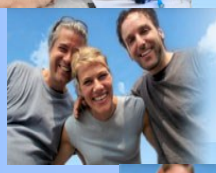
Division of Disease Control
2012 Annual Report



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Introduction

Overview

This annual report provides an epidemiologic summary of conditions reported to the Division of Disease Control (DDC) in 2012. The report highlights the most commonly reported conditions and those of public health importance. Conditions with limited reports are only included in the summary table (Appendix C).

This report is available on the following websites: http://www.phila.gov/health/DiseaseControl/DataReports.html
https://hip.phila.gov/xv/AnnualReports/tabid/161/Default.aspx

Case Definition

A standard reporting case definition has been set for most reportable conditions by the Centers for Disease Control and Prevention (CDC) and the Council of State and Territorial Epidemiologists (CSTE). These case definitions may differ from the criteria used to make a clinical diagnosis.

The current case definition list is available here: http://wwwn.cdc.gov/nndss/

Reporting to PDPH

We want to take this opportunity to thank the medical and laboratory communities for their disease reporting activities. As a reminder, reports can be submitted to DDC by telephone, fax, mail (see DDC contact information below), or through PA-NEDSS. The most recent PDPH Notifiable Disease Case Report Form can be found in Appendix A.

The list of reportable conditions is in Appendix B and on the DDC website:
https://hip.phila.gov/xv/Portals/0/HIP/Disease_Reporting/PDPH%20Notifiable%20List%202005-seal.pdf

How DDC Can Assist Health Care Providers

If you suspect a disease outbreak or that a patient is infected with a disease of urgent public health importance (Appendix B), DDC can facilitate diagnostic testing and assist with infection control and disease management. To speak with a medical specialist, please use the contact information below.

DDC Contact Information

Business Hours Consultation	215-685-6740
Urgent After-Hours Consultation	215-686-4514, Ask for DDC on-call staff.
Disease Reporting by Telephone	215-685-6748
Disease Reporting by Fax	215-238-6947
Disease Reporting by Mail	PDPH DDC, 500 South Broad Street, Philadelphia, PA 19146

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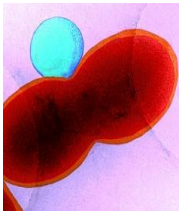
Commonly Used Abbreviations

AACO	AIDS Activities Coordinating Office
ACIP	Advisory Committee on Immunization Practices
AIDS	Acquired Immunodeficiency Syndrome
AVHPC	Adult Viral Hepatitis Prevention Coordinator
CDC	Centers for Disease Control and Prevention
CRS	Congenital Rubella Syndrome
CSF	Cerebrospinal fluid
CSTE	Council of State and Territorial Epidemiologists
DNA	Deoxyribonucleic acid
DDC	Division of Disease Control
DFA	Direct fluorescent antibody
DOT	Direct observed therapy
DTaP	Diptheria, tetanus, acellular pertussis vaccine
ED	Emergency Department
EHS	Philadelphia Department of Public Health Environmental Health Services
EIA	Enzyme Immunoassay
GAS	Group A *Streptococcus*
GI	Gastrointestinal
HAV	Hepatitis A Virus
HBIG	Hepatitis B immunoglobulin
HBsAg	Hepatitis B surface antigen
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HCW	Health Care Worker
HIV	Human Immunodeficiency Virus
HRC	Health Resource Centers
Ig	Immunoglobulin
IFA	Immunofluorescent Assay
ILI	Influenza-like illness
INH	Isoniazid
IPD	Invasive Pneumococcal Disease
LD	Legionnaires' Disease
LTBI	Latent Tuberculosis Infection
MDR-TB	Multi-drug Resistant Tuberculosis
MMR	Measles, mumps, rubella vaccine
MRC	Medical Reserve Corps
MSM	Men who have sex with men
NAAT	Nucleic acid amplification tests
PCV	Pneumococcal-Conjugate Vaccine
PEP	Post-exposure prophylaxis
PID	Pelvic Inflammatory Disease
PDPH	Philadelphia Department of Public Health
PFGE	Pulsed Field Gel Electrophoresis
PHBPP	Perinatal Hepatitis B Prevention Program
PHL	Philadelphia Department of Public Health Laboratory
POD	Point of Dispensing Site
P&S	Primary and secondary (syphilis)
PZA	Pyrazinamide
RNA	Ribonucleic acid
RWI	Recreational Water Illnesses
SPDR	Drug resistant *Streptococcus pneumoniae*
STEC	Shiga-toxin producing *Escherichia coli*
STD	Sexually Transmitted Disease
TB	Tuberculosis
Td	Tetanus, diphtheria vaccine
TDaP	Tetanus, diphtheria, acellular pertussis vaccine
TMP/SMX	Trimethoprim/Sulfamethoxazole (Bactrim)
US	United States
VFC	Vaccines for Children Program
VFAAR	Vaccines for Adults at Risk Program
WNV	West Nile Virus

Central Nervous System

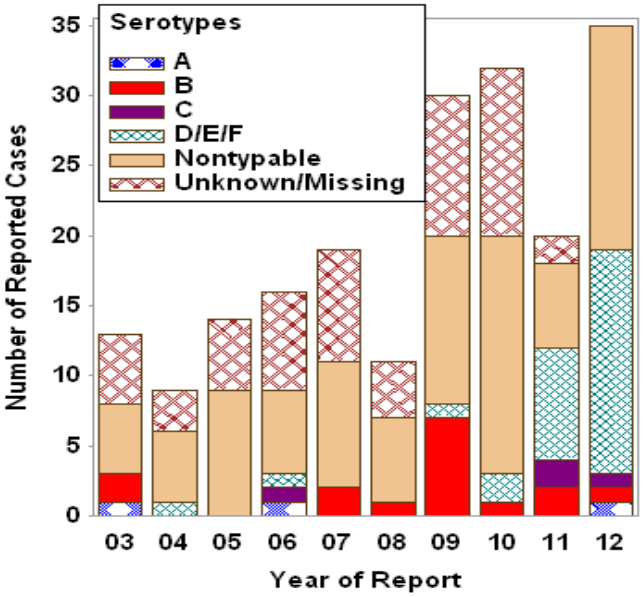
Infections and Sepsis

Invasive *Haemophilus influenzae* Disease



Thirty-nine cases of confirmed invasive *Haemophilus influenzae* (Hflu) were reported to PDPH in 2012. Three positive sputum Hflu cultures were also reported, but were not invasive and therefore were not confirmed as cases. Cases were evenly distributed between males and females (20/39 [51%] male). The median age was 53 years (range: birth-90 years). Ten cases were children under the age of 5 years. Thirty-five isolates (90%) were cultured from blood. Hflu was also isolated from CSF for 3 cases and from lung tissue for a deceased case. Thirty-five of the 39 cases (90%) were known to be hospitalized and 1/39 (3%) was fatal. Serotype information was available for 37 cases (95%), of which 18/37 (49%) were nontypeable, 11/37 (30%) were serotype f, 3/37 (8%) were serotype e, 2/37 (5%) were serotype d, and 3/37 were in serotypes a, b, and c (3% in each). The serotype b case was 67-years-old with no known underlying conditions or history of *Haemophilus influenzae* type b (HIB) vaccination.

Figure 1. Invasive *Haemophilus influenzae* by Serotype: Philadelphia, 2003-2012

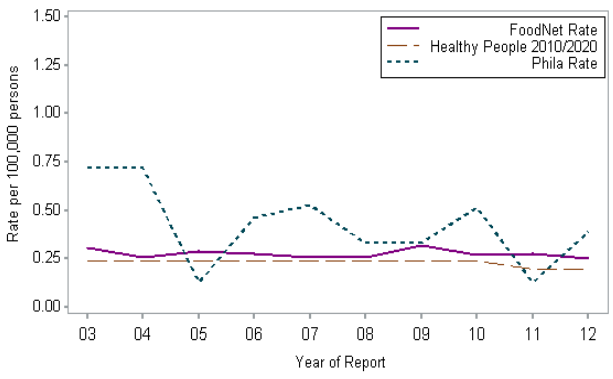


N=212

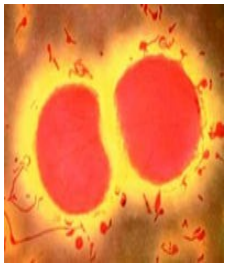
Listeriosis *(Listeria monocytogenes)*

In 2012, there were six cases of listeriosis in Philadelphia residents, an increase from three cases in 2011. Of the six cases, five were female. The age range was 35-89 years (median age 67 years). PDPH did not identify any links between these cases – they occurred sporadically in time and place, and the DNA fingerprints identified by pulsed field gel electrophoresis were different. One case was linked to a multistate outbreak associated with ricotta salata cheese. Four of the six cases reported an underlying condition, including hypertension, renal disease, cancer, and a history of organ transplant. In all six cases, *L. monocytogenes* was isolated from blood. All cases were hospitalized, and there was one fatality.

Figure 2. Rates of Lab-Confirmed Listeriosis by Year of Report: Philadelphia, 2003-2012



MENINGOCOCCAL INFECTION *(Neisseria meningitidis)*



Six cases of invasive meningococcal disease were reported in 2012. The median age of cases was 36 years (range: 2-86 years) and 4/6 (67%) of cases were male. Five cases (83%) were hospitalized. There was one fatality. *N. meningitidis* was isolated from blood (5) and synovial fluid (1). Serogroup information was available for all of the cases: two were typed B, two were typed Y, one was typed C, and one was nontypeable (Table 1). The three vaccine-preventable cases (type Y) were neither age-eligible for vaccine nor at increased risk for infection.

Figure 3. Invasive Meningococcal Disease by Age Group: Philadelphia, 2003-2012

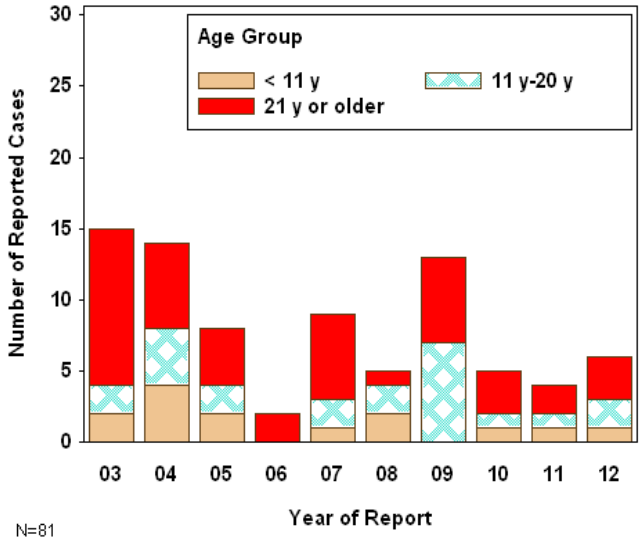
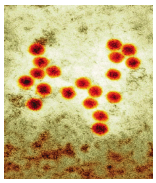


Table 1. Meningococcal Serogroups: Philadelphia, 2003 to 2012

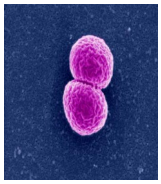
Serogroup	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total N (%)
B	3	1	1	0	0	1	8	1	1	2	18 (23%)
C	5	3	0	0	4	0	1	1	0	1	15 (19%)
W	1	0	0	1	0	0	1	0	0	0	3 (4%)
X	0	0	0	0	0	0	0	0	1	0	1 (1%)
Y	4	6	4	0	2	2	2	2	2	2	26 (33%)
Z	0	1	0	0	1	0	0	0	0	0	2 (3%)
Nontypeable	2	1	3	1	2	2	0	1	0	1	13 (17%)
Total	**15**	**12**	**8**	**2**	**9**	**5**	**12**	**5**	**4**	**6**	**102 (100%)**

MENINGITIS, ASEPTIC



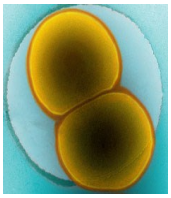
In 2012, 92 cases of aseptic meningitis among Philadelphia residents were reported to and confirmed by DDC. The median age of these individuals was 25 years (range: 5 days-74 years). Slightly more cases were female (51, 55%). Of the 92 cases, most (83, 90%) were hospitalized. A 61-year-old male with coronary artery disease and 50-year-old female died shortly after their hospital admission for aseptic meningitis. Among the 36 cases <20 years of age, 31 (86%) tested positive for enterovirus. Of the 56 adult cases (≥20 years of age), 10 (18%) were ruled out as neuroinvasive West Nile Virus infections.

