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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
with 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 *Bordetella pertussis*

For questions or to report a suspect or known case of pertussis, please call the DuPage County Health Department at (630) 221-7553.

Pertussis (whooping cough) is an acute infectious disease caused by the bacterium *Bordetella pertussis*. Before the availability of pertussis vaccine in the 1940s, more than 200,000 cases of pertussis were reported annually in the U.S. **Since widespread use of the vaccine began, incidence has decreased more than 75% compared with the pre-vaccine era.**¹

Since the 1980s, however, there has been an increase in the number of reported cases of pertussis. **Several factors have likely contributed to this increase, including increased awareness and improved recognition of pertussis among clinicians, greater access to and use of laboratory diagnostics, especially polymerase chain reaction (PCR) testing, increased surveillance and reporting of pertussis to public health departments, and waning immunity from vaccines.** Additionally, *B. pertussis* bacteria are also always changing at a genetic level. Research is underway to determine if any of the recent changes may be related to the increase in disease. However, Centers for Disease Control and Prevention (CDC) believes that much of the disease goes unrecognized and unreported.¹

Clinicians are reminded of the importance of early disease recognition, diagnosis, treatment, reporting, and preventive measures that should be followed to control and prevent further transmission. Pertussis remains endemic in the U.S., despite longstanding routine childhood pertussis vaccination. Immunity to pertussis wanes approximately 5–10 years after completion of childhood vaccination, leaving adolescents and adults susceptible to pertussis.^{2,3}

Even though the disease may be milder in older persons, those who are infected may transmit the disease to other susceptible persons, including unimmunized or incompletely immunized infants.⁴ **Compared with older children and adults, infants aged <12 months have substantially higher rates of pertussis and the largest burden of pertussis-related deaths.**⁵

Diagnosis of pertussis is based primarily on clinical presentation (cough lasting at least 2 weeks with inspiratory “whoop,” paroxysms, or post-tussive vomiting, without other apparent cause), and may be confirmed by a positive culture and/or PCR testing by nasopharyngeal swab.^{4,6} A negative culture or PCR test, however, does not rule out pertussis if the patient’s clinical presentation is otherwise consistent with pertussis per the clinician’s judgement; **the case should still be reported to the local health department,** and appropriate treatment and prophylaxis should still be administered. Testing in the absence of respiratory symptoms is not recommended.⁷

Since some pertussis vaccines have been found to contain PCR-detectable *B. pertussis* DNA, **preparation and administration of vaccines in areas separate from pertussis specimen collection areas may reduce the opportunity for cross contamination** of clinical specimens. These basic measures may further prevent contamination of surfaces and specimens with vaccine: 1) wearing gloves immediately before and during specimen collection or vaccine preparation and administration with immediate disposal of gloves after the procedure, and 2) cleaning clinic surfaces using a 10% bleach solution to reduce the amount of nucleic acids in the clinic environment.⁸

In addition to frequent handwashing, respiratory hygiene, and timely diagnosis followed by appropriate antimicrobial treatment, transmission of pertussis may be controlled by post-exposure prophylaxis of close contacts of persons with pertussis, regardless of age and vaccination status. Patients with pertussis **must be isolated from day care, school, work, and public gatherings until at least 5 days after the start of appropriate antibiotic therapy.**

Vaccination of susceptible persons is the most important preventive strategy against pertussis.⁷ Children should receive DTaP vaccine doses at 2, 4, 6 and 15 months of age and another dose at 4 to 6 years of age.⁴ **Booster Tdap vaccines** became available in 2005 that offer continued protection against pertussis, diphtheria and tetanus for **adolescents and adults, including persons 65 years and older.**^{4,9}

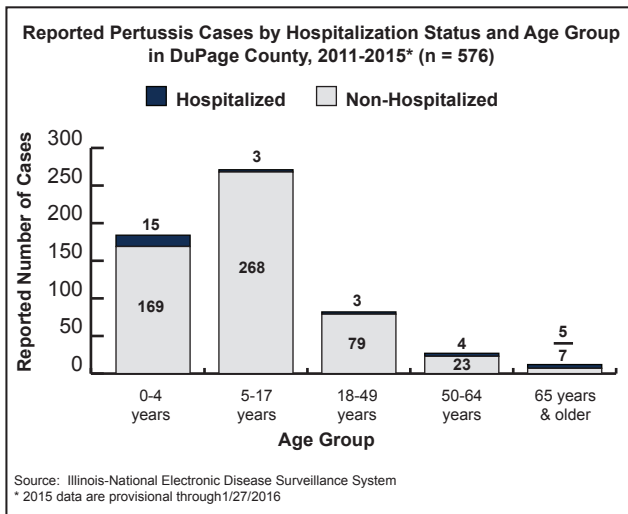
CDC also recommends:

