

# Summary of Selected Reportable Diseases 2014



**Bureau of Assessment, Statistics & Epidemiology**

**Allegheny County Health Department**

542 4th Ave., Pittsburgh, PA 15219



## **Contributors**

### **Bureau of Assessment, Statistics, and Epidemiology**

LuAnn Brink  
Kristen Mertz  
Lauren Torso  
Stephen Forest  
Jennifer Fiddner  
John Kokenda  
Thom Stulginski

### **Bureau of Community Health Promotion and Disease Prevention**

Kwesi Willacy  
Sharon Silvestri  
Denise Heintz  
Janet Bender Stahlman  
Nancy Scopelitis  
Charles O'Brien  
Ruth Lilly  
Greg Robes  
Sally Chlebowski

### **Public Health Laboratory**

Robert Wadowsky

**Table of Contents**

**Introduction** .....4

**Methodology** .....4

**Vaccine preventable diseases** .....6

    Influenza .....6

    Measles, mumps, rubella .....8

    Pertussis .....9

    Acute hepatitis B infection .....10

    Chronic hepatitis B infection.....11

    Perinatal hepatitis B .....11

**Enteric diseases** .....11

    Shigellosis .....11

**Respiratory diseases** .....13

    Tuberculosis .....13

    Legionellosis .....14

**Vectorborne diseases** .....15

    Lyme disease.....15

    West Nile.....16

    Chikungunya .....17

**Other diseases** .....17

    Hepatitis C .....17

**Outbreaks** .....18

**Appendix A: Number of cases reported by disease, Allegheny County, 2005-2014** .....19

**Appendix B: List of reportable diseases, Allegheny County** .....20

### Introduction

This report provides a summary of selected infectious disease reported to the Allegheny County Health Department (ACHD) in 2014. The diseases highlighted here are the ones most commonly reported and those of greatest public health importance, with the exception of HIV and other sexually transmitted diseases, which are described in separate reports. The most recent report is the “2013 Annual STD Report,” which is available on the ACHD website.

Communicable diseases must be reported to the local health department as specified in Pennsylvania’s Disease Control and Prevention Act of 1955. The Allegheny County Board of Health periodically revises the list of notifiable diseases, which now includes > 60 infectious conditions. Public health officials use case reports to identify disease clusters, determine at risk populations, assess burden of disease, monitor trends, and recommend measures to stop disease transmission.

Cases are reported to ACHD by health care providers and laboratories. We gratefully acknowledge their contribution to identifying, treating and preventing infectious diseases in Allegheny County.

It is important to realize that reported cases do not reflect the true burden for many conditions, given that laboratory results are often needed for reporting and many people may not seek care or get tested. Health care providers may test for or report some conditions more often than others. Nonetheless, disease reports are helpful for monitoring trends over time and identifying groups at risk.

Detailed information on disease characteristics or prevention measures is not provided in this report. Instead, a hyperlink to a fact sheet on the website of either ACHD or the Centers for Disease Control and Prevention (CDC) is provided so that with one click the reader will be able to access pertinent clinical, risk factor, and prevention information.

### Methodology

Cases and outbreaks reported to ACHD are investigated by the Infectious Disease Program and by the Bureau of Assessment Statistics and Epidemiology. After clinical and laboratory findings are verified, cases are classified as “confirmed,” “probable,” “suspected,” or “not a case” using case definitions provided by the Centers for Disease Control and Prevention (CDC) and the Council of State and Territorial Epidemiologists. Surveillance case definitions do not always match the criteria for clinical diagnosis. For the diseases presented in the report, either “confirmed” cases only or “confirmed” and “probable” are included, as per CDC’s publication criteria. Case definitions can be found on the CDC’s National Notifiable Diseases Surveillance System website at <http://wwwn.cdc.gov/nndss/script/casedefDefault.aspx>.

## **Summary of Selected Reportable Diseases 2014**

---

Case counts and age-specific rates for Allegheny County residents are presented. Crude incidence rates and age-specific rates for 2014 were calculated using 2014 case counts and the 2014 US Census population estimates for Allegheny County.

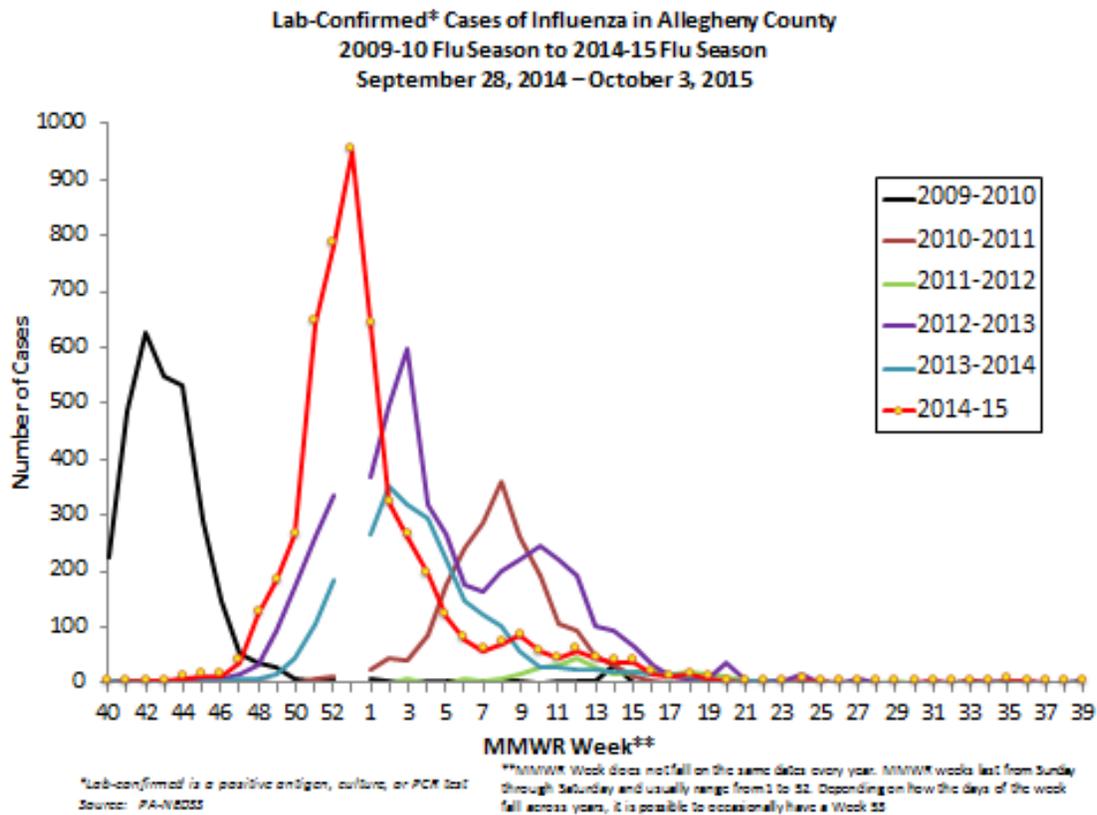
Data from 2014 are presented for most diseases. For influenza, most data pertain to September 28, 2014 through October 3, 2015 and represent the 2014-2015 influenza season.