MENINGITIS, *OTHER* BACTERIAL



In 2012, there were five cases of bacterial meningitis fitting this category. Median age was one month and 80% of the cases were infants. Four (80%) of the cases were female. Group B *Streptococcus* was isolated from four of the cases and *Streptococcus salivarius* was isolated from one case. All cases were hospitalized but none were fatal.

INVASIVE *Streptococcus pneumoniae* DISEASE



There were 121 confirmed cases of invasive pneumococcal disease (IPD) in Philadelphia during 2012. Half of the cases were among females (61/121 [50%]), and the median age of infection was 56 years (range: 4 months -93 years). Ten cases (10/121 [8%]) were in children under 5 years of age and 38/121 (31%) were over 65 years of age (Table 2). One case under 5 years of age was fatal.

Drug Resistant Invasive S. pneumoniae Infections

In 2012, 16 (14%) of the 115 isolates with susceptibilities were fully or intermediately resistant to at least one antimicrobial agent currently approved for use in treating pneumococcal infection. In 2012, 4 pneumococcal isolates were not susceptible to penicillin (Table 3).

Table 3. Antibiotic Susceptibilities of Invasive Streptococcus pneumonia Isolates: Philadelphia, 2012

Antibiotics	Isolates Tested (No.)	Susceptible Isolates (%)
Penicillin/Oxacillin	103	96
Ceftriaxone	69	100
Erythromycin	72	90
Clindamycin	36	89
TMP/SMX	50	90
Vancomycin	53	100
Levofloxacin	59	100

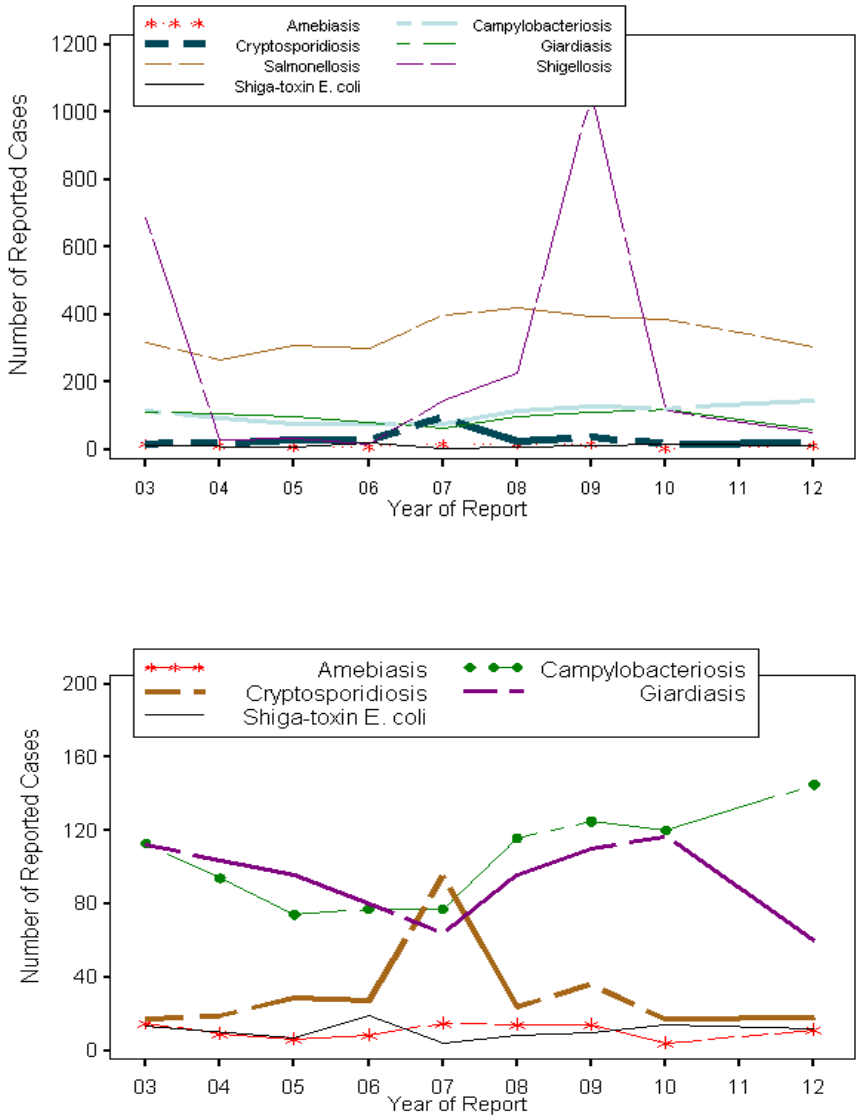
Table 2. Characteristics of Confirmed Invasive Pneumococcal Disease Cases by Age Group, Philadelphia 2012

Patient Characteristics	Age Groups		
	<5 years old N (%)	**5-64 years N (%)**	**≥ 65 years N (%)**
Number of Reported Cases	10 (8%)	73 (60%)	38 (31%)
Age (median, range)	16 months (4-58 mos)	51 years (5-64 yrs)	76 years (65-93 yrs)
Female	1 (17%)	53 (51%)	29 (62%)
Clinical Manifestations			
Pneumonia	2 (20%)	45 (62%)	20 (53%)
Pneumonia and bacteremia	0	0	3 (8%)
Bacteremia no focus indicated	2 (20%)	14 (19%)	8 (21%)
Bacteremia with focus	0	1 (1%)	0
Meningitis	2 (20%)	2 (3%)	3 (8%)
Other	3 (30%)	10 (14%)	2 (5%)
Missing	1 (10%)	1 (1%)	2 (5%)
Outcomes			
Hospitalized	7 (70%)	70 (96%)	37 (97%)
Fatal	1 (10%)	8 (11%)	4 (11%)
≥1 Reported Underlying Condition**	40 (40%)	58 (79%)	31 (82%)
Any Reported PCV * Vaccination			
Up-to-date vaccination	4 (40%)	58 (79%)	31 (82%)
Under age for vaccine	0	N/A	N/A
S. pneumonia Serotypes	19A (3), 7F (2), 17F (1), 15B (1), Non-typeable (1), Cross-Reacting (1)		
Drug Resistant	2 (20%)	9 (12%)	4 (11%)

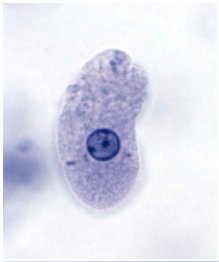
Gastrointestinal Infections

PDPH receives reports on at least eight notifiable gastrointestinal (GI) infections– *Entamoeba histolytica, Campylobacter, Cryptosporidia*, shiga-toxin producing *Escherichia coli, Giardia, Listeria* (included in the section on central nervous system infections), *Salmonella*, and *Shigella*. All of these infections require culture or identifications to be attributed to the agent. Generally, the most commonly reported notifiable GI illness in Philadelphia is salmonellosis (Figure 4).

Figure 4. Reported Cases of Gastrointestinal Diseases: Philadelphia, 2003 to 2012

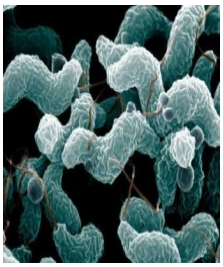


AMEBIASIS *(Entamoeba histolytica)*



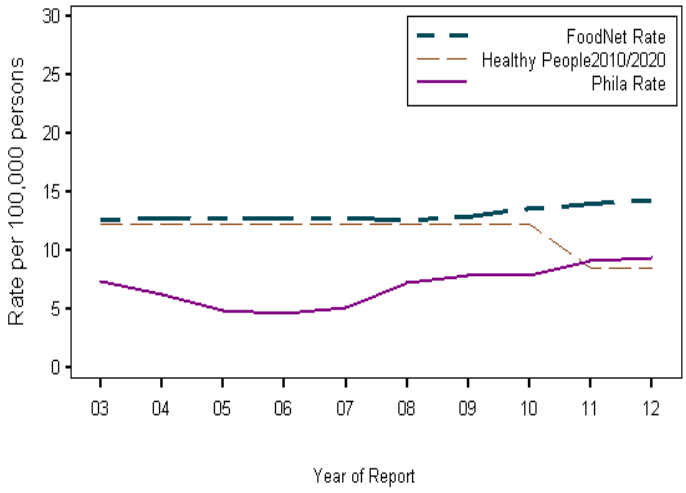
In 2012, eleven confirmed cases of amebiasis were reported – the same number of cases that were reported in 2011. No outbreaks or clusters of amebiasis were identified during 2012. Of those infected, nine cases (82%) were male and the median age was 44 years (range: 13-66 years). One case reported travel to Cambodia during the incubation period. Three of the adult males interviewed reported having sex with men (MSM) and one case reported recreational water exposure during the incubation period.

CAMPYLOBACTERIOSIS (*Campylobacter* SPP.)

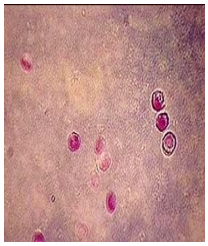


In 2012, a total of 182 cases (144 confirmed cases, one probable case, and 37 suspect cases) of campylobacteriosis were reported among Philadelphia residents. The 2012 cases were nearly equally divided by gender, as 96 cases (53%) were male. The median age was 32 years (range: 0-99 years). Information on symptoms was available for 157 cases, 156 (99%) reported diarrhea, 76 (48%) reported fever, 58 (37%) reported nausea, and 46 (29%) reported vomiting. Twenty-three of the 139 cases (17%) with travel information available reported traveling outside the US during their incubation period, and nine cases (6%) reported traveling out of state. In 2012, there were two Philadelphia cases linked to a multi-state outbreak of campylobacteriosis associated with raw milk produced by a Pennsylvania farm. A total of 148 cases (81 confirmed, 67 probable) were associated with this outbreak, with the vast majority of cases residing in PA. There were also three cases (two confirmed and one probable) associated with a menu item at a Philadelphia restaurant. Thirty-eight had animal contact, but only 5 persons had contact with an animal other than a cat or dog (one lizard, one iguana, one with baby ducks, and two with parrots). Two campylobacteriosis fatalities were reported. Of the 41 isolates with serotype information, 38 were *Campylobacter jejuni* and 3 were *Campylobacter coli*. Ciprofloxacin susceptibility was available for 28 of 144 Campylobacter isolates (19%). Of these, 7 (25%) were ciprofloxacin-resistant (Table 5).

