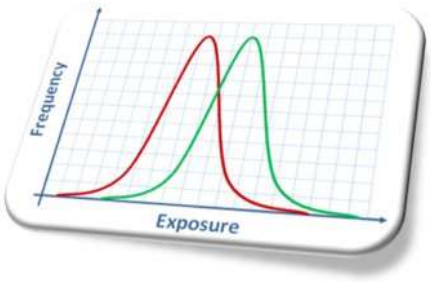
Communicable Disease Report 2014

Tuscarawas County, Ohio



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February 5, 2015

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Summary

This report provides a summary of probable and confirmed cases of communicable diseases reported to the Tuscarawas County and New Philadelphia City Health Departments in 2014. It provides the count and rates of reportable communicable diseases reported in the entire County as well as the yearly count of the disease reported to the two jurisdictions separately. The following are the highlights of the epidemiology of communicable diseases in Tuscarawas County from the report:

- There were a total of 513 cases (an overall incidence rate of 554 per 100,000 population) of communicable diseases reported to the Tuscarawas County and New Philadelphia City Health Departments in 2014. Of the total, 396 cases (77.2%) reported were to the County Health Department while 117 (22.8%) were reported to the City Health Department.

- There was an overall 5.8% increase in communicable diseases reported in the entire county in 2014 compared to 2013. While the number of cases reported to the New Philadelphia City Health Department declined slightly (117 cases in 2014 compared to 122 cases in 2013), the numbers reported to the Tuscarawas County Health Department experienced an increase of 9.0% increase in 2014 compared to 2013.

- The increase in the number of communicable diseases reported to the County Health Department is attributed to an increase in the incidence of influenza-related hospitalization (87 in 2014 *vs.* 42 in 2013).

- Chlamydia infections, a sexually transmitted infection, remains the most reported communicable disease in the county accounting for almost half of all the communicable disease cases reported in 2014 (253 cases and an overall rate of 273 per 100,000 population).

- Gonococcal infection, another sexually transmitted infection, is the third most common reportable communicable disease in the county (an overall rate of 44.2 per 100,000 population).

- Both Chlamydia and Gonorrhea infections in the county in the past three years have year have remained at a high level and this should be of concern for the health department to warrant public health prevention programming to deal with the issue.

Table 1. Communicable Disease Count Reported to the Tuscarawas County Health Department, Ohio, 2014

Reportable Communicable Disease	Number of cases	% of all cases
Campylobacteriosis	15	3.8
Chlamydia infection	190	48.0
Cryptosporidiosis	2	0.5
Giardiasis	3	0.8
Gonococcal infection	26	6.6
Haemophilus influenza (invasive disease)	1	0.3
Hepatitis B (including delta) - chronic	1	0.3
Hepatitis C - acute	1	0.3
Hepatitis C - chronic	29	7.3
Influenza-associated hospitalization	71	17.9
La Crosse virus disease (other California serogroup virus disease)	1	0.3
Lyme Disease	1	0.3
Meningitis - aseptic/viral	3	0.8
Mumps	1	0.3
Mycobacterial disease – other than tuberculosis	9	2.3
Pertussis	11	2.8
Salmonellosis	11	2.8
Shigellosis	1	0.3
Streptococcus pneumoniae - invasive antibiotic resistance unknown or non-resistant	2	0.5
Streptococcus pneumoniae - invasive antibiotic resistant/intermediate	2	0.5
Tuberculosis	4	1.0
Varicella (Chickenpox)	9	2.3
Yersinosis	1	0.3
Total	**396**	**100.0**

Table 2. Communicable Disease Count Reported to the New Philadelphia City Health Department, Ohio, 2014