1) **Maternal vaccination,** that healthcare personnel should **administer Tdap to susceptible women during each pregnancy. To maximize the maternal antibody response and passive antibody transfer to the infant, optimal timing for Tdap administration is between 27 and 36 weeks gestation although Tdap may be given at any time during pregnancy.** If not administered during pregnancy, Tdap should be administered immediately postpartum.⁵

2) **Cocooning,** that susceptible adolescents and adults (e.g., parents, siblings, grandparents, child care providers, and **healthcare personnel**) who have or anticipate having close contact with an infant aged <12 months should receive a single dose of Tdap to protect against pertussis if they have not received Tdap previously.^{5,10}

References:

1. www.cdc.gov/pertussis/clinical/index.html	6. www.cdc.gov/pertussis/surv-reporting.html
2. www.cdc.gov/mmwr/PDF/rr/rr5503.pdf	7. www.cdc.gov/mmwr/PDF/rr/rr5414.pdf
3. www.cdc.gov/mmwr/PDF/rr/rr5517.pdf	8. www.cdc.gov/pertussis/clinical/diagnostic-testing/diagnosis-pcr-bestpractices.html
4. www.cdc.gov/vaccines/pubs/pinkbook/pert.html	9. www.cdc.gov/mmwr/pdf/wk/mm6125.pdf
5. www.cdc.gov/mmwr/preview/mmwrhtml/mm6207a4.htm	10. www.cdc.gov/mmwr/pdf/rr/rr6007.pdf



