



2014 Communicable Disease Annual Report

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



SUMMARY OF 2014 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 2014 that members of the KCHD Epidemiological Team (**Epi Team**) participated in include: Amish Measles Outbreak, Legionnaires' Disease Outbreak, and Ebola Preparedness. Members also participated in local exercises to test the department's response plans.

MEASLES

Members of the KCHD Epi Team initiated an investigation of Measles during March of 2014. The initial case was suspected of having Dengue Fever but further evidence and multiple cases confirmed it was Measles that originated from a mission trip to the Philippines. The outbreak was confined to the Amish population that spanned into eight other counties. Knox County accounted for 195 confirmed cases over three months. A decision was made for all counties with confirmed cases to go into Unified Command in order to coordinate resources and collaborate during the response. Mass vaccination clinics were held in multiple counties to provide protection and help stop the outbreak from spreading.

KCHD EPI TEAM

The KCHD's Epidemiological Team met frequently during 2014 to discuss local communicable disease activity and emerging issues in the county. Typically, the team meets bimonthly but during 2014 there was so much communicable disease activity that team members met multiple times each month. All KCHD Epi Team members gained experience and played important roles during the outbreak investigations of 2014.

REPONSE PLANS

As a result of all of the communicable disease activity in 2014, plans were updated to address improvement items and guidance from the Centers for Disease Control and Prevention (**CDC**) and Ohio Department of Health (**ODH**). Most of the updates were made in response to Ebola with others stemming from the eight outbreak investigations that occurred in 2014. The Epidemiological Response Plan is still being updated and will be reviewed by Epi Team members in the coming months.

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 = 195 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 = 301 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 = 8 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)

- 1 Hepatitis C – chronic: **105.2**
- 2 Hepatitis B – acute: **19.7**
- 3 Cryptosporidiosis: **14.8**
- 4 Salmonellosis: **13.2**
- 5 Legionellosis – Legionnaires’ Disease: **9.9**