Reportable Communicable Disease	No. of cases	% of all cases
Campylobacteriosis	2	1.7
Chlamydia infection	63	53.9
Cryptosporidiosis	1	0.9
Gonococcal infection	15	12.8
Hepatitis C - chronic	11	9.4
Influenza-associated hospitalization	16	13.7
Legionellosis - Legionnaires' Disease	2	1.7
Meningitis - aseptic/viral	1	0.9
Meningitis - bacterial (Not *N. meningitidis*)		
Mycobacterial disease - other than tuberculosis	3	2.6
Streptococcal - Group A -invasive	1	0.9
Streptococcus pneumoniae - invasive antibiotic resistance unknown or non-resistant	2	1.7
Total	**117**	**100.0**

Table 3. Reportable Communicable Disease Count† and Percentage, Tuscarawas County, Ohio, 2014

Reportable Communicable Disease	Number of cases	% of all cases
Campylobacteriosis	17	3.3
Chlamydia infection	253	49.3
Cryptosporidiosis	3	0.6
Giardiasis	3	0.6
Gonococcal infection	41	8.0
Haemophilus influenza (invasive disease)	1	0.2
Hepatitis B (including delta) - chronic	1	0.2
Hepatitis C - acute	1	0.2
Hepatitis C - chronic	40	7.8
Influenza-associated hospitalization	87	17.0
La Crosse virus disease (other California serogroup virus disease)	1	0.2
Legionellosis - Legionnaires' Disease	2	0.4
Lyme Disease	1	0.2
Meningitis - aseptic/viral	4	0.8
Mumps	1	0.2
Mycobacterial disease – other than tuberculosis	12	2.3
Other Arthropod-borne Disease	1	0.2
Pertussis	11	2.1
Salmonellosis	11	2.1
Shigellosis	1	0.2
Streptococcal - Group A -invasive	1	0.2
Streptococcus pneumoniae - invasive antibiotic resistance unknown or non-resistant	4	0.8
Streptococcus pneumoniae - invasive antibiotic resistant/intermediate	2	0.4
Tuberculosis	4	0.8
Varicella (Chickenpox)	9	1.8
Yersinosis	1	0.2
Total	**513**	**100.0**

†Includes confirmed or probable cases of diseases reported to both the Tuscarawas County Health Department and the New Philadelphia City Health Department

Table 4. Reportable Communicable Disease Rates†, Tuscarawas County, Ohio, 2012 - 2014

Reportable Communicable Disease	2012		2013		2014	
	No. of Cases	Rate per 100,000	No. of Cases	Rate per 100,000	No. of Cases	Rate per 100,000
Campylobacteriosis	22	23.8	13	14.0	17	18.3
Chlamydia infection	255	275.4	251	271.1	253	273.0
Coccidioidomycosis	0	0.0	1	1.1	0	0
Cryptosporidiosis	2	2.2	4	4.3	3	3.2
Cytomegalovirus -congenital (CMV)	1	1.1	0	0	0	0
Giardiasis	4	4.3	3	3.2	3	3.2
Gonococcal infection	31	33.5	48	51.8	41	44.2
Haemophilus influenzae (invasive disease)	2	2.2	2	2.2	1	1.1
Hepatitis B (including delta) - acute	0	0.0	4	4.3	0	0
Hepatitis B (including delta) - chronic	9	9.7	8	8.6	1	1.1
Hepatitis C - acute	0	0	0	0	1	1.1
Hepatitis C - chronic	39	42.1	33	35.6	40	43.2
Influenza-associated hospitalization	30	32.4	42	45.4	87	93.9
LaCrosse virus disease (other California serogroup virus disease)	0	0.0	2	2.2	1	1.1
Legionellosis - Legionnaires' Disease	1	1.1	3	3.2	2	2.2
Listeriosis	0	0.0	1	1.1	0	0
Lyme Disease	3	3.2	3	6.5	1	1.1
Meningitis - aseptic/viral	1	1.1	4	4.3	4	4.3
Meningitis - bacterial (Not N. meningitidis)	0	0.0	1	1.1	0	0
Mumps	0	0	0	0	1	1.1
Meningococcal disease - *Neisseria meningitidis*	0	0.0	1	1.1	0	0
Mycobacterial disease - other than tuberculosis	11	11.9	12	13.0	12	12.9
Other Arthropod-borne Disease	0	0	0	0	1	1.1
Pertussis	14	15.1	1	1.1	11	11.9
Q Fever, Chronic	1	1.1	0	0	0	0
Salmonellosis	15	16.2	16	17.3	11	11.9
Shigellosis	0	0.0	2	2.2	1	1.1
Streptococcal - Group A -invasive	1	1.1	1	1.1	1	1.1
Streptococcal - Group B - in newborn	1	1.1	1	1.1	0	0
Streptococcus pneumoniae - invasive antibiotic resistance unknown or non-resistant	8	8.6	9	9.7	4	4.3
Streptococcus pneumoniae - invasive antibiotic resistant/intermediate	6	6.5	2	2.2	2	2.2
Tuberculosis	2	2.2	1	1.1	4	4.3
Varicella (Chickenpox)	5	5.4	12	13.0	9	9.7
Vibrio parahaemolyticus infection	0	0.0	1	1.1	0	0
Yersinosis	2	2.2	3	3.2	1	1.1
Total	**466**	**503.3**	**485**	**523.9**	**513**	**553.6**