Figure 5. Rates of Lab-Confirmed Campylobacteriosis by Year of Report: Philadelphia, 2003 to 2012

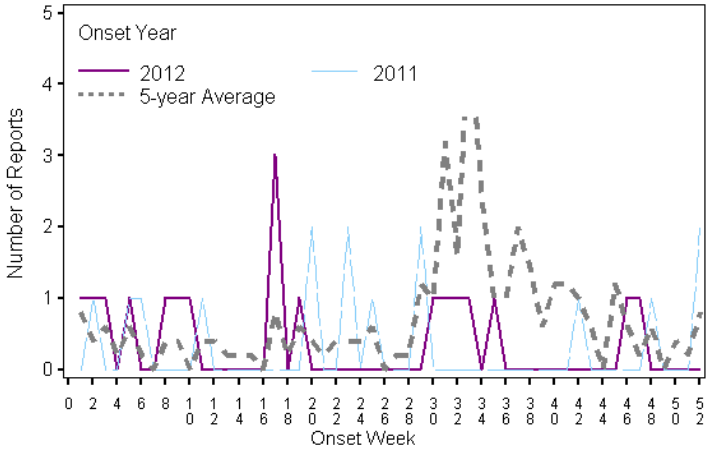


CRYPTOSPORIDIOSIS (*Cryptosporidium* SPP.)

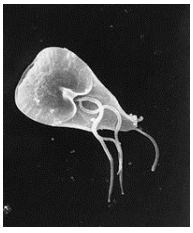


In 2012, a total of 9 confirmed cases and 9 probable cases of cryptosporidiosis were reported in Philadelphia, compared to 5 confirmed cases and 12 probable cases in 2011. The median age of the 2012 cases was 26 years (range: 9-79 years) and 12 (67%) of the cases were male. Among those with available data, risk factors that were reported include an immunocompromising medical condition (8), international travel (2—Algeria and Mali), and recreational water exposure (1). There were no fatalities, but 9 cryptosporidiosis cases were hospitalized.

Figure 6. Number of Cryptosporidiosis Reports by Week of Onset: Philadelphia, 2011, 2012 and 5-year Moving Average

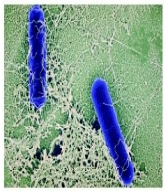


GIARDIASIS *(Giardia lamblia)*



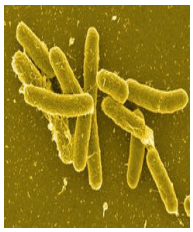
In 2012, 59 confirmed cases of giardiasis were reported among Philadelphia residents compared with 45 cases in 2011. Males accounted for 69% of cases. Cases ranged in age from 2 to 78 years with a median age of 33 years. There were no fatalities as a result of giardiasis, however, 10 cases were hospitalized (17%). Diarrhea was the most commonly reported symptom (97%), followed by nausea (29%), fever (27%), and vomiting (24%). Of the 45 cases with reported risk factors during their incubation period, 13 cases (29%) traveled or lived in a foreign country, with India and Mexico as the most common locations reported, and two (4%) traveled outside of Pennsylvania. Five (11%) reported recreational water exposure without foreign travel, and 13 cases (29%) reported animal contact without foreign travel. Five of the adult males interviewed identified as men who have sex with men (MSM).

INFANT BOTULISM



Infant botulism is a serious illness that is caused when the bacteria *Clostridium botulinum* grows inside a baby's gastrointestinal tract. In 2012, infant botulism was reported in two male infants less than three months old. Symptoms ranged from poor feeding and constipation to respiratory distress, dysphagia, and loss of head control. Both cases were hospitalized, were infected with type B *C. botulinum* toxin, received botulism antitoxin, and survived.

SALMONELLOSIS (*Salmonella* SPP.)



A total of 305 salmonellosis cases were reported in 2012 of which 287 (94%) were laboratory-confirmed and 18 were probable cases identified from epidemiologic links. The incidence rate of salmonellosis in 2012 was about 20 cases per 100,000 persons (305/1,547,607), which is comparable to the 2011 rate. US 2012 salmonellosis rates were lower at 15.7 cases/100,000 persons. Slightly over half (52%) of Philadelphia cases were male. The median age was 17 years with a range of 0-96 years. Disease occurence was highest in those under 1 year of age (43 infant cases). Although 2012 US data is not yet available, the age–specific rate of infant salmonellosis has traditionally been much higher in Philadelphia compared with the national rate, as seen in Figure 7. Thirty-seven percent of all cases were hospitalized, although there were no reported fatalities. Of the 287 laboratory-confirmed salmonellosis cases, *S.* Enteritidis and *S.* Typhimurium were the most common serotypes, responsible for 94 (33%) and 54 (19%) cases respectively.

In 2012, PDPH investigated a *Salmonella* outbreak which involved over 85 laboratory-confirmed cases, including cases from residents of Pennsylvania outside of Philadelphia, New Jersey, Delaware, New York, and Massachusetts. Philadelphia accounted for 29 laboratory-confirmed cases (and seven probable cases). The outbreak was associated with fresh produce from a catering facility in Philadelphia as well as a restaurant outside of Philadelphia. In 2012, there were 22 household clusters of *Salmonella* identified. Philadelphia also had five cases linked to a multi-state outbreak associated with raw scraped ground tuna product. In 2012, 31 cases (10%) reported turtle contact, an increase compared to the 6% of cases that reported turtle contact in 2011.

Antibiotic susceptibility testing was available for 248 (86%) of laboratory-confirmed cases. Fifteen percent (37/248) were ampicillin-resistant, 2% (4/229) were resistant to trimethoprim-sulfamethoxazole, and 4% (8/215) were ciprofloxacin-resistant (Table 5).

Figure 7. **Age-Specific Salmonellosis Rates: Philadelphia, 2003-2012**

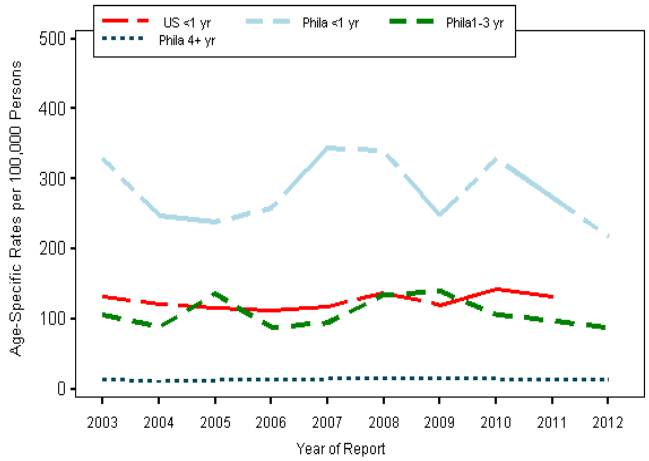
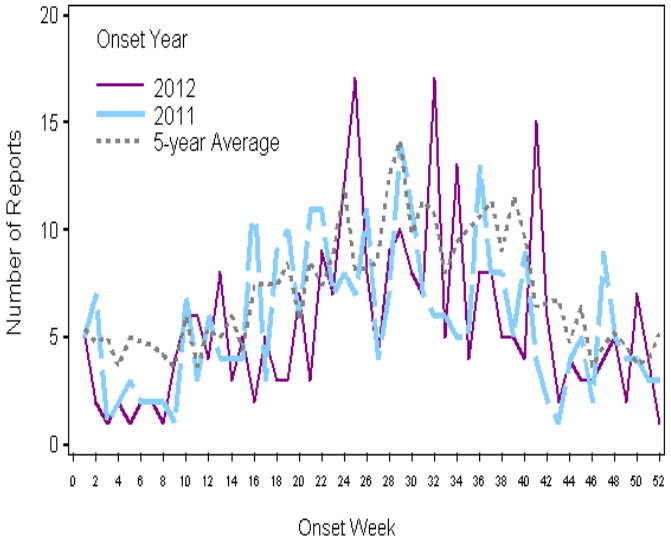
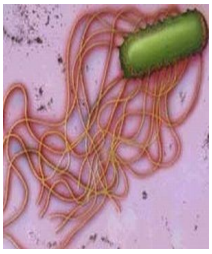


Figure 8. Number of Salmonellosis Reports by Week of Onset: Philadelphia, 2011, 2012 and 5-Year Moving Average

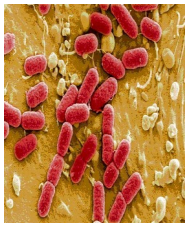


TYPHOID FEVER (*Salmonella enterica* SEROVAR TYPHI)



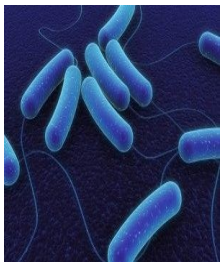
Typhoid fever is a potentially life-threatening illness characterized by sustained fever and abdominal pain. It is caused by the bacteria *Salmonella* Typhi (*Salmonella enterica* serovar Typhi, or *S*. Typhi). In 2012, two cases, a male and a female, were reported. The cases were confirmed by the isolation of *S*. Typhi from the stool or blood. Symptoms experienced were fever and diarrhea. Both cases were children less than 6 years of age who were exposed to the bacteria from an asymptomatic household carrier. Both cases were hospitalized and survived their illness.

SHIGA-TOXIN PRODUCING *Escherichia coli* (STEC)



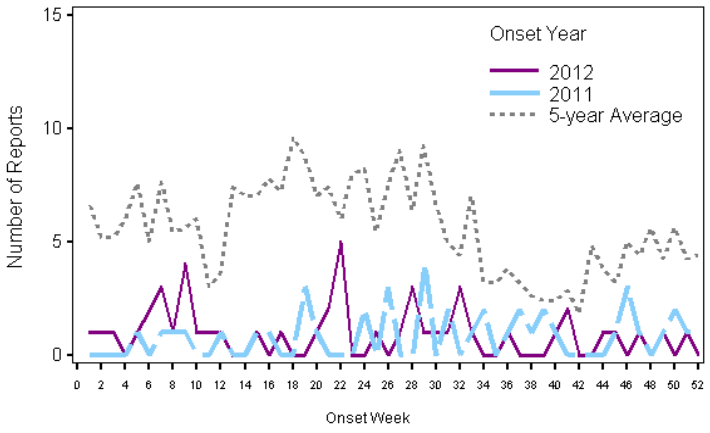
Twelve confirmed cases of STEC were reported in 2012 (9 were reported in 2011). *E. coli* O157:H7 was isolated from five cases, *E. coli* O103:H2 was isolated from two cases, *E. coli* O145:Nonmotile was isolated from one case, *E. coli* O26:H11 was isolated from one case, *E. coli* O5:Nonmotile was isolated from one case, and the two other cases were typed as *E. coli* non-O157, non-O103. Other than two family clusters that were identified, no epidemiological links were identified among the remaining cases. Seven (58%) cases were male and the median age was 19.5 years (range 1-82 years). All twelve cases reported experiencing diarrhea (6 had bloody diarrhea), two reported vomiting, five reported nausea, two had abdominal cramps, and two reported a fever. One case had hemolytic uremic syndrome (HUS). One death was associated with STEC infection, and three (25%) cases were hospitalized. Regarding potential risk exposures during the incubation period, 4 cases reported consumption of ground beef and one case reported international travel (Dominican Republic). No petting zoo exposure was reported.

