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General Information

Communicable Disease
and Epidemiology
(630) 221-7553

Environmental Health
(630) 682-7400

Immunizations
(630) 682-7400

Sexually
Transmitted Diseases
(630) 221-7553

HIV/AIDS
(630) 221-7553

Tuberculosis
(630) 221-7522

School Health
(630) 221-7300

Travel Clinic
(630) 682-7400

Animal Care & Control
(630) 407-2800

Please contact
Communicable Disease
and Epidemiology at
(630) 221-7553 or
palak.panchal@
dupagehealth.org
to send suggestions
or to be added to the
distribution list.

The purpose of this two-page surveillance update is to promote the control and prevention of **communicable disease (CD)** by providing clinically relevant information and resources to healthcare professionals in DuPage County.



Under the Microscope Enteric *E. coli*

For questions or to report suspect or known cases of enteric *E. coli* infection, please call the DuPage County Health Department at (630) 221-7553.

Escherichia coli, or *E. coli*, are a large and diverse group of bacteria. Although most strains of *E. coli* are harmless, others can cause illness. Some kinds of *E. coli* can cause diarrhea, while others cause urinary tract infections, pneumonia, and other illnesses.¹ Enteric *E. coli* infections include ***E. coli* O157:H7** and other Shiga toxin-producing *E. coli* (**STEC**), enterotoxigenic *E. coli* (**ETEC**), enteropathogenic *E. coli* (**EPEC**), and enteroinvasive *E. coli* (**EIEC**), and must be **reported to the local health department** by telephone or facsimile as soon as possible, **within 24 hours**.²

Foodborne disease reporting is not only important for disease prevention and control, but for more accurate assessments of the burden of foodborne illness and identification of foodborne disease outbreaks in the community. This may lead to early identification and removal of contaminated products from the commercial market and education about proper food handling and preparation practices in restaurants and homes.³

The symptoms of STEC infections vary for each person but often include severe stomach cramps, diarrhea (often bloody), and vomiting. If there is fever, it usually is not very high (less than 101°F). Most people improve clinically within 5-7 days. Some infections are very mild, but others are severe or even life-threatening.¹

STEC infections are usually diagnosed through **lab testing of stool specimens**. Identifying the specific strain of STEC involved is very important for public health purposes, such as investigating outbreaks. Most labs can determine if an STEC is present and can identify *E. coli* O157. To determine the O group of non-O157 STEC, strains must be sent to a state public health laboratory.¹ CDC assists state and local public health authorities with epidemiologic investigations and the design of interventions to prevent and control food-related outbreaks. CDC also coordinates a national network of public health laboratories, called PulseNet, which performs "**molecular fingerprinting**" of bacteria (by pulsed-field gel electrophoresis or PFGE) to support epidemiologic investigations.³

E. coli O157:H7 is an emerging cause of foodborne illness. In some persons, particularly children younger than 5 years of age and the elderly, the infection can lead to destruction of red blood cells (hemolytic anemia) and acute kidney failure (also known as uremia). This complication, **hemolytic uremic syndrome (HUS)**, can lead to stroke, seizures, hospitalization, and death. About 2 percent to 7 percent of infections lead to HUS. In the U.S., *E. coli* O157:H7 infection is the primary cause of HUS, which is the principal cause of acute kidney failure in children.⁴

Antibiotics are not recommended for patients with suspected STEC infections until complete diagnostic testing can be performed and STEC infection is ruled out. Some studies have shown that administering antibiotics to patients with STEC infections might increase their risk of developing HUS, and a benefit of treatment has not been clearly demonstrated.⁵

ETEC infections are the most common cause of travelers' diarrhea and have caused several foodborne outbreaks in the U.S. There are an estimated 79,420 cases of ETEC in the United States each year. EPEC and EIEC primarily infect children in the developing world.⁶

Enteric *E. coli* infections may be prevented by the following actions:

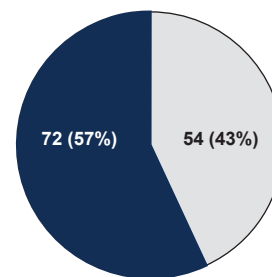
1. WASH YOUR HANDS thoroughly after using the bathroom or changing diapers and before preparing or eating food. WASH YOUR HANDS after contact with animals or their environments (at farms, petting zoos, fairs, even your own backyard).
2. COOK meats thoroughly. Ground beef and meat that has been needle-tenderized should be cooked to a temperature of at least 160°F/70°C. It's best to use a thermometer, as color is not a very reliable indicator of "doneness."
3. AVOID raw milk, unpasteurized dairy products, and unpasteurized juices (like fresh apple cider).
4. AVOID swallowing water when swimming or playing in lakes, ponds, streams, swimming pools, and backyard "kiddie" pools.
5. PREVENT cross contamination in food preparation areas by thoroughly washing hands, counters, cutting boards, and utensils after they touch raw meat.¹