## Vaccine preventable diseases

### Influenza

**Influenza**, a contagious respiratory illness, is the most commonly reported infectious disease in the county with the exception of chlamydial infection. The annual number of reported cases varies dramatically from year to year, depending on the type of circulating virus, the vaccine efficacy and vaccine coverage. During the 2009 H1N1 pandemic, cases were reported much earlier in the season, whereas in 2014-2015, the predominant strain was H3N2 and most cases occurred in December or January (Figure 1).

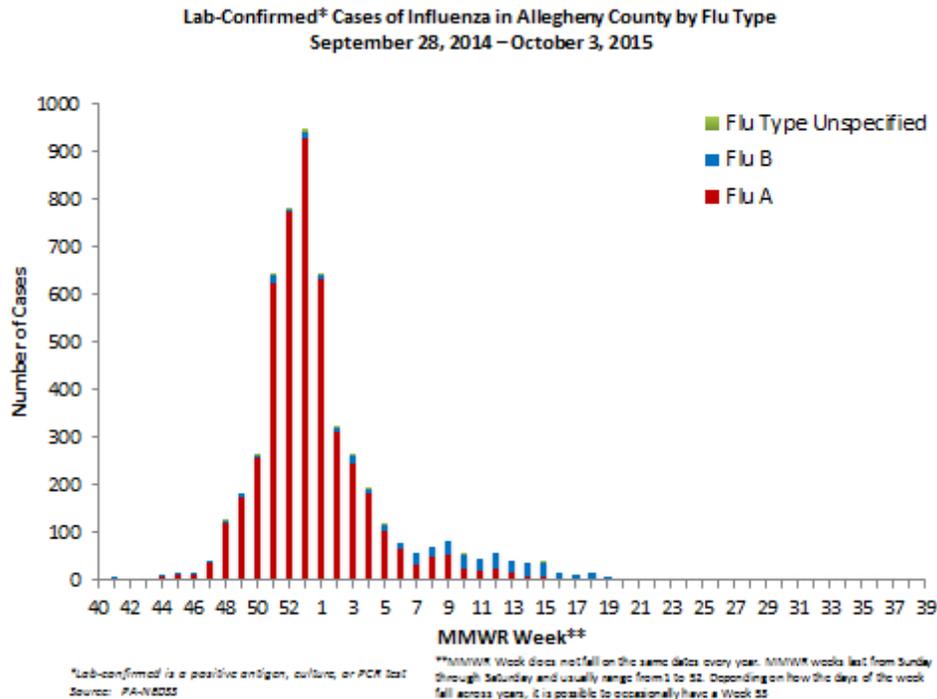
Figure 1



## Summary of Selected Reportable Diseases 2014

During the 2014-2015 influenza season (September 28, 2014, through October 3, 2015) 5,214 lab-confirmed cases were reported, with the number of reported cases peaking in early January (Figure 2).

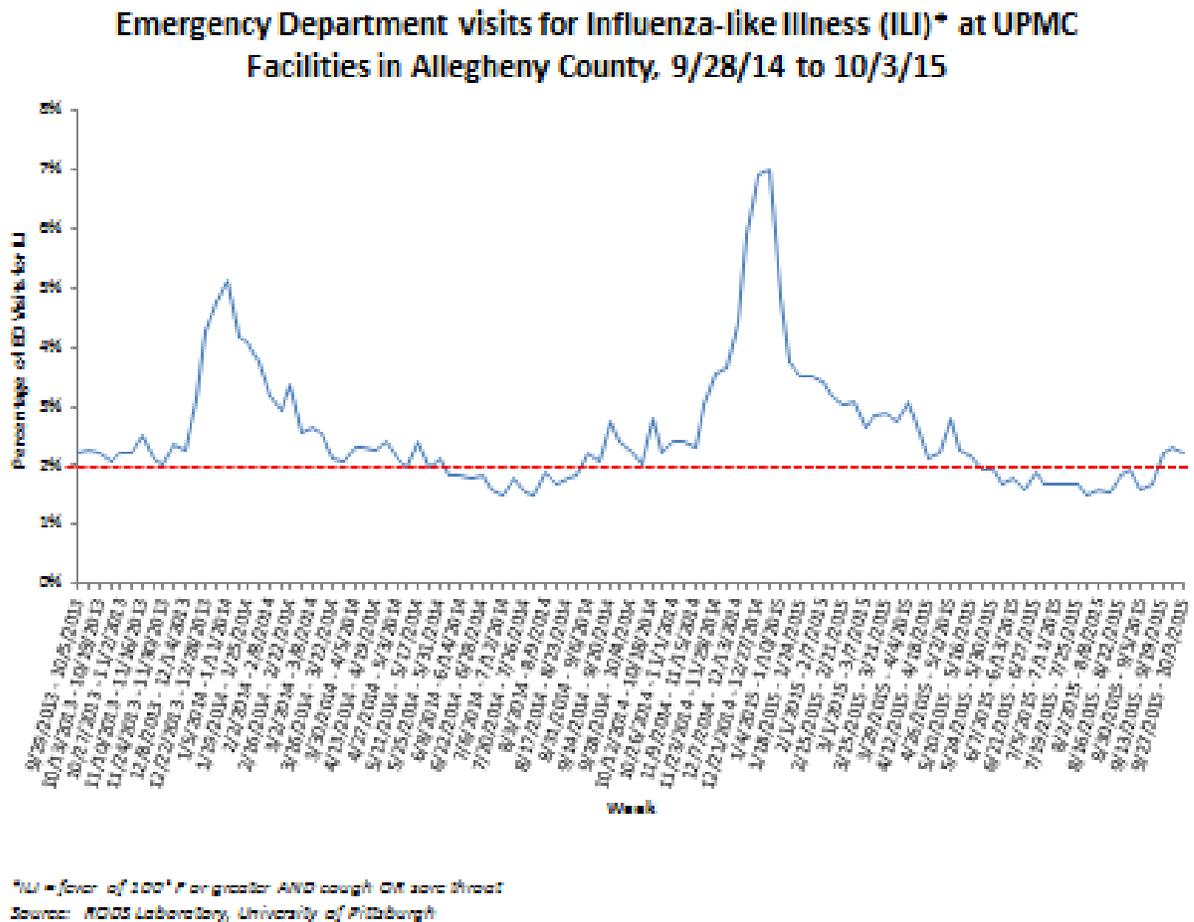
**Figure 2**



During the 2014-15 season, 762 persons were hospitalized with influenza and 25 persons died. The median age of those hospitalized was 79 years; the majority of cases (59%) were female. The median age of those dying from influenza was 84 years and 60% were male.