†Includes confirmed or probable cases of diseases reported to both the Tuscarawas County Health Department and the New Philadelphia City Health Department; 2012 and 2013 rates based on 2010 population estimates (92,582) and 2013 rates based on 2013 population estimates (92,672) for Tuscarawas County (U.S. Census Bureau).

Basic Information on Reportable Communicable Diseases Observed in Tuscarawas County

Botulism

Infectious Agent: *Clostridium botulinum*
Reservoir: soil, agricultural product, marine sediments and intestinal tract of animals including fish
Transmission: Foodborne, waterborne, inhalation and contamination from wound
Incubation Period: 12-36 hours or sometimes several days after eating contaminated food
Prevention Measures: Good preparation of food and hygiene, pasteurization, refrigeration of food combined with control of salt.

Campylobacteriosis

Infectious Agent: *Campylobacter jejuni*, *Campylobacter Coli*.
Reservoir: Poultry, cattle, farm animals. Most raw poultry meat is contaminated.

Mode of Transmission: Ingestion of undercooked poultry, contaminated water or milk from an infected cow, improper hand sanitization after handling farm animals.
Incubation Period: 2-5 day, range 1-10 days.
Prevention Measures: Pasteurize all milk, boil/chlorinate all water. Thoroughly cook meat and sanitize utensils/cutting boards. Implement stringent hand washing practices.

Chlamydia Infection

Infectious Agent: *Chlamydia trachomatis* (subtypes D-K).
Reservoir: Humans.
Mode of Transmission: Sexual Intercourse.
Incubation Period: 7-14 days or longer.
Prevention Measures: Sex education, condom use, screening of at risk populations (>25 years old).

Creutzfeldt - Jakob disease

Infectious Agent: Prion Protein.
Reservoir: Humans – likely from "Mad Cow"/Bovine Spongiform Encephalitis Cattle.
Mode of Transmission: Unknown – Evidence for: Contaminated Pituitary Hormone Infusion, Dura Mater/Corneal Grafts.
Incubation Period: 15 months to >30 years.
Prevention Measures: Strict screening and avoidance of contaminated tissue transplant from infected donors.

Cryptosporidiosis

Infectious Agent: *Cryptosporidium parvum* – a coccidian protozoan parasite.
Reservoir: Humans, cattle, domesticated animals.
Mode of Transmission: Fecal-oral – including person-to-person, animal-to-person, waterborne and foodborne.
Incubation Period: 7 days, range 1-12 days.
Prevention Measures: Personal hygiene education, sanitary handling of feces, stringent hand washing practices and boiling and filtering water.