References:

1. www.cdc.gov/ecoli/
2. www.ilga.gov/commission/jcar/admincode/077/077006900D04000R.html
3. www.cdc.gov/mmwr/PDF/rr/rr5304.pdf
4. www.idph.state.il.us/public/hb/hbecoli.htm
5. www.cdc.gov/ecoli/clinicians.html
6. www.cdc.gov/ncidod/dbmd/diseaseinfo/diarrecoli_t.htm

Reported Cases of Enteric *E. coli* in DuPage County, 2009-2013* (n=126)

■ STEC O157:H7 □ STEC Unspecified



Source: Illinois National Electronic Disease Surveillance System
*2013 data are provisional

DUPAGE COUNTY HEALTH DEPARTMENT

CASES¹ OF REPORTABLE DISEASES*

* Last updated by the Illinois Department of Public Health in March 2008

	Report Within	2014		2013		2012		2011		2010		Median	
		Apr	Jan - Apr	Jan - Apr	Total	Jan - Apr	Total	Jan - Apr	Total	Jan - Apr	Total	Jan - Apr	Total ('10-'13)
Vaccine Preventable Diseases													
Chickenpox (varicella)	24 hrs	9	27	22	79	43	93	31	82	51	95	31	87.5
Diphtheria	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
<i>Haemophilus influenzae</i> , invasive	24 hrs	0	1	1	10	5	11	4	15	3	7	3	10.5
Hepatitis A	24 hrs	1	3	1	4	0	8	2	8	2	3	2	6
Hepatitis B	7 days	0	1	1	3	1	5	0	0	0	4	1	3.5
Hepatitis B (carriers)	7 days	7	25	39	103	38	97	34	113	37	108	37	105.5
Influenza, deaths in < 18 yrs old	7 days	0	0	1	1	0	0	0	0	0	0	0	0
Influenza ICU admissions	24 hrs	4	36	52	76	5	59	23	24	0	3	23	41.5
Measles (rubeola)	24 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Mumps	24 hrs	1	1	0	0	1	1	1	3	0	2	1	1.5
<i>Neisseria meningitidis</i> , invasive	24 hrs	0	0	0	0	0	0	1	2	0	1	0	0.5
Pertussis (whooping cough)	24 hrs	0	7	13	41	87	195	48	268	10	92	13	143.5
Poliomyelitis	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Rubella	24 hrs	0	0	0	0	0	0	0	0	0	0	0	0
<i>Streptococcus pneumoniae</i> , invasive disease, in those < 5 yrs old	7 days	0	1	1	4	2	5	7	13	4	8	2	6.5
Tetanus	7 days	0	0	0	0	0	0	0	0	0	0	0	0
Other Communicable Diseases													
Anaplasmosis ²	7 days	0	0	0	0	0	2	0	3	0	0	0	1
Anthrax	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Botulism, foodborne	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Botulism, other	24 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Brucellosis	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
California encephalitis ³	7 days	0	0	0	0	0	0	0	0	0	0	0	0
Chikungunya fever ³	7 days	0	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Cholera	24 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Creutzfeldt-Jakob disease	7 days	0	0	0	0	0	1	1	3	1	1	0	1
Cryptosporidiosis	7 days	0	0	0	7	1	2	0	5	0	5	0	5
Cyclosporiasis	7 days	0	0	2	4	0	0	0	0	0	0	0	0
Dengue fever ³	7 days	0	1	0	2	0	1	1	1	2	4	1	1.5
Ehrlichiosis ²	7 days	0	0	0	0	0	0	0	0	0	0	0	0
Enteric <i>E. coli</i> infections ⁴	24 hrs	1	1	4	54	5	19	6	22	5	19	5	20.5
Glomerulonephritis ⁵	24 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Hantavirus pulmonary syndrome	24 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Hemolytic uremic syndrome	24 hrs	0	0	0	0	0	1	0	1	0	0	0	0.5
Hepatitis C (cases & carriers)	7 days	27	82	59	175	67	171	62	189	66	187	66	181
Hepatitis D	7 days	0	0	0	0	0	0	0	1	0	0	0	0
Histoplasmosis	7 days	0	1	0	1	0	2	0	1	2	2	0	1.5
Influenza A, novel virus	3 hrs	0	0	0	0	0	0	0	0	11	11	0	0
Legionellosis	7 days	0	5	4	39	5	25	1	14	2	11	4	19.5
Leprosy	7 days	0	0	0	0	0	0	0	0	0	0	0	0
Leptospirosis	7 days	0	0	0	0	0	0	0	0	0	0	0	0
Listeriosis	7 days	0	0	0	2	0	2	1	2	1	6	0	2
Lyme disease ²	7 days	0	0	0	39	1	27	0	32	1	19	0	29.5
Malaria	7 days	0	0	2	7	1	2	1	7	1	4	1	5.5
Ophthalmia neonatorum	7 days	0	0	0	0	0	0	0	0	0	0	0	0
Plague	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Psittacosis	7 days	0	0	0	0	0	0	0	0	0	0	0	0
Q fever	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Rabies, animal case	24 hrs	0	0	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Rabies, human case	24 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Rabies, potential exposure	24 hrs	2	9	5	44	2	43	3	30	7	54	5	43.5
Reye syndrome	7 days	0	0	0	0	0	0	0	0	0	0	0	0
Rheumatic fever ⁵	24 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Rocky Mountain spotted fever ²	7 days	0	0	0	0	0	1	0	0	0	0	0	0
Salmonellosis	7 days	2	14	22	128	25	123	28	95	28	136	25	125.5
Severe Acute Respiratory Syndrome	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Shigellosis	7 days	1	2	3	18	7	20	7	22	258	277	7	21
Smallpox	3 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Smallpox vaccination, complications	24 hrs	0	0	0	0	0	0	0	0	0	0	0	0
St. Louis encephalitis ³	7 days	0	0	0	0	0	0	0	0	0	0	0	0
<i>Staphylococcus aureus</i> , methicillin resistant (MRSA), in those < 61 days old	24 hrs	0	3	0	3	1	7	1	3	1	6	1	4.5
<i>Staphylococcus aureus</i> , methicillin resistant (MRSA), community cluster ⁶	24 hrs	0	0	0	0	1	1	0	0	1	1	0	0.5
<i>Staphylococcus aureus</i> (vancomycin-resistant)	24 hrs	0	0	0	0	0	0	0	1	1	1	0	0.5
Streptococcal infections, group A invasive disease ⁷	24 hrs	3	16	11	21	10	20	18	30	8	20	11	20.5
Toxic shock syndrome ⁸	7 days	0	0	0	1	0	0	1	1	0	0	0	0.5
Trichinosis	7 days	0	0	0	0	0	0	0	0	0	0	0	0
Tuberculosis	7 days	1	4	10	35	5	26	8	18	10	26	8	26
Tularemia	3 hrs	0	0	0	0	0	1	0	0	0	0	0	0
Typhoid fever	24 hrs	0	1	0	2	1	2	3	3	2	3	1	2.5
Typhus	24 hrs	0	0	0	0	0	0	0	0	0	0	0	0
Vibriosis (non-cholera)	7 days	0	0	0	2	1	4	0	3	0	1	0	2.5
West Nile disease ³	7 days	0	0	0	6	0	56	0	2	0	17	0	11.5
Yersiniosis	7 days	0	1	1	2	3	3	1	3	0	0	1	2.5
STDs, HIV and AIDS													
AIDS ⁹ (April - June)	7 days	--	**	7	25	**	17	**	16	10	26	4.5	21
Chancroid	7 days	0	0	0	0	0	0	0	0	0	0	0	0
Chlamydia	7 days	129	588	574	1670	583	1861	473	1599	396	1542	574	1634.5
Gonorrhea	7 days	15	55	82	221	80	239	64	241	51	223	64	231
HIV infection ⁹ (April - June)	7 days	--	**	8	28	6	20	**	24	13	27	8.5	25.5
Syphilis ¹⁰	7 days	4	11	12	27	7	19	13	24	3	25	11	24.5