Sexually Transmitted Diseases

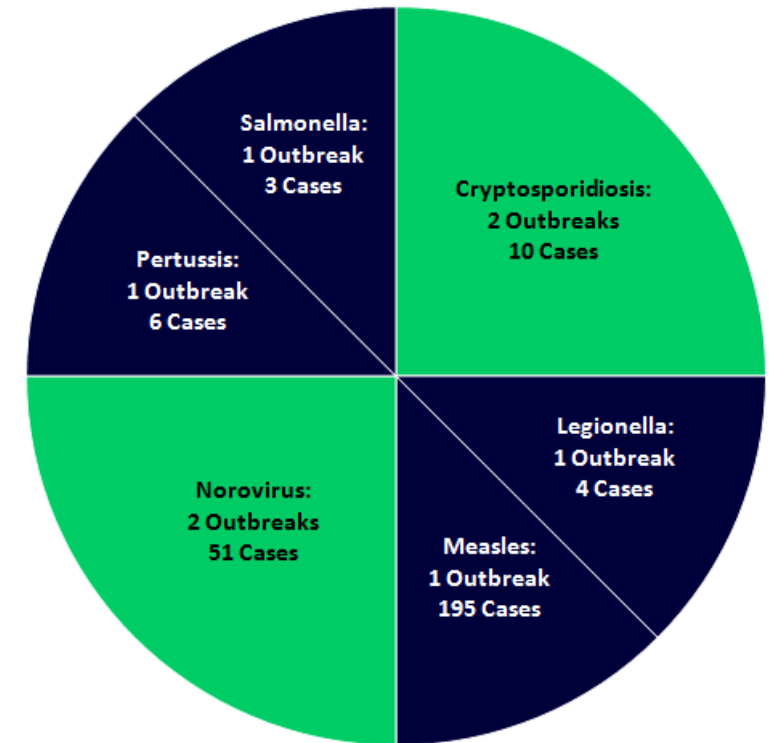
GONORRHEA

- 33.1% increase from 2013
- 50% of cases were coinfections of Chlamydia

CHLAMYDIA

- 23.8% increase from 2013
- 25.6% of cases had prior Chlamydia infections

2014 Knox County Confirmed Outbreaks





2014 Communicable Disease Annual Report



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

CENTRAL REGION COUNTIES	HEPATITIS C - CHRONIC		HEPATITIS B - ACUTE		CRYPTOSPORIDIOSIS		SALMONELLOSIS		LEGIONNAIRES' DISEASE		CHLAMYDIA		GONORRHEA	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Crawford	87	203.2	12	28.0	2	4.7	3	7.0	2	4.7	191	446.2	23	53.7
Delaware	86	46.5	3	1.6	3	1.6	17	9.2	5	2.7	312	168.7	50	27.0
Fairfield	247	165.9	21	14.1	2	1.3	13	8.7	1	0.7	323	217.0	43	28.9
Fayette	63	218.1	11	38.1	1	3.5	1	3.5	0	0.0	89	308.2	6	20.8
Franklin	1,764	145.5	130	10.7	40	3.3	161	13.3	125	10.3	8,579	707.7	2,953	243.6
Hardin	59	186.5	3	9.5	2	6.3	2	6.3	0	0.0	73	230.7	11	34.8
Knox	64	105.2	12	19.7	9	14.8	8	13.2	6	9.9	130	213.8	12	19.7
Licking	118	70.1	2	1.2	5	3.0	18	10.7	9	5.3	556	330.2	136	80.8
Logan	32	70.4	0	0.0	2	4.4	5	11.0	2	4.4	113	248.5	28	61.6
Madison	150	346.6	8	18.5	1	2.3	0	0.0	1	2.3	105	242.6	15	34.7
Marion	191	289.8	13	19.7	3	4.6	10	15.2	1	1.5	367	556.9	105	159.3
Morrow	43	122.7	2	5.7	0	0.0	6	17.1	3	8.6	66	188.4	4	11.4
Pickaway	1,101	1,955.5	35	62.2	1	1.8	6	10.7	7	12.4	145	257.5	27	48.0
Union	702	1,316.9	47	88.2	6	11.3	8	15.0	3	5.6	230	431.5	36	67.5
Wyandot	16	71.3	0	0.0	2	8.9	0	0.0	1	4.5	40	178.2	5	22.3
OHIO	18,546	160.0	1,162	10.0	324	2.8	1,202	10.4	407	3.5	53,580	462.1	15,767	136.0

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

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.

HEPATITIS B – ACUTE: Hepatitis B increases can also be attributed to prescription drug abusers resorting to heroin and other IV drugs.

CRYPTOSPORIDIOSIS: Historically, Knox County has had an issue with the number of reported Cryptosporidiosis cases and identifying the sources of exposure. In 2014, all Crypto cases were linked to two outbreaks with the sources of exposure being calves and strawberries.

SALMONELLOSIS: An outbreak of Salmonella was discovered while investigating a Norovirus outbreak at a local nursing home. Specimens were submitted to confirm Norovirus and one came back positive for Salmonella. Two other cases were linked to the confirmed case. All other Salmonella cases were isolated around the county.