Cytomegalovirus – Congential (CMV)

Infectious Agent: Human β-herpesvirus 5 – include 4 unique subtypes - mixing is common.
Reservoir: Humans.

Mode of Transmission: Intimate exposure through mucosal contact with infected tissues, secretions and excretions: *in utero*, at time of delivery, via semen, breast milk and blood transfusions. Also, saliva (day-cares are a common community reservoir) .

Incubation Period: 3-8 weeks following transplant of infected tissue or contact with infected fluids. 3-12 weeks following and infection acquired at birth.

Prevention Measures: Strict screening of transfusion products, sanitary handling of diapers, and implementation of "universal precautions" by adults involved with childcare (nurses, day care employees, teachers)

E. Coli – enterohemorrhagic – Not O157:H7

Infectious Agent: The enterotoxins of most subtypes of *Escherichia Coli* except O157:H7.

Reservoir: Humans.

Mode of Transmission: Contaminated food and, less likely, water.

Incubation Period: As short as 10-12 hours, usually 24-72 hours.

Prevention Measures: Prophylactic antibiotics if traveling to an area where bacteria are endemic. Else, implement universal precautions to minimize fecal-oral food contamination.

Giardiasis

Infectious Agent: *Giardia lamblia, Giardia intestinalis, Giardia duodenalis*, a flagellate protozoan parasite.

Reservoir: Humans, possibly Beaver and other domesticated animals.

Mode of Transmission: Fecal-oral , hand-to-mouth transfer. Most common at day care centers. Also, anal intercourse, contamination of foodstuffs and unfiltered stream and lake waters (given human or animal fecal contamination).

Incubation Period: 3 to >25 days, median 7-10 days.

Prevention Measures: Protect public water supplies against contamination, implement emergency boiling procedures, and promote stringent hand washing procedures.

Gonococcal Infection

Infectious Agent: *Neisseria gonorrhoeae*

Reservoir: Humans.

Mode of Transmission: Sexual Contact (an indicator of sexual abuse in children).

Incubation Period: 2-7 days.

Prevention Measures: Safe sex practices, monogamy or abstinence.

Haemophilius Influenzae (invasive disease)

Infectious Agent: *Haemophilus influenza*

Reservoir: Humans (asymptomatic carriers).

Mode of Transmission: Person-to-person, direct contact or inhalation of droplets of respiratory tract secretions containing the bacteria.

Incubation Period: Unknown.

Prevention Measures: Vaccine against serotype B available, else, universal precautions and hand washing when in contact with infected respiratory excretions.

Hepatitis A

Infectious Agent: Hepatitis A Virus (HAV), a member of the family Picornaviridae.

Reservoir: Humans, rarely primates.

Mode of Transmission: Fecal-oral, person-to-person. Infected foodstuffs and water.

Incubation Period: 28-30 days, range 15-50 days.

Prevention Measures: Vaccination (with Immunoglobulin/Antibody supplement if needed), education on sanitary practices, thoroughly cook all shellfish and boil all water where disease is endemic.

Hepatitis B (including Delta) – Chronic

Infectious Agent: Hepatitis B Virus (HBV) and Hepatitis Delta Virus (HDV) – Requires existing HBV infection to be virulent.

Reservoir: Humans

Mode of Transmission: Sexual activities, IV drug use, close contact with: blood, saliva, semen, vaginal secretions, cerebrospinal fluid, and amniotic, synovial, peritoneal and pericardial fluids.

Prevention Measures: Immunization of all children, screening of donated blood products. Safe sex practices and eliminate recreational drug use.

Hepatitis C – Acute (chronic cases are prevalent)

Infectious Agent: Hepatitis C Virus (HCV).

Reservoir: Humans.

Mode of Transmission: Usually by skin puncture (needlestick, cut, abrasion, etc). No evidence for oral route.

Incubation Period: 6-9 weeks. Chronic infections may persist up to 20 years before onset of cirrhosis or hepatoma.