Because many persons with influenza do not seek medical care, are not tested, and are not reported, ACHD does not rely solely on case reporting but also monitors influenza activity using emergency room data. “Influenza-like illness (ILI),” is defined as fever plus cough or sore throat. Figure 3 shows what percentage of all persons seen in University of Pittsburgh Medical Center (UPMC) emergency rooms presented for ILI between September 2014 and September 2015.

Figure 3



Source: RODS Laboratory at the University of Pittsburgh

**Measles, Mumps, Rubella**

**Measles**, a highly infectious respiratory illness characterized by fever and rash, was eliminated from the US in 2000. Since then, clusters stemming from imported cases have reappeared from time to time. In 2014, 2 confirmed cases of measles were reported to ACHD. In the previous 10 years, five confirmed cases were reported to ACHD, including one in 2006, one in 2008 and three in 2009.

## Summary of Selected Reportable Diseases 2014

**Mumps**, also now a rare respiratory illness, is characterized by swelling of the salivary glands. In 2014, 5 confirmed cases and 4 probable cases were reported to ACHD, all related to a sports team outbreak. In the previous 10 years, a total of 9 cases total had been reported, including six in 2006, one in 2009, and 2 in 2013.

No cases of **rubella** have been reported in the past 10 years.

### Pertussis

**Pertussis**, a bacterial infection commonly known as whooping cough, is characterized by violent or prolonged coughing. A resurgence of pertussis occurred locally and nationally in 2012. Among Allegheny County residents, 226 cases were reported that year (Figure 4). Allegheny County also saw another resurgence in 2014, with 155 cases reported.

In 2014, the incidence of pertussis was highest in children 10-19 years of age, with 116 cases in this age group. Figure 5 shows age-specific rates for pertussis in 2014. Pertussis is most serious for infants < 12 months of age, given their lack of full protection from vaccination. In Allegheny County, 5 infants with pertussis were reported in 2014, but none were hospitalized. No deaths from pertussis were reported in the county. Most cases (88%) had been vaccinated against pertussis.

**Figure 4**

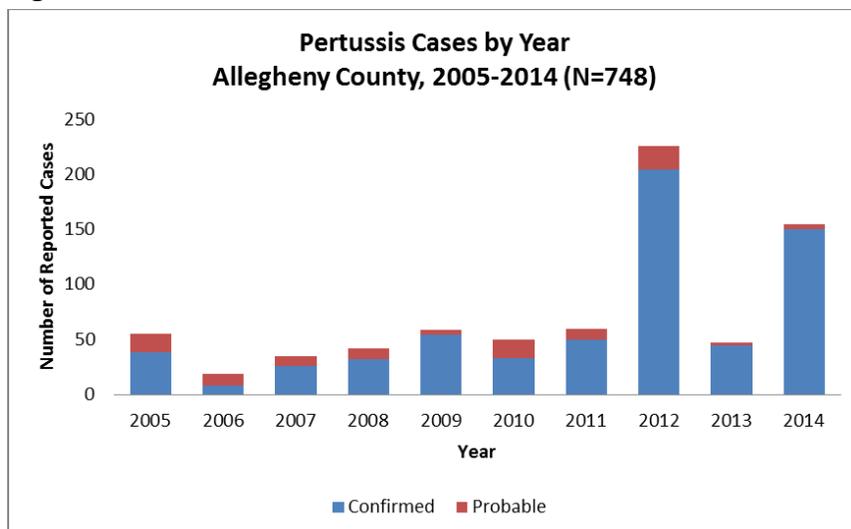
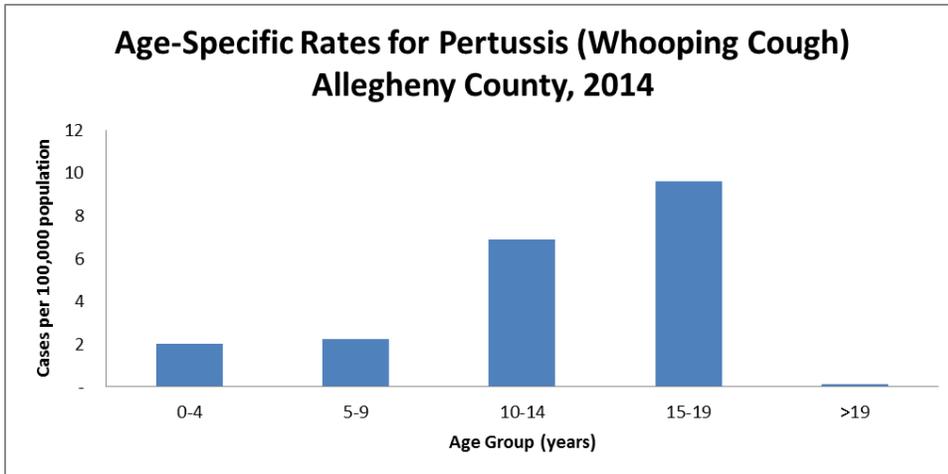


