	5	+
Gonorrhea	1	0	2	1	0	1	1	1	1	3	3	1	15	+
Granuloma inguinale	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Haemophilus influenzae (invasive disease)	0	0	0	0	0	0	0	0	0	1	0	0	1	-
Hantavirus - infection	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Hantavirus - pulmonary syndrome	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Hemolytic uremic syndrome (HUS)	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Hepatitis - acute viral undetermined etiology	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Hepatitis A	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Hepatitis B - investigation	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Hepatitis B - Perinatal Infection	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Hepatitis B (including delta) - acute	1	0	0	0	0	0	0	1	0	1	0	0	3	+
Hepatitis B (including delta) - acute/chronic	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Hepatitis B (including delta) - chronic	2	0	1	4	1	3	0	2	1	1	2	1	18	+

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Hepatitis C - acute	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Hepatitis C - acute/chronic	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Hepatitis C - chronic	4	5	4	7	2	5	8	4	9	1	3	8	60	-
Hepatitis E	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Herpes - congenital	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Immigrant Investigation	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Influenza – ODH Lab Results	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Influenza – associated hospitalization	0	0	5	1	0	0	0	0	0	0	0	0	6	-
Influenza – associated pediatric mortality	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Influenza Seasonal (IRIS)	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Kawasaki disease	0	0	0	0	0	0	0	0	0	0	0	0	0	=
LaCrosse virus disease	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Legionellosis – Legionnaires’ Disease	0	0	0	0	1	1	0	1	0	0	3	2	8	+
Leprosy (Hansen Disease)	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Leptospirosis	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Listeriosis	0	0	0	0	0	0	1	0	0	0	0	0	1	+
Lyme Disease	0	0	1	0	0	0	1	2	0	1	1	1	7	+
Lymphogranuloma venereum (LGV)	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Malaria	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Measles – imported from outside Ohio	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Measles – indigenous to Ohio	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Measles – status not determined	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Meningitis – aseptic/viral	0	0	0	0	1	1	0	0	0	0	0	0	2	-

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Meningitis – bacterial (Not N. meningitidis)	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Meningococcal disease - Neisseria meningitidis	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Mumps	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Mycobacterial disease – other than tuberculosis	0	1	0	1	1	0	0	0	0	0	0	0	3	-
Pertussis	0	0	0	0	0	0	0	0	0	1	2	1	4	-
Plague	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Poliomyelitis – non-paralytic	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Poliomyelitis – paralytic	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Poliomyelitis – paralytic/non-paralytic	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Powassan virus disease	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Psittacosis	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Q fever, acute	0	0	0	0	0	0	0	0	0	0	1	0	1	+
Q fever, chronic	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Rabies – animal	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Reye syndrome	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Rheumatic fever	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Rocky Mountain spotted fever (RMSF)	1	0	0	0	0	0	0	0	0	0	0	0	1	+
Rubella – congenital	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Rubella – not congenital	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Salmonellosis	0	0	0	2	1	1	2	2	3	1	1	1	14	+
Severe Acute Respiratory Syndrome (SARS)	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Shigellosis	0	0	0	0	0	0	0	0	1	1	0	0	2	+
Smallpox	0	0	0	0	0	0	0	0	0	0	0	0	0	=

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St. Louis encephalitis virus disease	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Staphylococcal aureus - intermediate (VISA)	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Staphylococcal aureus - vancomycin resistant (VRSA)	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Streptococcal – Group A – invasive	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Streptococcal – Group B – in newborn	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Streptococcal toxic shock syndrome (STSS)	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Streptococcus pneumoniae - unknown resistance	1	0	1	0	0	0	0	0	0	0	0	0	2	=
Streptococcus pneumoniae – intermediate resistance	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Syphilis – congenital	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Syphilis – early latent (<1 year)	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Syphilis – late latent (>1 year) asymptomatic	0	0	0	0	0	0	0	0	0	0	1	0	1	=
Syphilis – late with no neurosyphilis	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Syphilis – neurosyphilis	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Syphilis – primary	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Syphilis – secondary	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Syphilis – stage Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Syphilis – unknown latent	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Tetanus	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	=
Toxoplasmosis – congenital	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Trichinosis	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Tuberculosis	0	0	0	0	0	0	0	1	0	0	0	0	1	+

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Tuberculosis – multi-drug resistant (MDR-TB)	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Tularemia	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Typhoid fever	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Typhus fever	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Varicella	0	0	0	1	1	0	0	0	1	0	0	2	5	-
Vibrio parahaemolyticus infection	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Vibrio vulnificus infection	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Vibriosis – other (not cholera)	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Viral Hemorrhagic Fever (VHF)	0	0	0	0	0	0	0	0	0	0	0	0	0	=
West Nile virus disease	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Western equine encephalitis virus disease	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Yellow fever	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Yersiniosis	0	0	0	0	0	0	0	0	0	0	0	0	0	=
Zika virus disease	1	0	0	0	0	0	0	0	0	0	0	0	1	+

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