Prevention Measures: See HBV prevention.

Influenza

Infectious Agent: Multiple (ex: H1N1, H3N2)

Reservoir: Humans, Birds, Swine.

Mode of Transmission: Airborne spread of droplets or direct contact with mucous membranes of infected individual.

Incubation Period: 1-3 days.

Prevention Measures: Education on sanitization, annual vaccination, universal precautions.

Legionnaires' Disease

Infectious Agent: *Legionella pneumophila*, less commonly *Legionella micdadei, Legionella bozemanii, Legionella longbeachae* and *Legionella dumoffi*.

Reservoir: Showers, HVAC systems, evaporative condensers, humidifiers, whirlpool spas, respiratory therapy devices and decorative fountains.

Mode of Transmission: Inhalation, aspiration of contaminated water.

Incubation Period: 5-6 days.

Prevention Measures: Sanitize water-using systems regularly to prevent the growth of associated slime molds. All hot water systems should be maintained at temperatures >122ºF.

Listeriosis

Infectious Agent: *Listeria monocytogenes*

Reservoir: Soil, forage, water, mud and silage. Also, infected animals, humans and poorly refrigerated foods.

Mode of Transmission: Contaminated, poorly-refrigerated foods, mostly dairy. Also, *in utero* transmission.

Incubation Period: 3 weeks.

Prevention Measures: The pregnant and immunocompromised should avoid ready-to-eat foods, smoked fish and unpasteurized diary. Thoroughly wash/clean all foods prior to eating. Do not use untreated manure on vegetable crops. If you must, take great care when handling dead animals.

Lyme Disease

Infectious Agent: *Borrelia burgdorferi, Borrelia garinii, Barrelia afzelii*
Reservoir: Deer Ticks
Mode of Transmission: Tick bite (Experimental evidence shows ticks attached for less than 24 hours may not pass on the disease.)
Incubation Period: 7-10 days.
Prevention Measures: Education on tick habitat, prevention and removal. Avoidance of tick infested areas, application of tick repellant and use of long shirts and pants.

Viral/Aseptic Meningitis

Infectious Agent: Enterovirus, Coxsackievirus (>50% of cases are of unknown etiology)
Reservoir: Vary with viral type; likely Human.
Mode of Transmission: Vary with viral type.
Incubation Period: Vary with viral type.
Prevention Measures: Vary with viral type. Universal precautions.

Mumps

Infectious Agent: Mumps Virus, family Paramyxoviridae genus *Rubulavirus*.
Reservoir: Humans.
Mode of Transmission: Airborne, droplet or direct contact with saliva of infected.
Incubation Period: 16-18 days.
Prevention Measures: Mumps vaccination as part of standard MMR.

Mycobacterial Disease – other than Tuberculosis

Disease/Infectious Agent:
- Cervical Lymphadenitis – *Mycobacterium avium, M. scrofulaceum, M. kansasii.*
- Skin Ulcers – *M. ulcerans, M. marinum.*
- Nosocomial (hospital acquired) disease – *M. fortutium, M. chelonae, M. absessus*
- Crohn disease – *M. paratuberculosis*
Reservoir: Contaminated soil, milk, water; Infected Humans.
Mode of Transmission: Contact with ulcerated skin lesions or sputum. (Not common)
Incubation Period: Varies by agent.
Prevention Measures: Avoid the ill if immunocompromised**.** Take prophylactic antibiotics before undergoing surgery.

Pertussis

Infectious Agent: *Bordetella Pertussis*.
Reservoir: Humans.
Mode of Transmission: Airborne, droplets.
Incubation Period: 9-10 days.
Prevention Measures: Pertussis vaccination as part of standard DPT.

Q Fever

Infectious Agent: *Coxiella burnetii*, a rickettsial bacteria.
Reservoir: Sheep, cattle, goats, cats, dogs, birds, ticks. (Usually asymptomatic and shed massive amounts of bacteria during the birthing process).
Mode of Transmission: Inhalation of dust/particles from dried excreta or afterbirth of infected animals. May also be found in the wool and milk of infected sheep and cows.