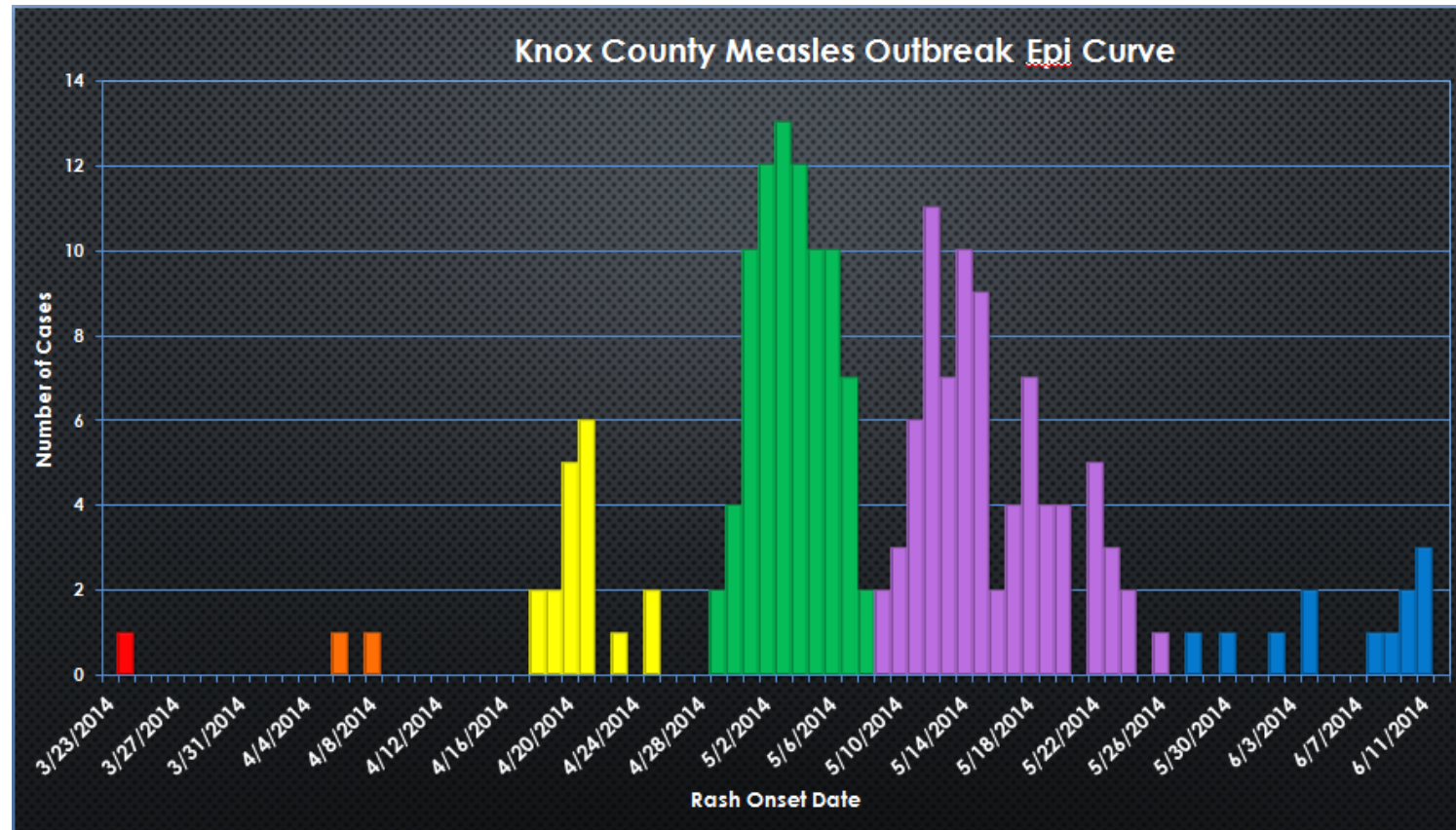
LEGIONNAIRES' DISEASE: The KCHD Epi Team investigated an outbreak of Legionnaires' Disease at a nursing home from April to October. Staff conducted multiple interviews, site visits to the facility and a private contractor was hired to test the water throughout the facility. All samples tested negative and no common exposures amongst cases were identified.

CHLAMYDIA: Knox County had an increase in Chlamydia cases (23.8 percent increase from 2013) and ranked twelfth amongst the Central Ohio Region counties for Chlamydia rates. 25.6 percent of the cases reported in 2014 had prior Chlamydia infections.

GONORRHEA: A 33.1 percent increase in Gonorrhea cases were seen in Knox County for 2014. 50 percent of Gonorrhea cases were co-infections of Chlamydia in 2014.