SHIGELLOSIS (*Shigella* SPP.)



During 2012, PDPH received 48 reports of shigellosis, of which 45 (94%) were culture-confirmed, compared to 43 reports of shigellosis in 2011. Of the 45 culture-confirmed cases, 25 (56%) were identified as *S. sonnei* and 20 (44%) were identified as *S. flexneri*. Cases were 81% male with a median age of 31 years (range 3-79 years). Six cases reported international travel [Cambodia (2), England, Indonesia, Mexico, and Spain] during their incubation period. 75% of the *Shigella* isolates tested for ampicillin resistance were resistant (24/32) and 53% (16/30) showed resistance to trimethoprim-sulfamethoxazole (Table 5). No fatalities were reported, but 18 (38%) were hospitalized.

Figure 9. Number of Shigellosis Reports by Week of Onset: Philadelphia, 2011, 2012 and 5-Year Moving Average



Starting in late 2011 and continuing throughout 2012, two clusters of *S. sonnei* among adult men in Philadelphia were identified. Each of the two clusters had six cases with matching *Shigella* DNA fingerprints. Three of the six men in one cluster and two of the six men in the other cluster identified as men who have sex with men (MSM).

Table 5. Antibiotic Resistance of Selected Enteric Pathogens: Philadelphia, 2012

Pathogen	Antibiotics Tested	Total Tested	Resistant		Intermediate	
			N	(%)	N	(%)
Campylobacter	Ciprofloxacin	28	7	(25%)	0	(0)
	Erythromycin	25	0	(0)	0	(0)
	Trimethoprim-Sulfamethoxazole	2	0	(0)	0	(0)
Salmonella	Ampicillin	248	37	(15%)	0	(0)
	Ceftriaxone	85	4	(5%)	3	(4%)
	Ciprofloxacin	215	8	(4%)	0	(0)
	Erythromycin	0	0	(0)	0	(0)
	Trimethoprim-Sulfamethoxazole	229	4	(2%)	1	(0)
Shigella	Ampicillin	36	20	(56%)	0	(0)
	Ceftriaxone	13	01	(8)	0	(0)
	Ciprofloxacin	31	0	(0)	0	(0)
	Erythromycin	0	0	(0)	0	(0)
	Trimethoprim-Sulfamethoxazole	42	27	(64%)	1	(2%)

Immunizations and Vaccine-Preventable Diseases

KIDS Plus Immunization Information System (IIS)

The KIDS Plus Immunization Information System (IIS) is a secure and confidential system that collects immunization information for Philadelphians of all ages. KIDS Plus IIS has been collecting information for health care providers since 1993. As of December 31, 2012, KIDS Plus IIS contained data for 845,315 Philadelphia residents and 9,570,316 doses of vaccine.

In January 2012, the Immunization Program launched an upgraded version of KIDS Plus IIS, which has new functionalities that benefit provider offices in their immunization practices. The KIDS Plus IIS upgrades allow doctors to easily access information about their practice, and created new ways for providers to populate the system's data through the nationally standardized HL7 interface. These upgrades make KIDS Plus IIS more secure, efficient and reliable. PDPH also continues to work with providers to attain Centers for Medicaid and Medicare Services (CMS) meaningful use requirements.

Childhood Vaccines

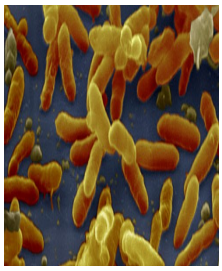
Through the federal Vaccines for Children (VFC) program, the Immunization Program provides vaccines at no cost to nearly 230 health care offices in Philadelphia annually. A child is eligible for the VFC Program if he or she is younger than 19 years of age and is either Medicaid-eligible, uninsured, underinsured, American Indian or Alaska Native. In 2012, the Immunization Program shipped over 620,000 doses of vaccine to Philadelphia County providers and clinics, valued at over $25 million. The Immunization Program, with grant support from the Centers for Disease Control and Prevention (CDC), also initiated special programs aimed at improving vaccination coverage rates among adolescents.

Adult Vaccines

A number of vaccines are recommended for adults, with indications determined by health condition, age, lifestyle/behavior, and occupation. The Vaccines for Adults at Risk (VFAAR) program provides vaccines to select health care clinics that serve adults at high-risk for vaccine preventable diseases. In 2012, PDPH was able to expand the VFAAR program by offering adult vaccines to new medical clinics and now has 58 clinics enrolled, making available 14 types of adult vaccines. In 2012, the VFAAR program partnered with community-based organizations to target uninsured, high-risk, and hard to reach populations to provide eligible patients with immunizations at community-based facilities.

For more information on the Philadelphia Immunization Program, please visit: http://kids.phila.gov/

PERTUSSIS (*Bordetella pertussis*)



There were a total of 464 pertussis reports investigated by PDPH in 2012, which resulted in 228 confirmed and 40 probable cases, yielding a rate of 17.6 cases per 100,000 population. The highest rate of disease was among infants (Figure 10). The majority of the cases were female (165/268 [62%]). Symptom information was available for all 268 confirmed and probable cases. The most commonly reported symptoms included paroxysmal cough (239/268 [89%]), post-tussive vomiting (158/268 [59%]), whoop (105/268 [39%]), and apnea (100/268 [37%]). Almost all cases (259/268 [97%]) had documented cough lasting ≥2 weeks. Forty-seven cases were hospitalized, 41 of which were <1 year old. There was one fatal case: a 3-month-old, unvaccinated infant with symptom onset at the end of December 2011. Among the confirmed cases, 193/228 (85%) had appropriate laboratory testing (pertussis PCR or culture), while the remainder of confirmed cases met the clinical case definition and had contact to another case.

Thirty-six clusters were identified in 2012. All involved disease transmission in a household or family. On average, each household cluster involved two individuals (range: two to four individuals).

Of the 104 cases under 5 years of age, 18 (17%) were underage for vaccine and 57 (55%) were up-to-date (Table 6). Of the 104 cases between 5 and 18 years with vaccination information, 86 (83%) were up-to-date. Sufficient vaccination information was not available to determine the number of cases 18 years and older that were appropriately vaccinated.

Figure 10. Rates of Pertussis per 100,000 Population by Age and Gender: Philadelphia, 2012

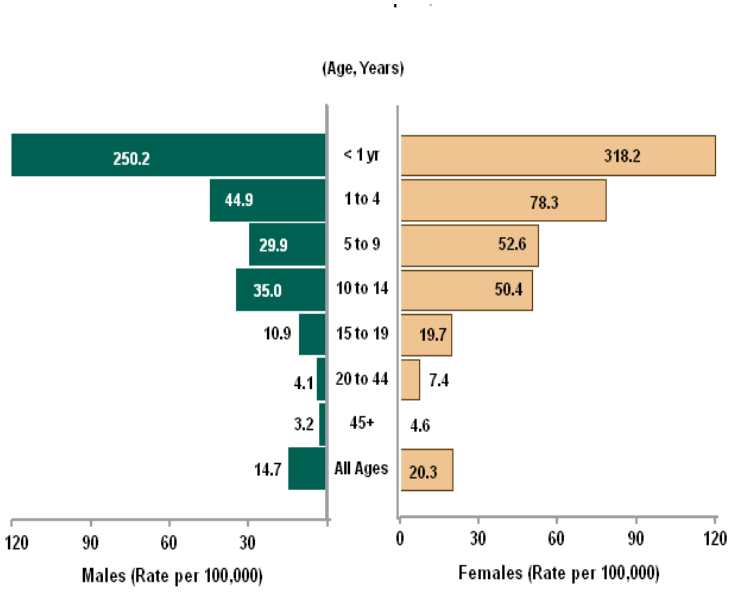
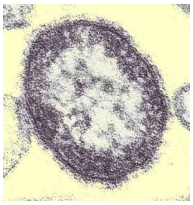


Table 6. Doses of Pertussis-containing Vaccine Given to Pertussis Cases by Age

		# of Pertussis-Containing Vaccine Doses Received Prior to Illness				
Age in Months	**# in Age Group**	**0**	**1**	**2**	**3**	**4+**
Under 2	19	18	1	0	0	0
2—5	32	13	15	4	0	0
6—11	5	0	1	2	2	0
12—59	48	6	1	1	10	30

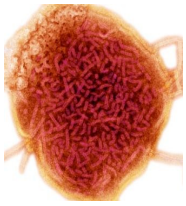
MEASLES



There were two confirmed cases of measles in Philadelphia in 2012. Additionally, there were two reports of individuals with suspected measles investigated; however, both were found to not have the disease. The cases were 1-year-old and 28-years-old. The 28-year-old case had a history of one dose of measles, mumps, and rubella (MMR) vaccine. The 1-year-old case was unvaccinated, due to travel.

Both cases were acquired internationally, in Pakistan and Thailand. Genotyping results performed at CDC for the 28-year-old case matched a common genotype, D8, found in Thailand. The most recent cases of measles in Philadelphia prior to 2012 were three travel-related cases (India in 2009, Mongolia in 2001, and Nigeria in 1998) and seven cases in 1996, six of whom were associated with a homeless shelter.

MUMPS

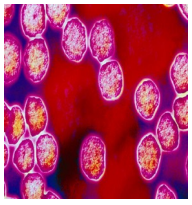


In 2012, DDC investigated 32 reports of mumps infections. Per CDC mumps case definition, cases must present with parotitis, or other clinically compatible symptoms, and the following criteria:

- Confirmed cases must test PCR positive for mumps and/or have association with another person(s) with confirmed mumps infection
- Probable cases must have at least 2 days of parotitis and a positive serum anti-mumps immunoglobulin M (IgM) antibody or linkage to another probable or confirmed case or outbreak of mumps.
- Suspected mumps cases have no confirmatory laboratory testing, or have a positive lab result with no mumps clinical symptoms.

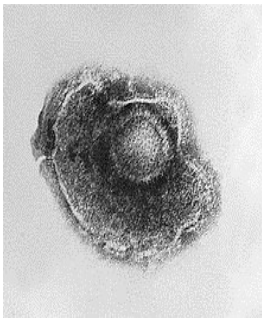
DDC identified 2 (6%) probable and 2 (6%) suspect cases. Both probable cases were under the age of 1 year and therefore had not received Measles, Mumps, and Rubella vaccine (MMR). One probable case, a 6-month-old infant, was hospitalized. There were no clusters identified.

RUBELLA



Philadelphia had no confirmed cases of rubella in 2012. The last two cases of rubella infection recorded for Philadelphia occurred in 1998 and 1996.

VARICELLA-ZOSTER VIRUS



Varicella Vaccine Coverage

According to KIDS Plus IIS, varicella (chickenpox) vaccination coverage rates ranged from 69% to 87% for children 1 to 12 years of age in Philadelphia during 2012 (Figure 11). Since fall 2011, school entry regulations in Philadelphia required two doses of varicella vaccine for all children in all grades (Kindergarten through 12th). These requirements are essential for maintaining high single-dose varicella vaccination coverage rates and increasing 2-dose coverage rates among children in Philadelphia.

Varicella

Beginning in September 2012, PDPH re-established active surveillance in schools and hospitals in order to monitor the impact of the 2-dose varicella vaccination program on school-aged children. Through a combination of passive and active surveillance, 118 cases of varicella (43 confirmed and 75 probable) were reported to PDPH in 2012, which was 45% lower than the number of cases reported in 2010 and 2011 (261 and 262, respectively). The lower levels of varicella incidence in recent years may be attributed to increasing 2-dose varicella vaccination coverage.

