



## 2015 Communicable Disease Annual Report

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



## 2015 Communicable Disease Annual Report



### SUMMARY OF 2015 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 2015 that members of the KCHD Epidemiological Team (**Epi Team**) participated in include: Ebola Preparedness, increase usage of the syndromic surveillance system EpiCenter, and outbreaks in Amish communities. Members also participated in local exercises to test the department's response plans.

### EBOLA

KCHD continued to develop Ebola response plans in 2015 and prepared for a Central Region full scale exercise addressing an Ebola patient response. Planning elements developed at the local level for the exercise included an Ebola transportation plan, Ebola PPE plan, and an Ebola surveillance and monitoring plan. The full scale exercise is scheduled to take place in April 2016.

### EPICENTER

EpiCenter is a syndromic surveillance system linked into a hospital's emergency department and collects information for analysis. The system is designed to identify common indicators and generate anomalies based on an abnormal number of events occurring in a defined timeframe. If an anomaly is generated, KCHD staff are alerted of the event and conduct investigations to determine what triggered the notification. In 2015, there were a total of 28 generated anomalies through Knox Community Hospital (**KCH**). The number one classifier generated was "Constitutional" which accounted for 32.1 percent of anomalies. Constitutional is defined as a group of symptoms that can affect the entire body. This classifier is typically generated during flu season and can be labeled as a seasonal illness during the investigation process.

### AMISH OUTBREAKS

There were only two outbreaks reported in 2015 and both were seen in Amish populations. Also, both were caused by vaccine preventable diseases (**Pertussis and Chickenpox**). KCHD made efforts to conduct full investigations for both outbreaks and offer vaccine clinics in both communities with little success. After the Measles outbreak in 2014, KCHD was hoping for continued collaboration amongst the Amish but new approaches amongst the communities will need to be used to prevent disease.

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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 = 375 cases

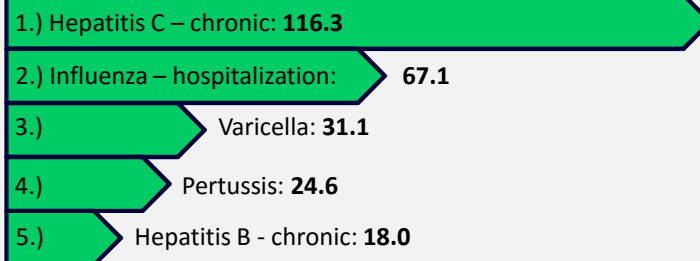
Disease of public health concern needing timely response because of potential for epidemic spread – report by the end of the next business day after the existence of a case, suspected case, or a positive laboratory result is known.

### CLASS C = 2 outbreaks

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

- 2<sup>nd</sup> lowest rate in the Central Region
- 36.4% of cases were coinfections of Chlamydia

### CHLAMYDIA

- 11.1% increase from 2014
- 24.1% of cases had prior Chlamydia infections

## 2015 Knox County Confirmed Outbreaks

There were only two outbreaks in Knox County reported in 2015. The causative agent for the first was *Bordetella pertussis* (**Pertussis**) and the exposed population was a group of Amish school children. The Knox County Health Department (**KCHD**) attempted a full investigation but parents of the children were hesitant to share information. KCHD held a free clinic administering Pertussis vaccine in the area where the outbreak was occurring. The outbreak resolved and the final count of children ill were 17.