Figure 5

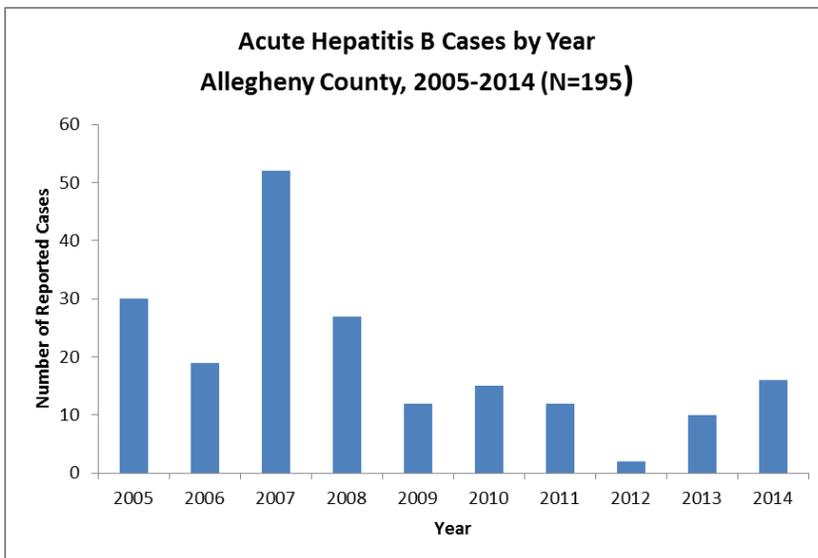


**Acute hepatitis B infections**

The **hepatitis B** virus is found in blood and other body fluids. In 2014, 16 cases of acute hepatitis B infections were reported to ACHD, the highest number since 2008 (Figure 6). Cases in 2014 ranged in age from 27 to 81 years. Three (19%) cases were hospitalized.

Risk factors reported by acute cases included injection drug use (13%), multiple sex partners (19%), contact with a hepatitis B case (6%), dental work or oral surgery (13%), and a needle stick (13%). Six cases had no identifiable risk factors.

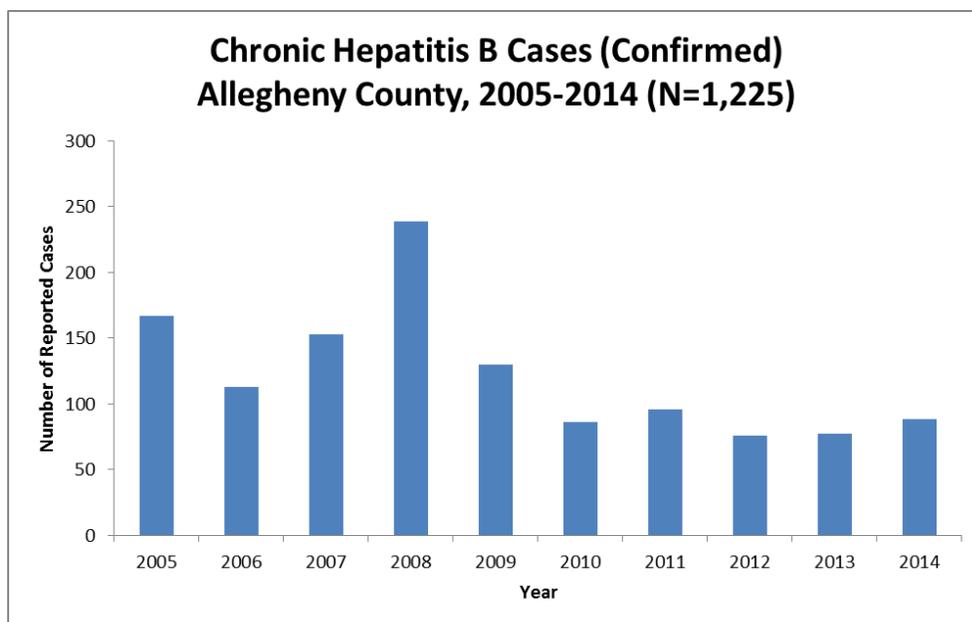
Figure 6



### Chronic hepatitis B

In 2014, 88 confirmed cases of chronic hepatitis B were reported. The general trend in newly reported chronic hepatitis B cases over the past 10 years is downward, with < 100 confirmed cases reported in the past 5 years (Figure 7). Of the 88 confirmed cases in 2014, 60% were male; 50% were 25-44 years of age and 34% were 45-64 years.

Figure 7



### Perinatal hepatitis

Twenty six infants born in 2014 to women with chronic hepatitis B virus were followed by the Infectious Disease Program. Of the 26, all received hepatitis B vaccine within one day of birth and 25 (96%) received immune globulin (HBIG) within one day of birth. Of the 26, 2 relocated before the 3-dose vaccine series was completed, one was lost to follow up, and 1 died within a week of birth. Of the remaining 22, all received the complete vaccine series by 10 months of age.

## Enteric diseases

### Shigellosis

**Shigellosis** is a diarrheal disease with outbreaks common at childcare facilities and among men who have sex with men. In most of the past 10 years, <10 cases of shigellosis were reported in

## Summary of Selected Reportable Diseases 2014

Allegheny County, except in 2009-2010 when several childcare facilities experienced outbreaks (Figure 8). A resurgence of shigellosis in the county began in 2014, with 36 cases reported. Of these, 26 were reported in October through December (Figure 9).

Of the 26 cases reported in October through December, 22 had one of 2 closely related PFGE patterns (*Shigella sonnei* strains). Of the fourth quarter cases, most were either children attending child care centers or elementary schools or their family members.

Figure 8

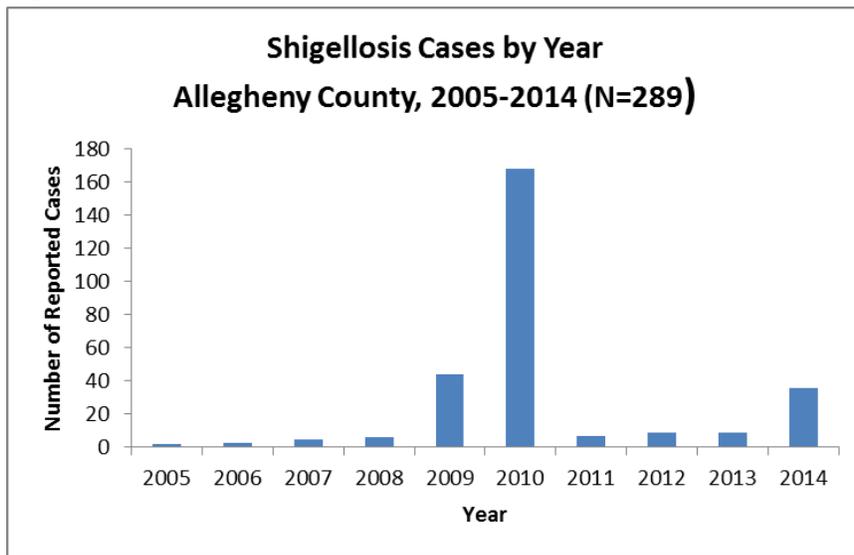
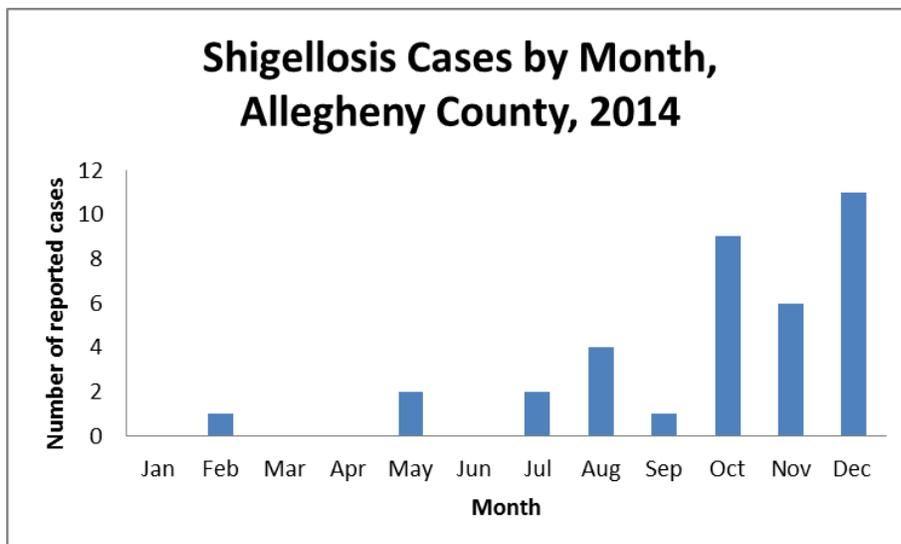