OUTBREAKS

The Knox County Health Department (**KCHD**) investigated a total of eight outbreaks in 2014. The major outbreak of 2014 was Measles amongst the Amish which extended into eight other counties and involved a total of 377 confirmed cases. The outbreak resulted from a group of Amish missionaries returning home from a trip to the Philippines. Based on the information collected during the investigation, one individual was exposed to the Measles while in the Philippines which caused one of the largest Measles outbreaks in recent history.



2014														
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	0	0	3	3	0	1	0	0	7	↓
Chancroid	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Chlamydia	4	12	10	8	8	14	9	14	16	21	5	9	130	↑
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	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	2	0	1	1	0	1	4	0	0	0	0	0	9	↓
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 - Not O157:H7	0	0	0	1	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	0	0	0	0	0	0	0	-
↑/↓ *Arrows indicate an increase or decrease compared to 2013 Communicable Disease Totals														

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

2014														
REPORTABLE DISEASE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YTD	↑/↓
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	2	0	0	0	0	1	3	↓
Gonorrhea	0	0	2	1	3	1	0	2	2	1	0	0	12	↑
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	1	0	0	0	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	1	1	1	0	0	0	0	0	0	0	0	3	↓
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	1	0	0	0	0	0	1	↑
Hepatitis B (including delta) - acute	1	1	0	1	0	1	3	1	2	0	2	0	12	↑
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	0	1	0	0	0	0	0	0	0	0	0	2	↑
Hepatitis C - acute	1	0	0	0	1	1	0	0	0	0	0	0	3	↑

↑/↓ *Arrows indicate an increase or decrease compared to 2013 Communicable Disease Totals

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

2014														
REPORTABLE DISEASE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YTD	↑/↓
Hepatitis C - acute/chronic	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Hepatitis C - chronic	2	4	5	9	7	2	6	9	8	5	5	2	64	↑
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	4	1	1	0	0	0	0	0	0	0	0	12	18	↑
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	1	0	0	0	0	0	1	-
Legionellosis – Legionnaires’ Disease	0	0	1	1	0	0	2	2	0	0	0	0	6	↑
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	0	0	0	0	0	0	0	↓
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	1	1	0	0	0	0	0	0	0	0	2	↑
Measles – indigenous to Ohio	0	0	0	37	136	20	0	0	0	0	0	0	193	↑
Measles – status not determined	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Meningitis – aseptic/viral	0	0	0	0	0	0	0	0	0	0	0	0	0	↓
Meningitis – bacterial (Not N. meningitidis)	0	0	0	0	0	0	0	0	0	0	0	0	0	↓

↑/↓ *Arrows indicate an increase or decrease compared to 2013 Communicable Disease Totals

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

2014														
REPORTABLE DISEASE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YTD	↑/↓
Meningococcal disease - Neisseria meningitidis	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Mumps	0	0	0	1	0	0	0	0	0	3	0	0	4	↑
Mycobacterial disease – other than tuberculosis	0	0	0	2	0	0	2	0	0	0	0	0	4	↑
Pertussis	0	0	1	0	1	1	1	0	0	0	0	1	5	-
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	2	3	2	0	1	0	0	0	0	0	8	-
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	-
↑/↓ *Arrows indicate an increase or decrease compared to 2013 Communicable Disease Totals														

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

2014														
REPORTABLE DISEASE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YTD	↑/↓
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	1	0	0	0	0	0	0	0	0	0	1	-
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	0	2	0	0	0	0	1	0	0	0	3	-
Streptococcus pneumoniae – intermediate resistance	0	0	0	0	0	0	0	0	0	0	1	0	1	-
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	0	0	0	-
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	1	0	0	0	0	0	0	0	0	0	1	↓
Tuberculosis – multi-drug resistant (MDR-TB)	0	0	0	0	0	0	0	0	0	0	0	0	0	-

↑/↓ *Arrows indicate an increase or decrease compared to 2013 Communicable Disease Totals

2014														
REPORTABLE DISEASE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YTD	↑/↓
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	0	0	1	0	0	0	0	0	1	↓
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	-

↑/↓ *Arrows indicate an increase or decrease compared to 2013 Communicable Disease Totals