In 2012, the median age for varicella cases was 7 years (range: 4 months-58 years). The majority of cases (68, 58%) had been vaccinated, including 41 (6 confirmed and 35 probable) children aged 5 to 16 years who developed breakthrough infections >42 days after receiving a 2-dose of varicella vaccine (Figure 12). Four varicella cases were hospitalized during 2012. Three were adults (one unvaccinated and two unknown vaccination status), and the other was a 2-year-old child who had 1-dose breakthrough varicella along with Meningococcal meningitis. No varicella-related deaths were reported.

During fall 2012, an outbreak of six varicella cases occurred in a school, the first school outbreak in Philadelphia since 2008. Half of the outbreak-related cases (3/6) were unvaccinated or 1-dose varicella vaccine recipients. Two-dose varicella vaccine effectiveness during the outbreak was high (99%). In addition, a cluster of three adult varicella cases aged 22 to 36 years occurred among inmates in the Philadelphia Prison System.

Herpes zoster

Reactivation of varicella- zoster virus later in life causes herpes zoster (shingles), a localized painful rash. In 2012, 108 cases of herpes zoster (56 confirmed and 52 probable) were reported to PDPH. The median age for herpes zoster cases was 54 years (range: 4 years- 96 years). Nine cases <20 years of age were previously vaccinated with varicella vaccine and one adult case was previously vaccinated with shingles vaccine. Twenty-three cases were hospitalized including six cases with VZV encephalitis or meningitis.

Figure 11. Varicella Vaccination Coverage Among Children by Age and Dosage: Philadelphia, 2012

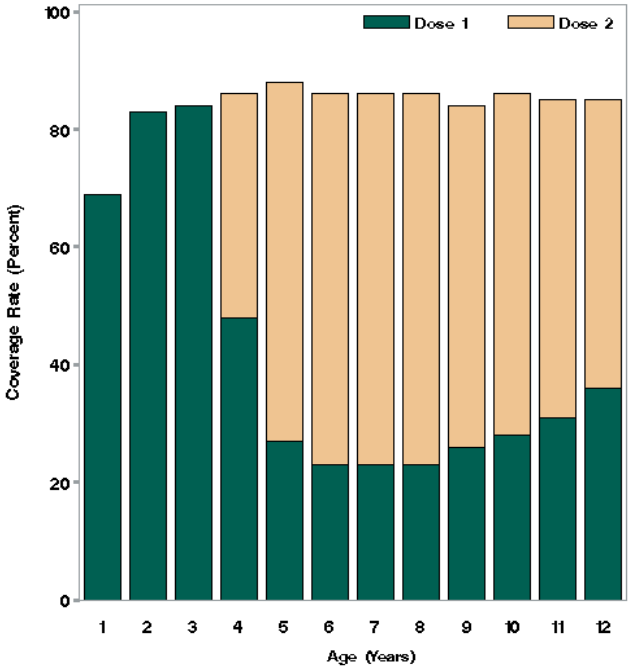
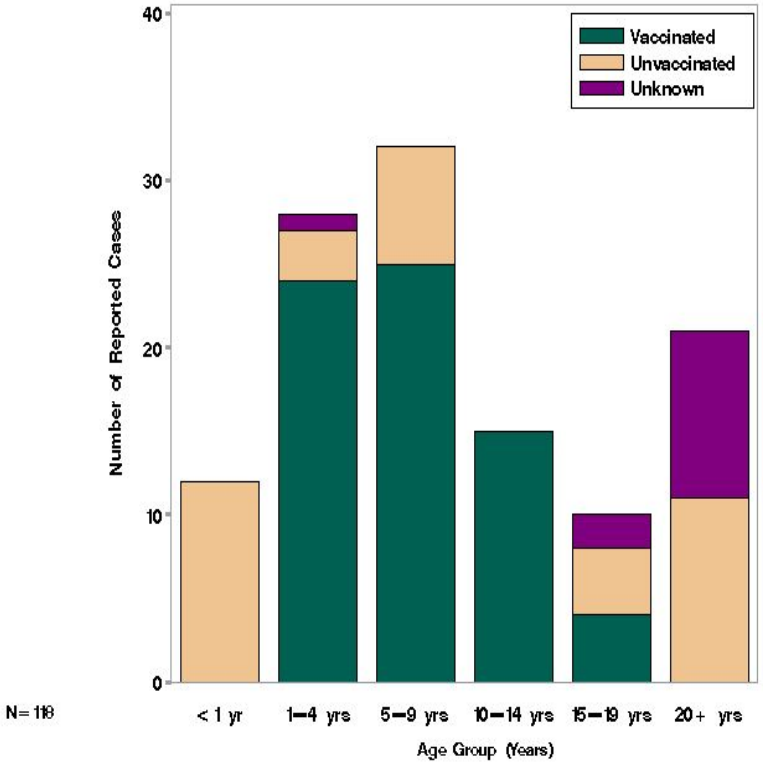
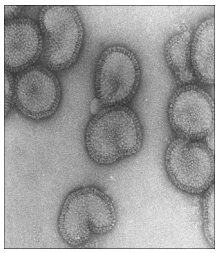


Figure 12. Citywide Varicella Reports by Age Group and Varicella Vaccination Status: Philadelphia, 2012



Respiratory Infections

Influenza and Respiratory Virus Surveillance (2011-2012 Season)



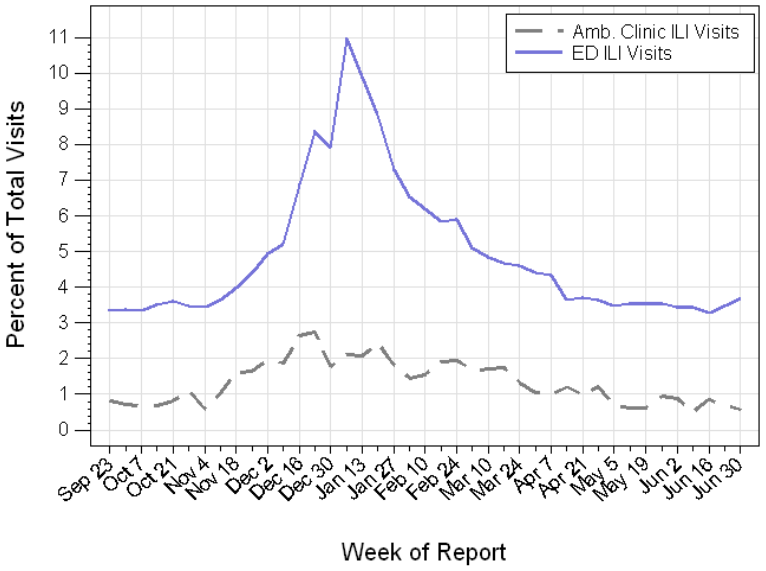
Influenza-like Illness Surveillance

PDPH maintains an active surveillance system that monitors chief complaints related to emergency department (ED) visits from 19 local hospitals. De-identified data from hospital triage logs are received daily and subsequently analyzed for influenza-like illness and other syndromes of interest.

Much like PDPH's emergency department surveillance, de-identified data from several pediatric ambulatory clinics in the Philadelphia area are also received and analyzed in order for the detection of influenza-like illness. These data are categorized by reason of visit and measured temperature to determine the proportion of influenza-like illness (measured fever ≥ 100°F, cough and/or sore throat [in the absence of a known cause other than influenza]) present at these facilities on a weekly basis. Figure 13 depicts both surveillance systems, and plots the percentage of influenza-like illness by week of visit. Significant increases of influenza-like illnesses began occurring in mid-December for both types of institutions, peaking in early January for emergency departments (ED) while roughly accounting for 12% of all ED visits. This represented a shift in peak activity of nearly 4 weeks prior to historical peaks.

Respiratory Virus Surveillance

Figure 13. Philadelphia Emergency Department (ED) and Pediatric Ambulatory Clinic Surveillance for Influenza-like Illness through June 2012



DDC conducts active, laboratory-based surveillance of circulating respiratory viruses to monitor for influenza and other viral respiratory illnesses in Philadelphia. Seven hospital laboratories participate in this surveillance system, providing aggregate weekly counts of influenza. Five of the laboratories also provide data on respiratory syncytial virus (RSV), parainfluenza, and adenovirus, while 2 hospitals submit data regarding rhinovirus detections. Test methods vary and may include rapid antigen tests, viral culture, and PCR.

The 2012-2013 respiratory virus season produced a typical RSV season, with a November onset and a peak in the early winter. Rhinoviruses spread throughout the year with only minor declines in activity during the winter (Figure 14). In concert with influenza-like illness trends, the onset of laboratory-confirmed influenza A began in December, peaking in mid-January. The onset was also earlier than previous seasonal influenza A activity.

Severe Morbidity Surveillance of Influenza

Since the influenza pandemic of 2009, DDC has conducted surveillance of mortality and severe morbidity of influenza, including hospitalization and admission to intensive care units. Reported cases of severe morbidity illustrate that the number of hospitalizations increased significantly during the 2012-2013 season (1,186 cases versus 117 cases from the previous season). This is the highest number of hospitalized influenza cases reported since PDPH began tracking influenza in 2009. In addition to hospitalizations, seventeen influenza associated deaths occurred this season, all of which occurred in individuals 18 years and older. A greater proportion of cases reported this season were in the elderly, illustrating that persons 65 years and older were more severely affected this season than in recent seasons (Figure 16).

Vaccine Recommendations
Seasonal Influenza Vaccine for 2012-2013

Seasonal influenza vaccine (available as an injection, either intramuscularly or intradermally, or inactivated influenza virus or as a nasal spray of a live attenuated virus) remains the most important measure for preventing influenza and influenza-related complications, including death. The 2012-2013 seasonal influenza vaccine contained an A/California/7/2009 (H1N1) pandemic09-like virus, an A/Victoria/361/2011 (H3N2)-like virus, and a B/Wisconsin/1/2010-like virus. Everyone 6 months of age and older were recommended for vaccination, while traditional high-risk groups, including children aged 6-59 months, adults 50 years or older, immunocompromised or chronically ill individuals, pregnant women, and those living or working in close contact with high-risk person, were strongly encouraged to receive the vaccine. In Philadelphia, seasonal influenza vaccination was conducted by DDC in cooperation with the Federally Qualified Health Centers (FQHCs), health clinics, local nursing schools, and other volunteer providers. Over 4,000 doses were administered by the Community-Based Influenza Vaccine Campaign from October to December 2012.