The second outbreak was again in a group of Amish but in a different location. The causative agent for this outbreak was **Chickenpox** that originated from exposure to a case of **Shingles**. Shingles and chickenpox are both caused by the varicella zoster virus (**VZV**). This group of Amish were also reluctant to provide information to KCHD for the completion of the 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		INFLUENZA-ASSOCIATED HOSPITALIZATION		VARICELLA		PERTUSSIS		HEPATITIS B - CHRONIC		CHLAMYDIA		GONORRHEA	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Crawford	129	304.9	8	18.9	1	2.4	0	0.0	23	54.4	168	397.1	17	40.2
Delaware	88	45.6	63	32.6	14	7.3	20	10.4	35	18.1	391	202.6	68	35.2
Fairfield	277	182.9	32	21.1	15	9.9	76	50.2	39	25.8	408	269.5	80	52.8
Fayette	90	313.8	9	31.4	0	0.0	3	10.5	36	125.5	94	327.8	16	55.8
Franklin	1,624	129.7	646	51.6	53	4.2	224	17.9	869	69.4	8,536	681.9	2,949	235.6
Hardin	56	176.8	15	47.3	1	3.2	0	0.0	11	34.7	83	262.0	16	50.5
<b>Knox</b>	<b>71</b>	<b>116.3</b>	<b>41</b>	<b>67.1</b>	<b>19</b>	<b>31.1</b>	<b>15</b>	<b>24.6</b>	<b>11</b>	<b>18.0</b>	<b>145</b>	<b>237.5</b>	<b>11</b>	<b>18.0</b>
Licking	124	72.7	111	65.1	5	2.9	37	21.7	16	9.4	552	323.6	174	102.0
Logan	34	74.9	5	11.0	2	4.4	5	11.0	13	28.6	71	156.4	19	41.9
Madison	169	383.3	19	43.1	4	9.1	1	2.3	32	72.6	91	206.4	21	47.6
Marion	294	449.9	28	42.8	5	7.7	2	3.1	42	64.3	291	445.3	114	174.4
Morrow	48	136.9	12	34.2	1	2.9	0	0.0	9	25.7	66	188.2	10	28.5
Pickaway	1,240	2,175.5	32	56.1	3	5.3	4	7.0	47	82.5	151	264.9	19	33.3
Union	786	1,448.1	25	46.1	2	3.7	2	3.7	58	106.9	210	386.9	45	82.9
Wyandot	20	89.9	9	40.5	2	9.0	1	4.5	6	27.0	43	193.3	3	13.5
<b>OHIO</b>	<b>19,204</b>	<b>165.4</b>	<b>5,215</b>	<b>44.9</b>	<b>458</b>	<b>3.9</b>	<b>827</b>	<b>7.1</b>	<b>N/A</b>	<b>N/A</b>	<b>54,340</b>	<b>467.9</b>	<b>15,765</b>	<b>135.7</b>

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### Review of Top Reportable Diseases in Knox County

**HEPATITIS C – CHRONIC:** Increases in Hepatitis C cases continue to be seen across Ohio. The major contributing factor appears to be the use of injection drugs. Prescription drug abuse is resulting in cheaper alternatives, such as heroin and leading to more Hepatitis cases. A breakdown of the population of Hepatitis C cases show 54.2 percent were ≤ 34 years of age and 84.7 percent were classified below the cutoff for “baby boomers” (cases born after 1964).

**INFLUENZA – ASSOCIATED HOSPITALIZATIONS:** The 2014 – 2015 flu season peaked around week 51 and was one of the worst flu seasons going back five years. Large numbers of cases were reported throughout the first few months in 2015 and as a result several hospitalizations occurred. Once the 2014 – 2015 flu season was declared over, no other influenza – associated hospitalizations were reported for the rest of the year.

**VARICELLA:** Knox County had the highest Varicella rate in the Central Region and this was due to an outbreak amongst a group of Amish in the county. The outbreak accounted for nearly 90% of the Varicella cases reported in 2015 for Knox County.

**PERTUSSIS:** Knox County also had an outbreak of Pertussis amongst another group of Amish in 2015. Efforts were made to offer free vaccine to Amish in the area of the outbreak with little success. KCHD will continue to work with Amish in the community to increase awareness about vaccine preventable diseases.

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

**CHLAMYDIA:** Knox County had an increase in Chlamydia cases (11.1 percent increase from 2014) and had the sixth lowest rate amongst Central Ohio Region counties. 24.1 percent of the cases reported in 2015 had prior Chlamydia infections.