DUPAGE COUNTY HEALTH DEPARTMENT
CASES¹ OF REPORTABLE DISEASES*

* Last updated by the Illinois Department of Public Health in February 2014

Vaccine Preventable Diseases	Report Within	2015		2014	2013	2012	2011	Median
		Dec	Total	Total	Total	Total	Total	Total ('11-'14)
Chickenpox (varicella)	24 hrs	5	36	76	78	93	82	80
Diphtheria	3 hrs	0	0	0	0	0	0	0
<i>Haemophilus influenzae</i> , invasive	24 hrs	1	15	5	10	11	15	10.5
Hepatitis A	24 hrs	0	5	8	4	8	8	8
Hepatitis B	7 days	0	1	5	3	5	1	4
Hepatitis B (carriers)	7 days	15	136	112	110	101	113	111
Influenza, deaths in < 18 yrs old	7 days	0	0	0	1	0	0	0
Influenza, ICU admissions	24 hrs	2	43	152	78	64	24	71
Measles (rubeola)	24 hrs	0	0	0	0	0	0	0
Mumps	24 hrs	2	9	2	0	1	3	1.5
<i>Neisseria meningitidis</i> , invasive	24 hrs	0	1	0	0	0	2	0
Pertussis (whooping cough)	24 hrs	14	48	22	43	195	268	119
Poliomyelitis	3 hrs	0	0	0	0	0	0	0
Rubella	24 hrs	0	0	0	0	0	0	0
<i>Streptococcus pneumoniae</i> , invasive disease, in those < 5 yrs old	7 days	0	0	3	4	5	13	4.5
Tetanus	7 days	0	0	0	0	0	0	0
Other Communicable Diseases								
Anaplasmosis ²	7 days	0	2	3	0	2	3	2.5
Anthrax	3 hrs	0	0	0	0	0	0	0
Botulism, foodborne	3 hrs	0	0	0	0	0	0	0
Botulism, other	24 hrs	0	0	0	0	0	0	0
Brucellosis	3 hrs	0	0	0	0	0	0	0
California encephalitis ³	7 days	0	0	0	0	0	0	0
Chikungunya fever ³	7 days	0	2	0	NR	NR	NR	0
Cholera	24 hrs	0	0	0	0	0	0	0
Creutzfeldt-Jakob disease	7 days	0	1	2	0	1	3	1.5
Cryptosporidiosis	7 days	1	5	2	7	2	5	3.5
Cyclosporiasis	7 days	0	1	1	4	0	0	0.5
Dengue fever ³	7 days	0	3	1	3	1	1	1
Ehrlichiosis ²	7 days	0	1	0	0	0	0	0
Enteric <i>E. coli</i> infections ⁴	24 hrs	0	13	18	54	19	22	20.5
Glomerulonephritis ⁵	24 hrs	0	0	0	0	0	0	0
Hantavirus pulmonary syndrome	24 hrs	0	0	0	0	0	0	0
Hemolytic uremic syndrome	24 hrs	0	0	2	0	1	1	1
Hepatitis C (cases & carriers)	7 days	12	231	242	182	171	189	185.5
Hepatitis D	7 days	0	0	0	0	0	1	0
Histoplasmosis	7 days	0	3	7	1	2	1	1.5
Influenza A, novel virus	3 hrs	0	0	0	0	0	0	0
Legionellosis	7 days	1	18	26	39	25	14	25.5
Leprosy	7 days	0	0	0	0	0	0	0
Leptospirosis	7 days	0	0	0	0	0	0	0
Listeriosis	7 days	0	2	2	2	2	2	2
Lyme disease ²	7 days	0	28	22	39	27	32	29.5
Malaria	7 days	0	4	2	7	2	7	4.5
Ophthalmia neonatorum	7 days	0	0	0	0	0	0	0
Plaque	3 hrs	0	0	0	0	0	0	0
Psittacosis	7 days	0	0	0	0	0	0	0
Q fever	3 hrs	0	0	0	0	0	0	0
Rabies, animal case	24 hrs	0	16	6	NR	NR	NR	6
Rabies, human case	24 hrs	0	0	0	0	0	0	0
Rabies, potential exposure	24 hrs	3	73	51	44	43	30	43.5
Reye syndrome	7 days	0	0	0	0	0	0	0
Rheumatic fever ⁵	24 hrs	0	0	0	0	0	0	0
Rocky Mountain spotted fever ²	7 days	0	0	0	0	1	0	0
Salmonellosis	7 days	4	129	115	128	123	95	119
Severe Acute Respiratory Syndrome	3 hrs	0	0	0	0	0	0	0
Shigellosis	7 days	4	26	18	18	20	22	19
Smallpox	3 hrs	0	0	0	0	0	0	0
Smallpox vaccination, complications	24 hrs	0	0	0	0	0	0	0
St. Louis encephalitis ³	7 days	0	0	0	0	0	0	0
<i>Staphylococcus aureus</i> , methicillin resistant (MRSA), in those < 61 days old	24 hrs	1	9	9	3	7	3	5
<i>Staphylococcus aureus</i> , methicillin resistant (MRSA), community cluster ⁶	24 hrs	0	0	0	0	1	0	0
<i>Staphylococcus aureus</i> (vancomycin-resistant)	24 hrs	0	0	0	0	0	1	0
Streptococcal infections, group A invasive disease ⁷	24 hrs	2	22	29	21	20	30	25
Toxic shock syndrome ⁸	7 days	0	0	0	1	0	1	0.5
Trichinosis	7 days	0	0	0	0	0	0	0
Tuberculosis	7 days	14	39	34	35	26	23	30
Tularemia	3 hrs	0	0	0	0	1	0	0
Typhoid fever	24 hrs	0	2	5	2	2	3	2.5
Typhus	24 hrs	0	0	0	0	0	0	0
Vibriosis (non-cholera)	7 days	0	4	3	2	4	3	3
West Nile disease ³	7 days	0	9	5	6	56	2	5.5
Yersiniosis	7 days	0	1	3	2	3	3	3
STDs, HIV and AIDS								
AIDS ⁹ (October - December)	7 days	**	11	15	25	17	16	16.5
Chancroid	7 days	0	0	0	0	0	0	0
Chlamydia	7 days	161	2142	2056	1883	1861	1599	1872
Gonorrhea	7 days	17	278	242	258	239	241	241.5
HIV infection ⁹ (October - December)	7 days	**	30	29	28	20	24	26
Syphilis ¹⁰	7 days	4	32	41	34	19	24	29

CD REVIEW

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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.dph.illinois.gov

DuPage:
www.dupagehealth.org

Archived issues of *CD Review* are available at:
www.dupagehealth.org/publications