Figure 14. Respiratory Agents by Week (Reports from 6 Hospital Laboratories): Philadelphia, 2011-2012 Season

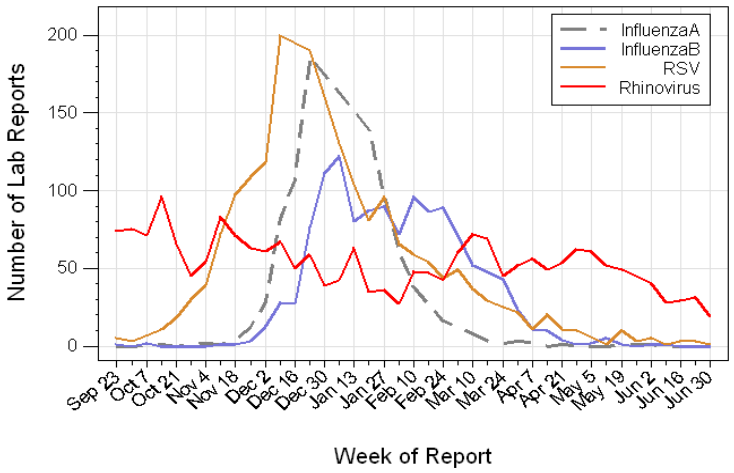


Figure 15. Laboratory Confirmed Influenza A Reports from Select Hospital Labs by Week of Report: Philadelphia, 2008/09 to 2011/12 Influenza Seasons

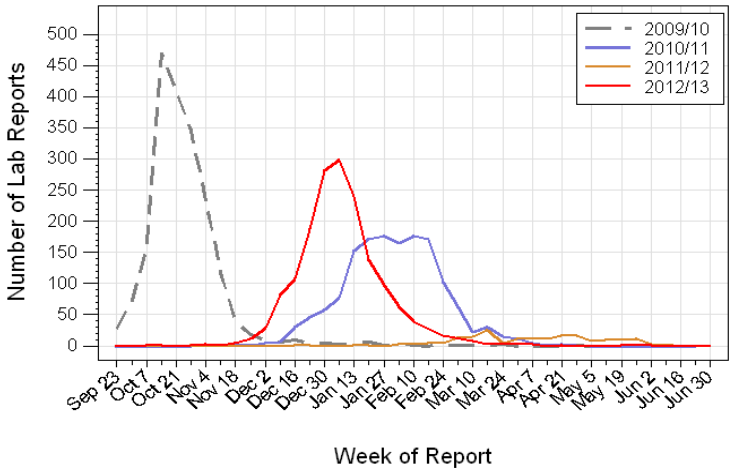
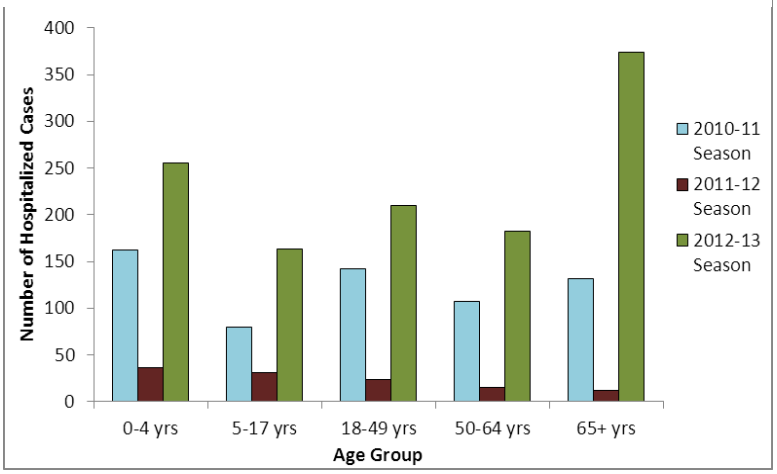
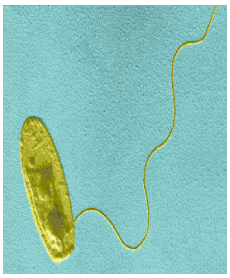


Figure 16. Philadelphia Hospitalized Influenza Cases by Age Group and Season

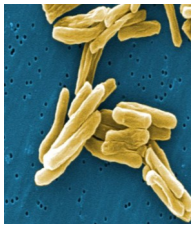


LEGIONELLOSIS *(Legionella pneumophila)*



In 2012, there were 28 confirmed and one suspect case of legionellosis in Philadelphia, compared with 64 confirmed cases in 2011. These cases appeared sporadically throughout the city, with the exception of two cases that had symptom onset within a single incubation period of one another and resided at the same apartment complex. Sixty-nine percent (20/29) of cases were male. The mean age was 60 years (range 36 to 82 years). *L. pneumophila* was identified via urine antigen testing in 28/29 (97%) cases and by direct fluorescent antibody staining in one (3%) case. Nearly 45% (13/29) of cases were smokers. Seventy-two percent (21/29) of cases had some type of underlying condition, seven cases were immunocompromised or had cancer and seven cases had diabetes mellitus.

TUBERCULOSIS *(Mycobacterium tuberculosis)*



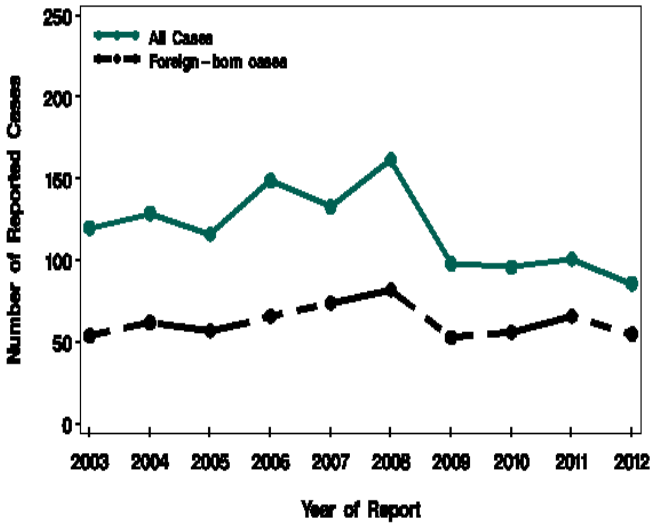
In 2012, Philadelphia reported 86 confirmed TB cases, a decrease of 15% from the prior year when 101 cases were reported. This continues a decreasing trend in the number of TB cases in Philadelphia (Figure 17).

The overall TB case rate for 2012 was approximately 5.6 cases per 100,000 population; this is above the Healthy People 2010 Objective of no more than 3.5 per 100,000 population.

Drug Resistant TB

TB culture isolates were available for 78% (67/86) of the TB cases reported during 2012. Fourteen percent (9/65) of all cases with susceptibility testing performed were resistant to at least one TB drug. None of the cases were multi-drug resistant (MDR), which is defined as having a strain of TB resistant to both isoniazid and rifampin. Nearly half (44%) of the drug resistant cases were isoniazid mono-resistant. The continuing prevalence of drug resistance represents a challenge in clinical case management of TB in Philadelphia, prompting new strategies for treatment regimens for both cases and their contacts.

Figure 17. Reported Cases of Tuberculosis by Nationality: Philadelphia, 2003 to 2012



Populations at High Risk for TB

In 2012, sixty-three percent (54/86) of reported TB cases were among foreign-born persons. TB cases among the foreign born first exceeded 50% of the reported number of cases in CY 2007 and has remained so each year since.

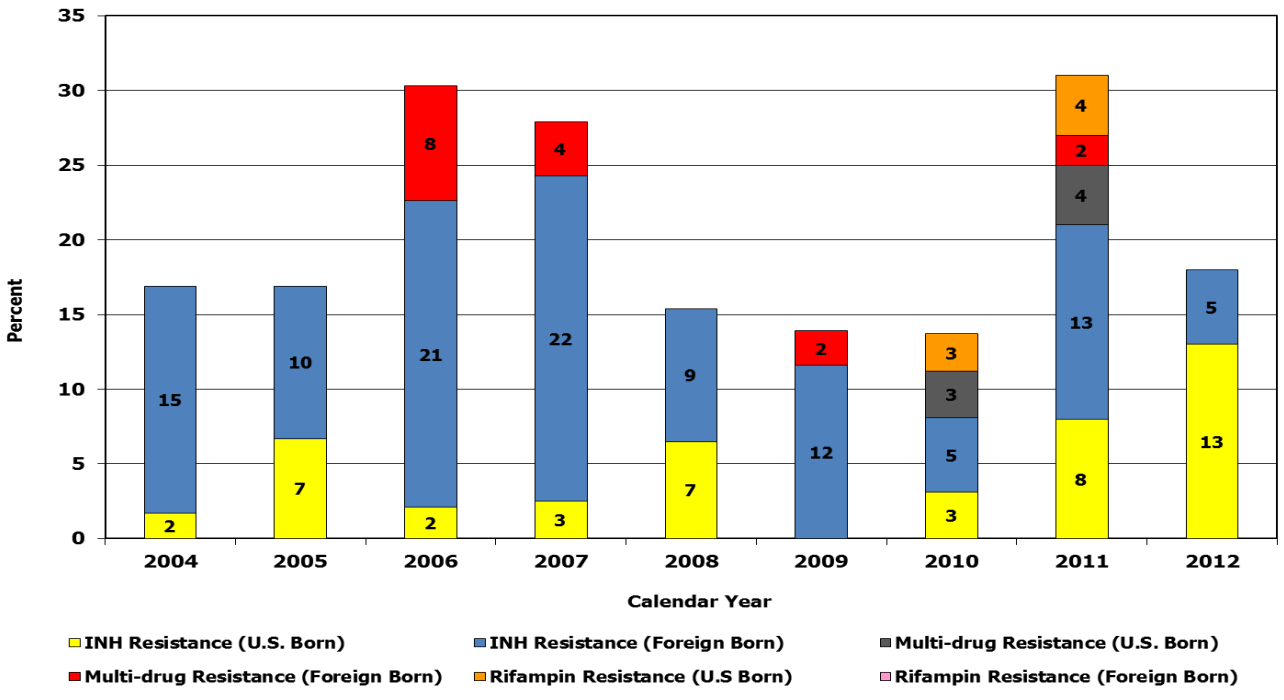
TB cases among the foreign-born decreased by over 18% from 66 cases in 2011 to 54 in 2012, however foreign-born TB cases now represents a case rate of approximately 28.0/100,000 in Philadelphia. The 54-foreign-born TB cases reported in 2012 originated from 27 different countries and all six World Health Organization (WHO) regions. Western Pacific countries represented over 46% (25/54) of the foreign-born cases, with Vietnam (12), China (4) and the Philippines (4) indicated most often as the country of origin. These numbers illustrate the changing profile of TB in Philadelphia.

Tuberculosis in children, less than 5 years of age, declined from two cases in 2011 to one case in 2012. Since tuberculosis disease in children indicates recently acquired infection and transmission, these data are of sentinel importance. Source contact investigations are initiated for all cases in children less than 5 years of age.

The TB Control Program continues to pursue HIV status information on all reported TB cases. In 2012, 84% (72/86) of confirmed cases had a documented HIV results. Of these, 10 (12%) were positive 62 (72%) were negative, 3 (3%) refused testing, and 9 (10%) were not offered testing at the time of diagnosis.

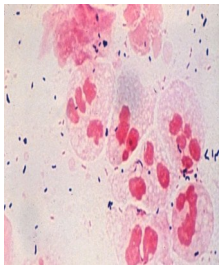
Additionally, nine (11%) patients gave a history of injected drug use. At the time of diagnosis, three patients were homeless (3%), three (3%) resided in long-term care (LTC) facilities and two (2%) were identified in correctional facilities. Targeted testing programs in LTC and correctional facilities and throughout the homeless shelter network in Philadelphia have lead to early detection and prevention of TB cases in these populations.