Figure 9



## Respiratory diseases

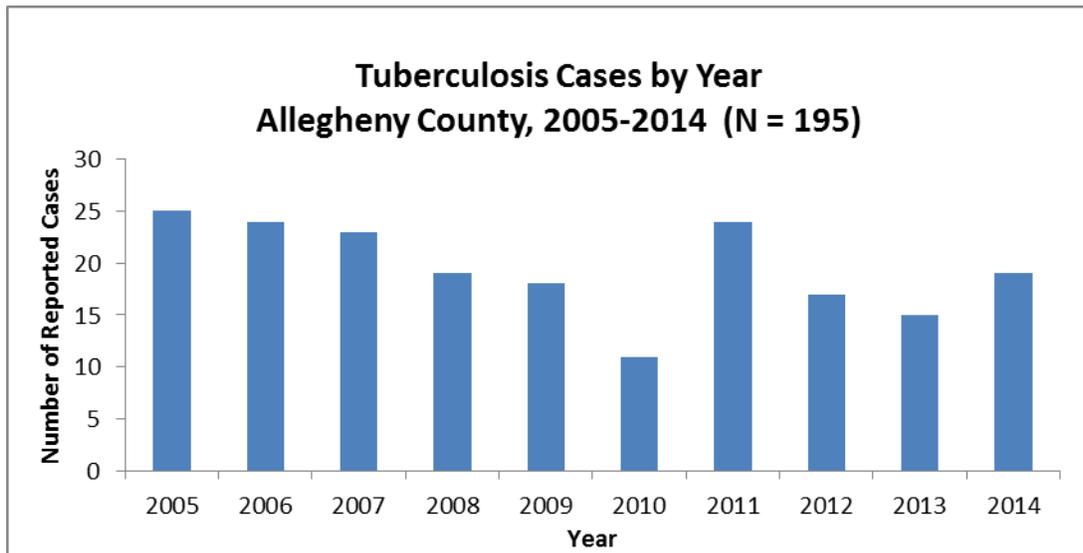
### Tuberculosis

**Tuberculosis** is a highly contagious respiratory disease that is endemic in many countries outside the US. In 2014, 19 cases of active tuberculosis (TB) were investigated by ACHD (Figure 10). The crude incidence rate for Allegheny County in 2014 (1.5 per 100,000) was half the national rate (3.0 per 100,000).

The median age of TB cases in Allegheny County was 39 years with range of 17 to 82 years; 32% were foreign born. HIV status was known for 16 (84%) of 19 cases, of whom 2 (13%) were HIV positive.

Susceptibility testing was recorded for 16 cases, 15 of which were susceptible to the four drugs tested; one case was resistant to isoniazid but sensitive to the other three drugs. All 19 patients were started on the recommended 4-drug regimen.

Figure 10



Legionellosis

Legionnaire's disease is a severe pneumonia which may affect persons with weak immune systems who breathe in aerosolized water containing *Legionella* bacteria. From 2005 through 2014, the number of reported cases varied from 54 to 118 (Figure 11). In 2014, 68 cases were reported to ACHD for a crude incidence rate of 5.5 per 100,000, much higher than the national rate of 1.6 per 100,000 in 2013 (latest available statistic). Almost all (99%) cases were hospitalized; at least 8 (12%) died.

The rates of reported cases were highest in persons  $\geq 70$  years (Figure 12); most (87%) cases were  $\geq 50$  years of age. More males (59%) than females were reported. The incidence was highest during the summer months (Figure 13). Most (66%) infections were community acquired, with 14% definitely health care associated and 21% possibly acquired in a health care facility. Only 3 persons reported travel during the 10 days before illness onset.