**GONORRHEA:** Knox County had the second lowest rate of Gonorrhea in 2015. 36.4 percent of Gonorrhea cases were co-infections of Chlamydia in 2015.

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2015														
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	0	0	1	1	1	2	1	1	0	1	8	↑
Chancroid	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Chlamydia	8	19	13	13	17	6	7	17	15	10	13	7	145	↑
Cholera	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Coccidiomycosis	0	0	0	0	0	0	0	0	0	0	0	0	0	-
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	1	0	0	2	0	1	0	1	1	0	0	0	6	↓
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	1	1	↑
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 - Not O157:H7	1	0	0	0	0	0	0	0	0	0	0	0	1	-
E.coli - O157:H7	0	0	0	0	0	0	0	0	0	0	0	0	0	-
E.coli - Unknown serotype	0	0	0	0	0	0	1	0	0	0	0	0	1	↑

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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	0	0	0	0	0	0	0	1	0	1	↓
Gonorrhea	0	0	1	0	0	0	0	1	0	3	3	3	11	↓
Granuloma inguinale	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Haemophilus influenzae (invasive disease)	1	0	1	0	0	0	0	0	0	0	0	0	2	↑
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	1	0	0	0	0	0	0	0	0	0	1	-
Hepatitis B (including delta) - acute	0	0	0	1	1	2	0	0	1	1	0	1	7	↓
Hepatitis B (including delta) - acute/chronic	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Hepatitis B (including delta) - chronic	1	1	1	1	2	0	1	1	1	1	1	0	11	↑
Hepatitis C - acute	0	0	0	1	0	0	0	0	1	0	0	0	2	↓

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Hepatitis C - acute/chronic	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Hepatitis C - chronic	3	5	10	3	4	9	6	7	6	4	6	8	71	↑
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	1	0	0	0	0	0	0	0	0	1	↑
Influenza – ODH Lab Results	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Influenza – associated hospitalization	16	14	8	2	1	0	0	0	0	0	0	0	41	↑
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	1	0	0	0	1	-
Legionellosis – Legionnaires’ Disease	1	0	0	0	0	1	0	0	0	0	0	0	2	↓
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	0	0	0	0	0	0	0	-
Lyme Disease	0	0	0	0	0	0	2	0	0	0	0	0	2	↑
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	0	0	1	1	0	0	0	3	↑
Meningitis – bacterial (Not N. meningitidis)	0	1	0	0	0	0	1	0	0	0	0	0	2	↑

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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	2	0	0	0	0	1	1	0	0	1	6	↑
Pertussis	6	1	3	0	1	1	2	0	0	0	1	0	15	↑
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	0	0	0	-
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)	0	0	0	0	0	0	0	0	0	0	0	0	0	-
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	0	1	0	1	2	1	1	0	0	6	↓
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	0	0	0	0	0	-
Smallpox	0	0	0	0	0	0	0	0	0	0	0	0	0	-
St. Louis encephalitis virus disease	0	0	0	0	0	0	0	0	0	0	0	0	0	-

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Staphylococcal aureus - intermediate (VISA)	0	0	1	0	0	0	0	0	0	0	0	0	1	↑
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	0	0	1	0	0	0	0	0	0	0	0	1	2	↓
Streptococcus pneumoniae – intermediate resistance	1	0	0	0	0	0	0	0	0	0	0	1	2	↑
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	1	0	0	0	0	0	1	↑
Syphilis – late latent (>1 year) asymptomatic	0	0	0	0	0	0	0	1	0	0	0	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	1	1	↑
Syphilis – stage Unknown	0	0	0	0	1	0	0	0	0	0	0	0	1	↑
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	0	0	0	0	0	0	↓
Tuberculosis – multi-drug resistant (MDR-TB)	0	0	0	0	0	0	0	0	0	0	0	0	0	-

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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	0	5	2	5	6	0	1	0	0	19	↑
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	-

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