DuPage County healthcare providers and hospitals **must report any suspected or confirmed case of these diseases** to the local health authorities within the number of hours or days indicated.

REPORTING NUMBERS:

Communicable Diseases

(630) 221-7553
24 hours: (630) 682-7400

Tuberculosis

(630) 221-7522

STDs

(630) 221-7553

HIV/AIDS:

(630) 221-7553

¹ Provisional cases, based on date of onset

² Listed in CD Rules and Regulations under "Tickborne Disease"

³ Listed in CD Rules and Regulations under "Arboviral Infections"

⁴ O157:H7, STEC, EIEC, ETEC, EPEC

⁵ Listed in CD Rules and Regulations under "Streptococcal infections, group A invasive disease sequelae"

⁶ Two or more laboratory-confirmed cases of community onset MRSA infection during a 14 day period

⁷ Includes streptococcal toxic shock syndrome and necrotizing fasciitis

⁸ Due to *Staphylococcus aureus*

⁹ HIV/AIDS data are provided quarterly by IDPH and are provisional, based on date of diagnosis

¹⁰ Cases are provisional based on test date per local health department investigation.

NR = Not reported

** = Count of 5 cases or less

Websites

CDC:
www.cdc.gov

IDPH:
www.idph.state.il.us

DuPage:
www.dupagehealth.org

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www.dupagehealth.org/publications