Figure 11

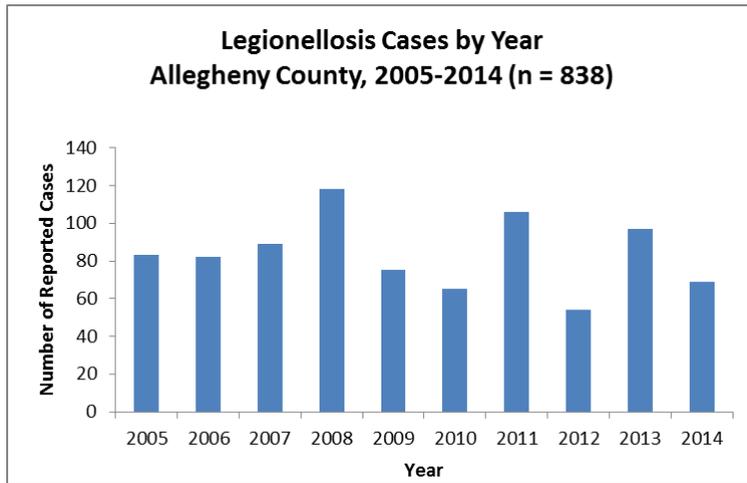


Figure 12

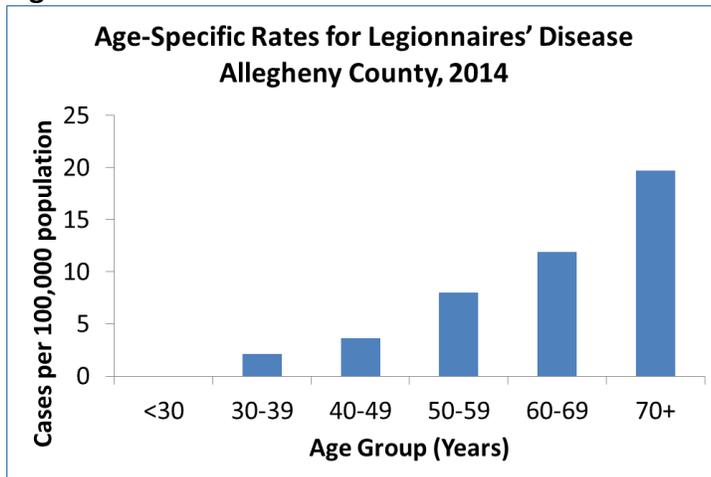
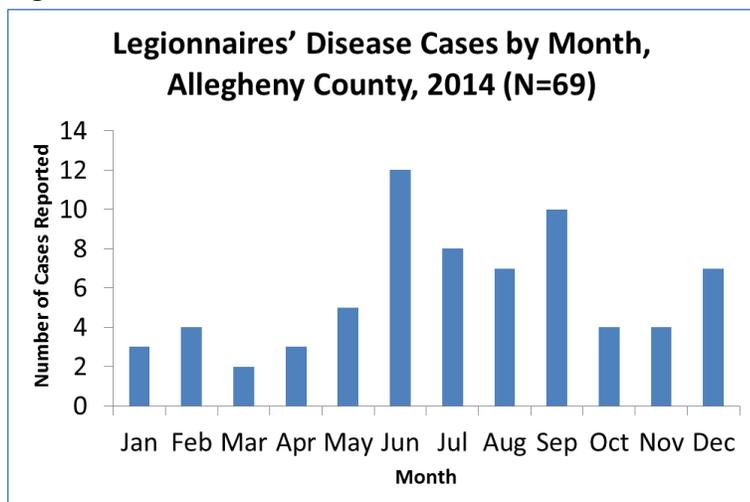


Figure 13



## Vectorborne

### Lyme disease

The number of positive laboratory reports received by ACHD for **Lyme disease**, a tickborne infection caused by the bacterium *Borrelia burgdorferi*, increased dramatically during the past 10 years, with approximately 1500 case/laboratory reports received in 2014. ACHD staff members were able to obtain enough information to classify 822 as confirmed or probable cases. By contrast, in 2004 through 2008, <30 confirmed cases per year were reported.

The number of reported cases was highest during the late spring and early summer (Figure 14). Children aged 5-9 years had the highest incidence rate, followed by adults 55-64 years (Figure 15). More males (57%) than females were reported.

The presence of erythema migrans (EM) was noted for 64% of cases. Approximately 43% of cases reported arthritis. Less than 10% reported Bell's Palsy and less than 5% reported radiculoneuropathy, lymphocytic meningitis, atrioventricular block or encephalitis.

A recent report released by the Pennsylvania Department of Environmental Protection noted that 39% of deer ticks in the southwest region of Pennsylvania tested in 2013 were positive for *Borrelia burgdorferi*.<sup>1</sup>

<sup>1</sup>Hutchinson ML, Strohecker M, Simmons TW, Kyle AD, Helwig MW. Prevalence rates of *Borrelia burgdorferi*, *Anaplasma phagocytophilum*, and *Babesia microti* in host-seeking *Ixodes scapularis* from Pennsylvania. J Med Entomol 2015;52(4):693-698.

Figure 14

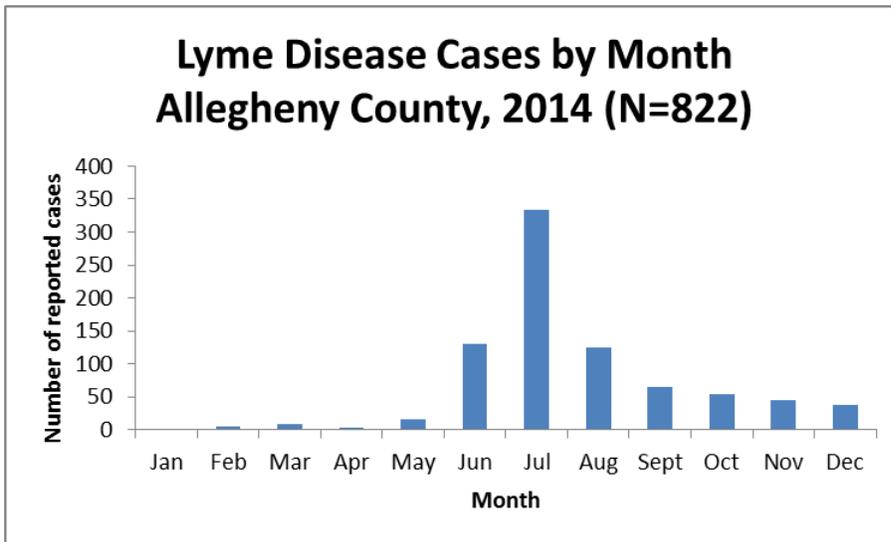
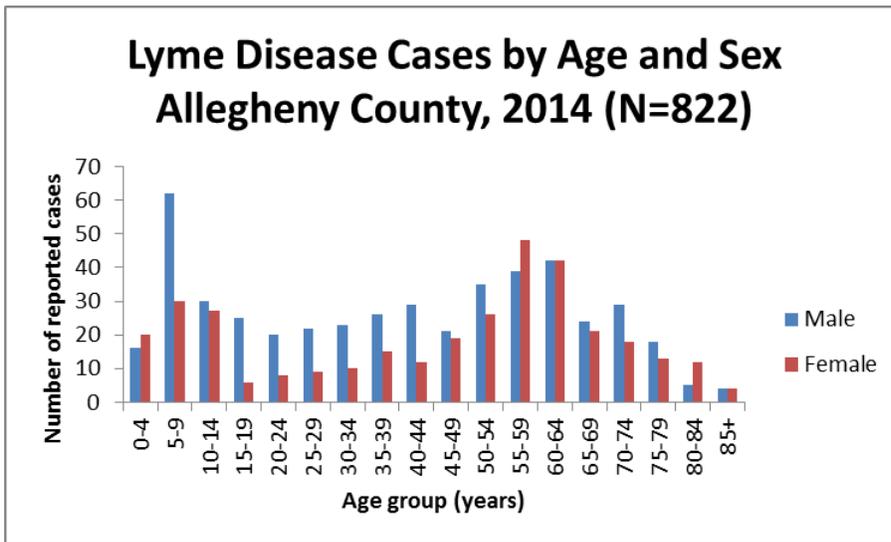


Figure 15



**West Nile virus disease**

The **West Nile virus** (WNV) is transmitted by mosquito and can cause a febrile illness and occasionally encephalitis. One case of probable neuroinvasive disease was reported in 2014; in 2005-2013, 8 cases of confirmed or probable WNV were reported.