Incubation Period: 2-3 weeks, depending on initial exposure dose.
Prevention Measures: Educate those in high-risk occupations (farmers, butchers…etc), pasteurize all milk.

Salmonellosis

Infectious Agent: *Salmonella typhi, S. enterica.*
Reservoir: Wild and domestic animals.
Mode of Transmission: Ingestion of contaminated animal products (meat, dairy) or of foodstuffs cross-contaminated (ex: lettuce, tomatoes prepared alongside contaminated meat or dairy).
Incubation Period: 12-36 Hours.
Prevention Measures: Educate food handlers/preparers on sanitary practices, thoroughly cook all foods to specified temperatures, and mandate irradiation of at risk foods (eggs, milk).

Shigellosis

Infectious Agent: *Shigella dysenteriae, S. flexneri, S. boydii, S. Sonnei.*
Reservoir: Humans, primates.
Mode of Transmission: Direct or indirect fecal-oral contact by infected individual. Most commonly, poor hand washing followed by food preparation. Also flies may land on an infected latrine and subsequently on an exposed food.
Incubation Period: 1-3 days.
Prevention Measures: Educate on proper hand-washing techniques, implement fly-proof latrines, pasteurize, refrigerate and thoroughly cook all foods. Enforce quality control measures in food preparation (restaurants and industry).

Streptococcal – Group A (β-Hemolytic)

Infectious Agent: *Streptococci pyogenes* (including >130 distinct serotypes).
Reservoir: Humans.
Mode of Transmission: Airborne or direct contact with respiratory discharges. (Ex: sneeze, tissues). Also contaminated milk and egg salad.
Incubation Period: 1-3 days.
Prevention Measures: Educate public about routes of transmission, proper sanitation…etc, thoroughly cook and refrigerate food products.

Streptococcus pneumoniae

Infectious Agent: *Streptococcus pneumonia (pneumococcus)*
Reservoir: Humans.
Mode of Transmission: Droplet spread, oral contact, direct contact with respiratory discharges.
Incubation Period: 1-3 days, not well determined.
Prevention Measures: Avoid crowding, vaccinate, encourage prophylactic ingestion of xylitol, a sugar that inhibits pneumococcal growth.
Note: Some strains, such as MRSA are resistant to antibacterial medication. As such, strict sanitation practices (wiping down most surfaces with antiseptic chemicals) should be implemented as such infections frequently involve hospitalization.

Tuberculosis

Infectious Agent: *Mycobacterium tuberculosis*.
Reservoir: Humans. Less frequently, cattle, swine and other mammals.
Mode of Transmission: Airborne, droplet. (Coughing, sneezing, singing).
Incubation Period: 2-10 weeks.

Prevention Measures: Identify cases, have adequate x-ray facilities for rapid preliminary diagnosis, educate public on awareness and prevention measures.

Varicella (Chickenpox)

Infectious Agent: Human α-Herpesvirus 3 (Varicella-Zoster Virus, VZV).
Reservoir: Humans.
Mode of Transmission: Direct contact, airborne, droplets from spread of vesicle fluid or secretions of the respiratory tract. Indirect contact, surfaces or fabrics contaminated with discharges from vesicles or membranes of the infected.
Incubation Period: 2-3 weeks.
Prevention Measures: Vaccination of children, isolate infected children.

Yersinosis

Infectious Agent: *Yersinia pseudotuberculosis, Y. enterocolitica*.
Reservoir: Swine, rodents.
Mode of Transmission: Fecal-oral transmission through contaminated food or water. Consumption of raw pork.
Incubation Period: 3-7 days.
Prevention Measures: Prepare foods in a sanitary manner, protect and sanitize the water supply, control the rodent population, wash hands thoroughly after caring for or slaughtering animals.

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