Figure 18. Proportion of Drug Resistance in Positive Culture U.S. and Foreign Born Cases with Drug Sensitivity Testing: 2004-2012



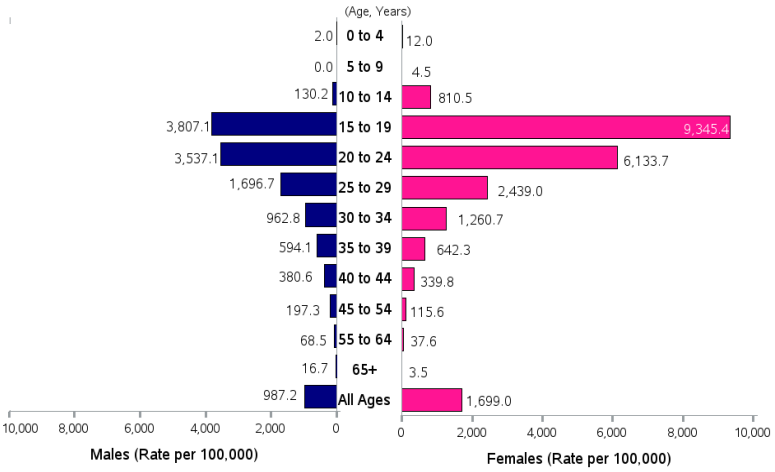
Sexually Transmitted Diseases

Chlamydia (*Chlamydia trachomatis*)

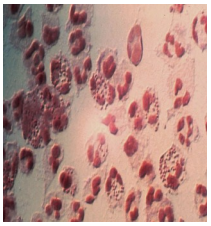


In 2012, there were 20,803 positive *Chlamydia trachomatis* results reported to PDPH, including 11,627 (56%) performed as part of the PDPH STD citywide screening programs. Rates of reported chlamydial infection in 2012 continue to be much higher in women than in men and are highest in 15-19 year olds, as can be seen in Figure 19. Positive chlamydia reports among males increased 4% between 2011 and 2012 (7,106 cases in 2012 compared to 6,865 cases in 2011). At the same time, reported chlamydial infection among women increased by less than 1% (13,697 cases in 2012 compared to 13,606 cases in 2011).

Figure 19. Rates of Chlamydia per 100,000 Population by Age and Gender: Philadelphia, 2012

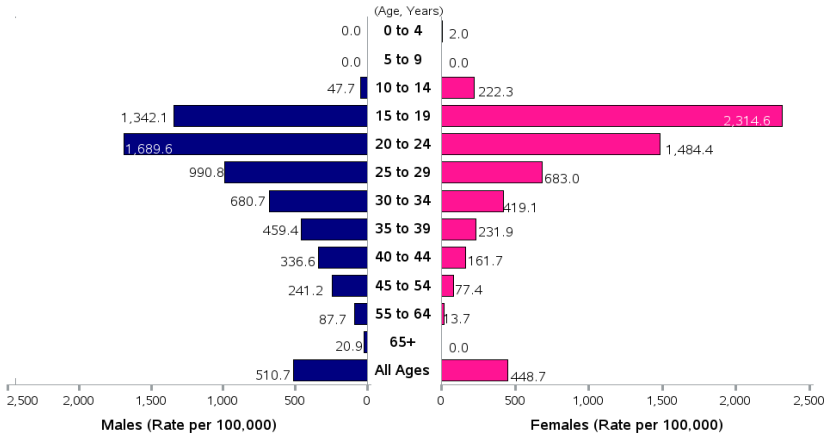


Gonorrhea (*Neisseria gonorrhoeae*)

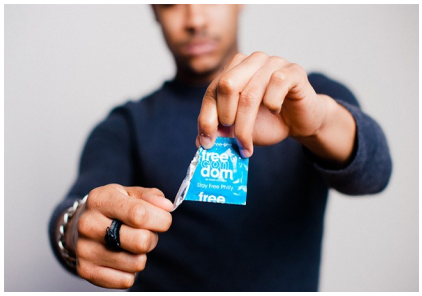


In 2012, 7,293 cases of gonorrhea were reported in Philadelphia, a 8% (+532 cases) increase from the 6,761 cases reported in 2011 (Figure 20). Every year, DDC submits approximately 300 *N. gonorrhoeae* isolates from male STD clinic attendees to the CDC Gonococcal Isolate Surveillance Project (GISP) for antibiotic susceptibility testing. To date, while gonococcal resistance to ceftriaxone has been documented and reported from Japan there have been no resistant cases identified in the United States. Of the 318 isolates submitted from Philadelphia, one (0.3%) was found to have an increased Minimum Inhibitory Concentration (MIC) to cefixime and none to ceftriaxone, but none were resistant to these antibiotics. In accordance with the most recent CDC Guidelines, treatment for uncomplicated urogenital, rectal, and pharyngeal GC is now dual therapy with 250 mg ceftriaxone IM plus either 1 gram azithromycin orally as a single dose or doxycycline 100 mg orally twice daily for 7 days.

Figure 20. Rates of Gonorrhea per 100,000 Population by Age and Gender, Philadelphia, 2012

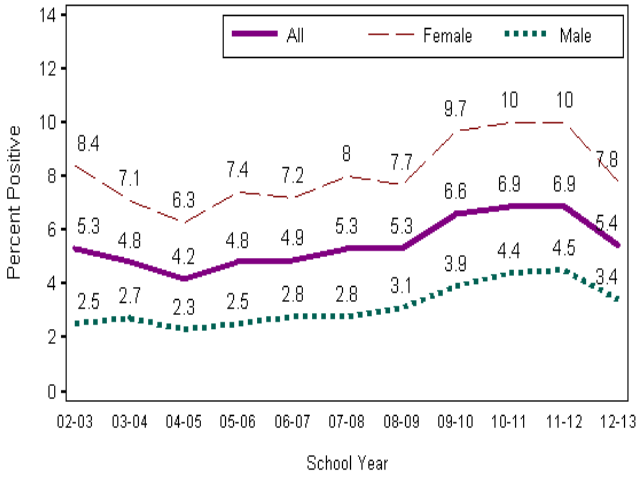


Chlamydia and Gonorrhea Screening in Philadelphia High Schools



Since January 2003, PDPH and the Philadelphia School District have collaborated to offer voluntary chlamydia and gonorrhea screening in all public high schools. After screening for 11 consecutive school years, 162,260 screening tests have been completed resulting in 8,719 positive tests for either or both of these diseases (through June 2013). Treatment has been confirmed for approximately 8,489 (97%) of the students with positive results. Additional school screening is offered at select charter schools and within the existing Health Resource Centers in certain public high schools.

Figure 21. Percent of Philadelphia Public High School Students Testing Positive for CT and/or GC by Gender and School Year



Public High School Screening Program

During the 2012-2013 school year, the three programs (public school screening, charter school screening, and HRC testing) identified 632 students infected with chlamydia, gonorrhea, or both. Through June 2013, 600 (95%) students have documented treatment for these infections.

Syphilis (*Treponema pallidum*)

P & S Syphilis Surveillance in Philadelphia

In Philadelphia, 269 cases of infectious syphilis were reported in 2012, an increase of 30% (+62 cases) when compared to the 207 cases reported in 2011. Seventy-five percent of P&S syphilis cases occurred in individuals identifying as Black. As it has been since 2000, in 2012 P&S syphilis was also disproportionately found among males (92%, Figure 22). Of the 247 P&S cases among males in 2012, most (179, 73%) were men who reported having sex with men (MSM). Among the 179 MSM with P&S syphilis, 175 disclosed their HIV status – 121 (69%) were HIV positive. The number of cases reported among females remained the same in 2012 (N=22) compared to 2011; all of these cases were reported in females of childbearing age (15-40 years).

Early Latent Syphilis Surveillance in Philadelphia

There were 261 cases of early latent syphilis reported in 2012, a 8% increase from the 242 cases reported in 2011. Most early latent cases were male (86%, Figure 23).

Congenital Syphilis

Subsequent to changes in the case definition of congenital syphilis in 1990 and a peak of 301 cases in 1991, the number of reports of congenital syphilis has greatly decreased (Figure 24). However, between 2007 and 2012, PDPH received 29 case reports (nine in 2007, seven in 2008, four in 2010, four in 2011, five in 2012) meeting the surveillance case definition for congenital syphilis. In the first three months of 2013, no cases of congenital syphilis have been received.

Adequate prenatal care, which includes routine screening and treatment of syphilis, clearly plays a major role in preventing congenital syphilis. PDPH currently recommends that all pregnant women without a history of adequate prenatal care who present to an ED should be tested for syphilis.

Figure 22. Rates of Primary and Secondary Syphilis per 100,000 Population by Age and Gender: Philadelphia, 2012

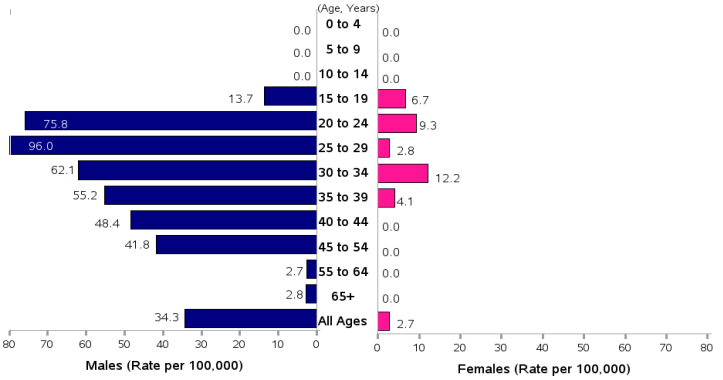


Figure 23. Rates of Early Latent Syphilis per 100,000 Population by Age and Gender: Philadelphia, 2012

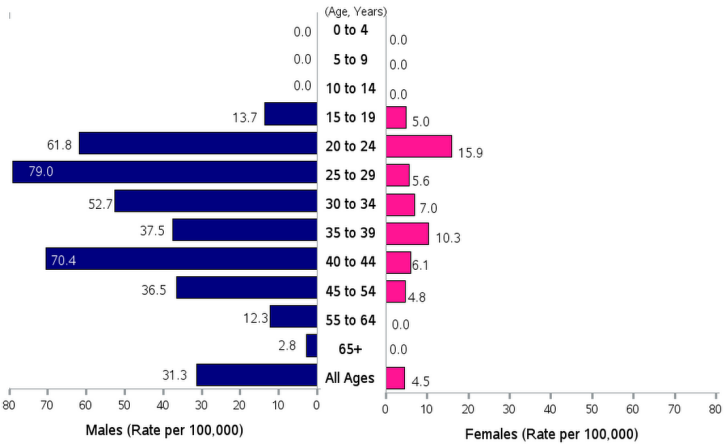
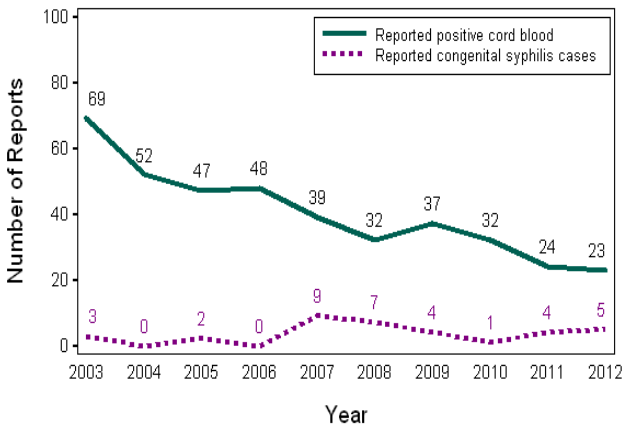
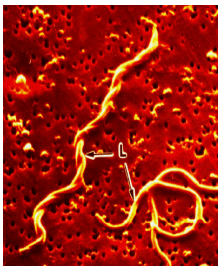


Figure 24. Reported Cases of Congenital Syphilis and Positive Cord Blood Tests: Philadelphia, 2003 to 2012