### Chikungunya

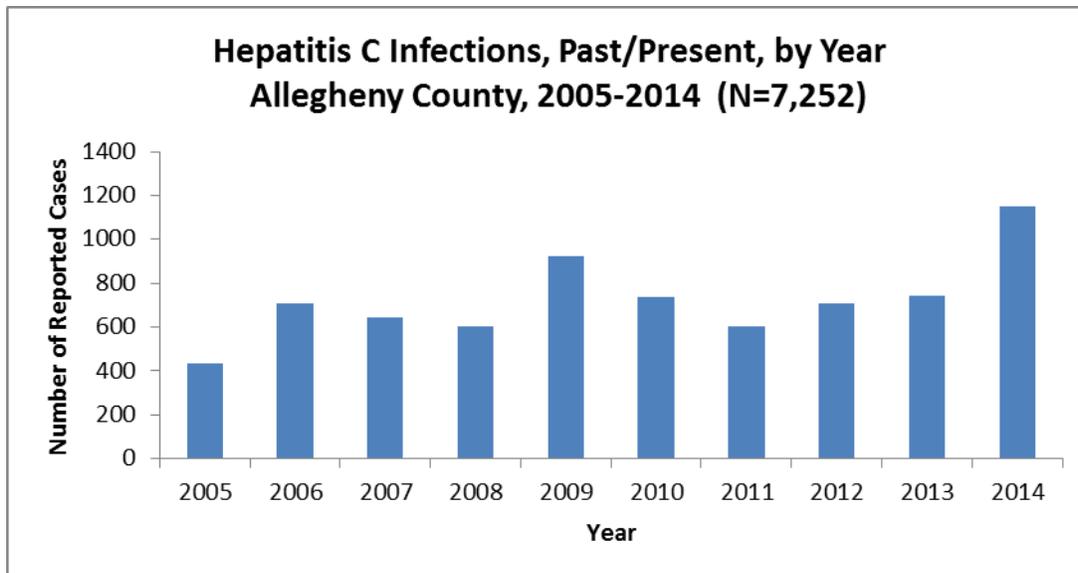
Chikungunya is a mosquito-borne viral disease characterized by fever and severe joint pain. In late 2013, the first cases of chikungunya in the Americas were reported on Caribbean islands. In 2014, 19 cases of confirmed or probable chikungunya were reported among residents of Allegheny County, all of whom had traveled outside the continental US. Places of exposure included Haiti, the Dominican Republic, Puerto Rico, Trinidad, Jamaica, Venezuela, and Indonesia. Cases ranged in age from 14 to 53 years; 89% were female. No locally acquired cases of chikungunya have been reported in the 50 states except for in Florida in 2014.

### Other diseases

#### Hepatitis C

In 2014, ACHD received 2,364 reports of hepatitis C. Of these, 1,149 were classified as confirmed “past or present” infections based on positive RNA lab reports, 99 were classified as probable “past of present” infections based on results of liver function tests, and 857 were considered “suspect” cases with only positive antibody tests reported. Only one case was classified as acute hepatitis C based on the symptom information provided. Of the 1,149 confirmed cases of “past or present” hepatitis C reported, 57% were males and 50% were born during 1945-1965, a target birth cohort for hepatitis C screening.

Figure 16



## Summary of Selected Reportable Diseases 2014

### Outbreaks

In 2014, 38 disease outbreaks were reported to ACHD, including 10 norovirus outbreaks in a variety of settings and 7 influenza outbreaks at long-term care facilities (LTCFs).

**Table 1: Outbreaks reported to ACHD by disease and setting, 2014.**

Condition	Norovirus	GI unspecified	Food poisoning unspecified	Varicella	Pertussis	Mumps	Influenza	MRSA	Scabies	Conjunctivitis	Hand, foot, and mouth disease
# outbreaks	10	5	1	1	4	1	7	1	3	1	4
# people ill	349	99	3	20	42	8	91	2	*	20	*
# outbreaks by setting											
Restaurant	1	0	0	0	0	0	0	0	0	0	0
Long-term care facility	5	4	0	0	1	0	7	0	0	0	0
Hospital	2	0	0	0	0	0	0	0	0	0	0
School	1	1	0	0	3	0	0	1	3	1	3
Child care center	0	0	0	1	0	0	0	0	0	0	1
Catered event/hotel	1	0	1	0	0	0	0	0	0	0	0
Workplace	0	0	0	0	0	1	0	0	0	0	0

\*Exact number of ill persons not reported for at least one outbreak

**Summary of Selected Reportable Diseases 2014**

**Appendix A: Number of cases reported by disease, Allegheny County, 2005-2014**

Disease	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Amebiasis	0	1	0	1	3	1	2	1	2	4	15
Infant Botulism	0	0	1	0	0	2	0	1	1	0	5
Campylobacteriosis	111	74	75	106	99	137	96	118	131	109	1056
Creutzfeldt-Jakob	2	0	0	1	5	0	1	3	3	2	17
Cryptosporidiosis	16	24	17	22	29	38	35	23	31	29	264
Dengue	0	2	1	1	0	1	0	4	2	1	12
Giardiasis	74	47	47	98	60	61	61	62	97	88	695
Guillain-Barre	10	7	9	5	9	15	8	4	11	9	87
Haemophilus influenzae	15	19	9	9	7	15	26	23	16	14	153
Hepatitis A	8	4	20	9	4	7	7	8	4	3	74
Hepatitis B, Acute	30	19	52	27	12	15	12	2	10	16	195
Hepatitis C, Acute	6	0	1	0	0	0	0	0	0	1	8
Hepatitis C, Past/Present	1754	1684	1633	1811	1898	1449	1374	1734	1636	2364	17337
Legionellosis	83	82	89	118	75	65	106	54	97	68	838
Listeriosis	10	16	10	7	3	6	8	3	3	2	68
Malaria	2	2	5	0	4	2	9	4	5	5	38
Measles	0	1	0	1	3	0	0	0	0	2	7
Mumps	0	6	0	0	1	0	0	0	2	9	18
Meningococcal, invasive	7	4	2	3	3	0	4	2	2	0	27
Pertussis	55	19	35	42	59	50	60	226	47	155	748
Salmonellosis	89	125	88	118	136	156	146	124	107	111	1200
Shigellosis	2	3	5	6	44	178	7	9	9	36	299
Shiga toxin producing E. coli	13	16	12	13	3	15	8	15	45	7	147
Invasive Group A Strep	59	58	32	25	51	31	35	24	35	26	376
Invasive <i>S. pneumoniae</i>	38	32	28	46	25	52	73	76	60	40	470
TB (active)	25	24	23	19	18	11	24	17	15	19	195
Toxoplasmosis	4	1	6	3	9	5	17	13	0	3	61
Toxic shock syndrome	1	1	2	1	0	1	0	0	1	0	7
Typhoid Fever	0	1	2	5	3	4	6	1	2	0	24
Varicella	472	583	433	139	83	59	73	75	50	62	2029
West Nile	6	0	1	0	0	0	1	0	0	1	1

Appendix B: List of reportable diseases, Allegheny County

**REPORTABLE DISEASES/CONDITIONS IN ALLEGHENY COUNTY**

Report the Following Diseases/Conditions via PA-NEDSS\* at <https://www.nedss.state.pa.us>

Report HIV to (412) 578-8358 and Sexually Transmitted Infections to (412) 578-8081

**Any unusual diseases/infections/conditions including SARS or MERS-CoV are to be reported IMMEDIATELY as soon as clinically suspected. Reporting is not to await laboratory confirmation.**

**Outbreaks of any kind are to be reported IMMEDIATELY**

ON NIGHTS, WEEKENDS, AND HOLIDAYS REPORT ALL TO (412) 687-ACHD (2243)

**Healthcare practitioners and healthcare facilities MUST report the following WITHIN 24 HOURS\*\***

- |   |  |
|---|--|
| 1) Animal bites ( <u>separate form on ACHD website</u> )  | 10) <i>Haemophilus Influenzae</i> invasive disease |
| 2) Anthrax  | 11) Hantavirus pulmonary syndrome                  |
| 3) Arboviruses (includes chikungunya, dengue, Eastern equine encephalitis, Japanese encephalitis, Powassan, St. Louis encephalitis, West Nile virus infection, Yellow fever, et. al.) | 12) Hemorrhagic fever (includes Ebola)             |
| 4) Botulism (all forms)   | 13) Lead Poisoning                                 |
| 5) Carbon Monoxide Poisoning  | 14) Legionellosis                                  |
| 6) Cholera  | 15) Measles  |
| 7) Diphtheria   | 16) Meningococcal invasive disease                 |
| 8) Enterohemorrhagic <i>E. coli</i> (shiga toxin-producing <i>E. coli</i> or STEC)  | 17) Plague   |
| 9) Food poisoning   | 18) Poliomyelitis                                  |
|   | 19) Rabies   |
|   | 20) Smallpox                                       |
|   | 21) Typhoid fever                                  |

**Healthcare practitioners and healthcare facilities MUST report the following within FIVE WORKING DAYS\*\***

- |   |   |
|---|---|
| 22) Acquired Immunodeficiency Syndrome (AIDS)   | 52) Meningitis (all types—not limited to invasive <i>Haemophilus influenzae</i> or <i>Neisseria meningitidis</i> )      |
| 23) Anaplasmosis  | 53) Mumps   |
| 24) Amebiasis   | 54) Perinatal exposure of a newborn to Hepatitis B  |
| 25) Babesiosis  | 55) Perinatal exposure of a newborn to HIV  |
| 26) Brucellosis   | 56) Pertussis   |
| 27) Campylobacteriosis  | 57) Psittacosis (Ornithosis)  |
| 28) Cancer ( <u>report to the Pennsylvania Cancer Registry</u> )  | 58) Respiratory Syncytial Virus   |
| 29) CD4 T-Lymphocyte test result <200 or a percentage <14% of total   | 59) Rickettsial Diseases  |
| 30) Chancroid   | 60) Rubella and Congenital Rubella Syndrome   |
| 31) Chickenpox (Varicella)  | 61) Salmonellosis   |
| 32) <i>Chlamydia trachomatis</i> (Chlamydia) Infections   | 62) Shigellosis   |
| 33) Creutzfeldt-Jakob Disease   | 63) Staphylococcus aureus, Vancomycin-resistant (VISA) or Intermediate (VISA) invasive disease                          |
| 34) Cryptosporidiosis   | 64) Streptococcal invasive disease (group A)  |
| 35) Ehrlichiosis  | 65) Streptococcus pneumoniae, invasive disease  |
| 36) Encephalitis (all types)  | 66) Syphilis - all stages   |
| 37) Giardiasis  | 67) Tetanus   |
| 38) <i>Neisseria gonorrhoeae</i> (Gonorrhea) Infections   | 68) Toxic Shock Syndrome  |
| 39) Granuloma Inguinale   | 69) Toxoplasmosis   |
| 40) Guillain-Barre Syndrome   | 70) Trichinosis   |
| 41) Hepatitis, Viral — Acute and Chronic (A, B, C, D, E)  | 71) Tuberculosis  |
| 42) Histoplasmosis  | 72) Tularemia   |
| 43) Human Immunodeficiency Virus (HIV)  |   |
| 44) Influenza (Lab-confirmed only)  | <b><u>Reportable only in children &lt;5 years of age to the Pennsylvania Department of Health at (877) 724-3258</u></b> |
| 45) Leprosy   | 73) Congenital Adrenal Hyperplasia (CAH)  |
| 46) Leptospirosis   | 74) Congenital Hypothyroidism   |
| 47) Listeriosis   | 75) Galactosemia  |
| 48) Lyme Disease  | 76) Maple Syrup Urine Disease   |
| 49) Lymphogranuloma Venereum  | 77) Phenylketonuria   |
| 50) Malaria   | 78) Sickle Cell Disease   |
| 51) Methicillin-Resistant Staphylococcus Aureus (MRSA), invasive disease ( <u>separate form on ACHD website</u> ) |   |

\*PA-NEDSS is Pennsylvania's version of the National Electronic Disease Surveillance System.

New Users: To register for PA-NEDSS access please send an e-mail to [NEDSS@pa.gov](mailto:NEDSS@pa.gov).

\*\*Clinical laboratories — all diseases are reportable by next workday