Vector-borne Diseases

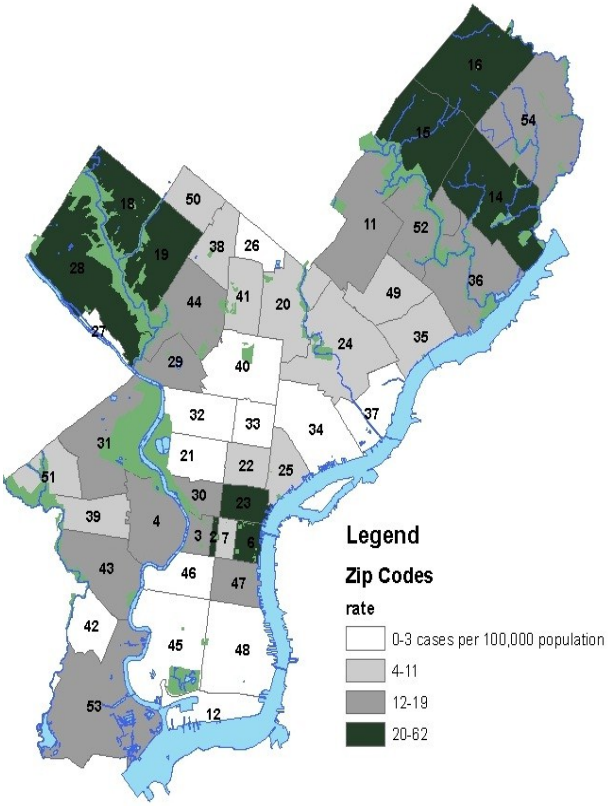
Lyme Disease *(Borrelia burgdorferi)*



CHANGE IN CDC CASE DEFINITION:

In 2008, CDC adopted a new case definition. A case of erythema migrans (EM) with either laboratory evidence of infection (Lyme IgG immunoblot or *B. burgdorferi* culture) or known exposure is considered a confirmed case. While Lyme IgM immunoblot results are not reliable to determine late -stage Lyme disease, individuals with a late-stage clinical manifestation and Lyme IgG immunoblot may also be classified as confirmed cases. Probable cases are determined by laboratory criteria and physician diagnosis. A case is deemed suspect when laboratory evidence of infection exists without clinical information.

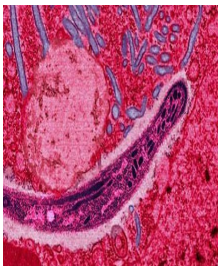
Figure 25. Rates of Lyme Disease by ZIP code: Philadelphia, 2012



In 2012, 780 unique individuals were reported as suspected Lyme disease cases. Upon investigation 191 reports fit the CDC case definition, 106 (56%) were confirmed cases, 25 (13%) were probable cases, and 60 (31%) were suspect cases. Lyme disease cases occurred among residents of all ages with the median age being 31 years (range: 22 months-82 years). A slightly higher proportion of cases were male than female (54% vs. 46%). Among the 106 confirmed cases, 63 (59%) had erythema migrans. The other 43 (41%) confirmed cases had IgG positive Immunoblot results and a late manifestation of Lyme disease: arthritis (37, 86%), Bell's palsy (2, 5%), 2° or 3° atrioventricular blocks (1, 2%), or ≥2 of the previously mentioned complications or lymphocytic meningitis (3, 7%).

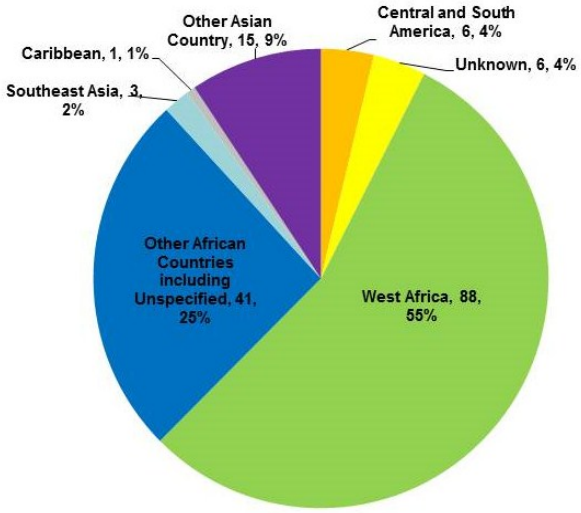
The number of Lyme disease cases reported in 2012 was 35% lower than the median annual case count in Philadelphia from 2008 through 2011 (295, [range: 237-358]). It is unclear whether this decline is a result of year to year variation in case counts or a true decline in incidence. Similar to national trends, the greatest proportions of Lyme disease cases in 2012 were received during June and July, which coincides with increased outdoor activity and potential exposure to *B. burgdorferi*-infected tick nymphs. Lyme disease incidence continued to be highest the northeast and northwest areas of the city that border two of the city's major parks, Wissahickon River Valley and Pennypack (Figure 25).

MALARIA (*Plasmodia* SPP.)



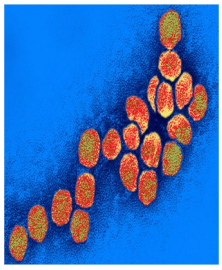
In 2012, 13 confirmed cases of malaria were reported to PDPH. Over two-thirds (9, 69%) of the malaria cases were male. The median age was 45 years (range: 8 years-65 years). Among the 12 (92%) cases with species identification performed, all had evidence of *Plasmodium falciparum* except for one case with *P. vivax* identified. Prior to the onset of symptoms, 12 confirmed cases reported travel to or recent arrival in the United States from malaria-endemic countries and only 6 (50%) reported receipt of malaria chemoprophylaxis prior to travel. The remaining case had an uncertain travel history. Consistent with trends from the previous decade (Figure 26), the majority of malaria cases (10, 77%) from 2012 likely acquired infection in West African countries.

Figure 26. Countries Traveled by Malaria Cases: Philadelphia, 2002-2012



n = 173

WEST NILE VIRUS

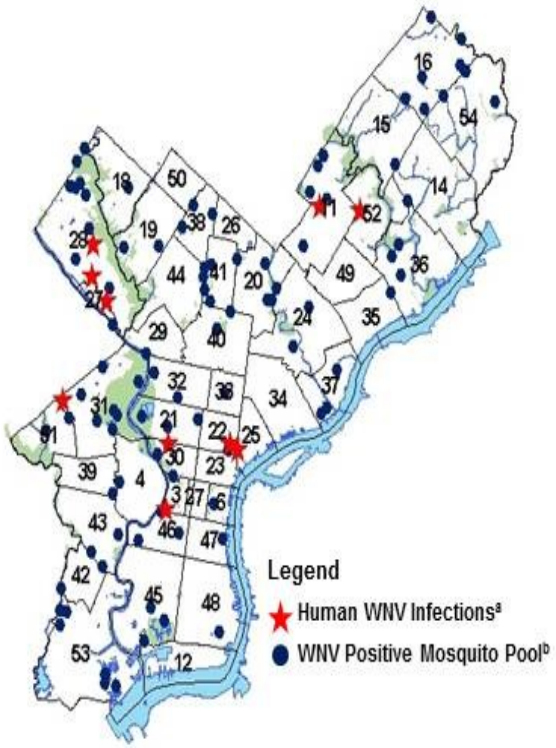


WNV prevention necessitates a close partnership between DDC and the PDPH Environmental Health Services (EHS) Vector Control Program. EHS performs surveillance for WNV in mosquitoes, as well as targeted treatment of mosquito pools, which is the primary means of reducing WNV transmission. DDC also notifies EHS when a human infection is identified, so EHS may initiate control activities in the residential area where the case lives.

From April through October 2012, 146 sampled mosquito pools in locations throughout the city tested positive for WNV (Figure 27). The mosquito pool positivity rate in 2012 was the second highest on record (18%) and only lower than the rate from 2010 (24%), another peak season for WNV activity (13 symptomatic cases). During the 2012 season, the EHS program performed 134 larval control events and treated 49,446 catch basins (storm-water sewers) with larvicide in order to kill mosquito larvae. EHS also conducted 41 adult-focused treatments including barrier treatments for control and ultra low volume spray events.

The current case definition for human WNV infection includes both neuroinvasive (encephalitis, meningitis, and acute flaccid paralysis) and non-neuroinvasive (WNV fever) disease. In 2012, 2,873 neuroinvasive

Figure 27. West Nile Virus (WNV)— WNV Positive Mosquito Sampling Sites: Philadelphia, 2012



[a]Includes symptomatic cases and viremic blood donors.
[b]30 sites with 2—7 positive pools identified.

and 2,801 non-neuroinvasive cases were reported nationally, of which 286 infections resulted in death. One-third (1,868, 33%) of the WNV cases from 2012 occurred among residents of Texas.

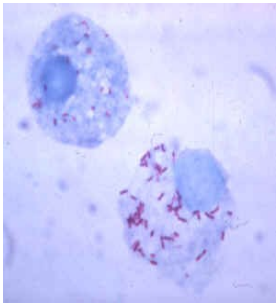
In Philadelphia, the 2012 WNV season was the 3rd most severe season for human infections since surveillance began in 2001. Nine symptomatic WNV infections (6 neuroinvasive and 3 WNV Fever cases) occurred among city residents (Figure 27). Median age of the WNV cases was 72 years (range: 56-85 years) and one-third were female. All cases but one were hospitalized. Two neuroinvasive cases resulted in death; both were >80 years of age with illness onset in late September.

Three residents aged 28 to 75 years had blood donations that screened positive for WNV during 2012. Two of these donors became symptomatic WNV fever cases included in the summary above. Blood products from all 3 donors were destroyed before distribution per American Red Cross standard procedures.

Other Tick-borne Diseases

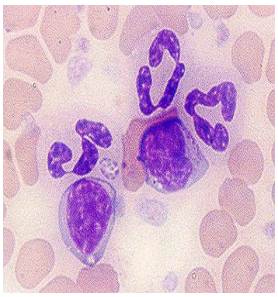
Rocky Mountain Spotted Fever (RMSF), Ehrlichiosis and Anaplasmosis are preventable tick-borne infections that have similar clinical presentations (fever with headache, myalgia, malaise, or blood abnormalities), although those with RMSF are more likely to have rash. If not promptly treated with doxycycline, all 3 conditions can be fatal. Co-infection with these diseases as well as Lyme disease may occur, which can increase illness severity.

Rocky Mountain Spotted Fever (RMSF)



In 2012, 10 probable cases of RMSF were reported to DDC. Median age of the cases was 51.5 years (range: 26-66 years) and most cases (80%) were female. One-half of the RMSF cases (n=5) had illness onset between May and September. All but one case reported spending time outdoors in the 2 weeks prior to illness onset including 5 cases who were outdoors at locations in Philadelphia alone or in addition to areas outside the city. Four RMSF cases required hospitalization as a result of their illness and none were fatal.

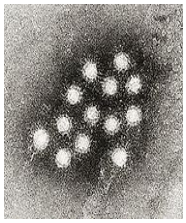
Ehrlichiosis and Anaplasmosis



In 2012, one probable *Ehrlichia chaffeensis* infection in a 62-year-old female resident was reported to DDC. This case reported outdoor exposures outside Philadelphia and required hospitalization. A probable unspecified Human Ehrlichiosis/Anaplasmosis case was also reported during 2012. The case occurred in a 34-year old female resident who had clinical symptoms consistent with these infections and elevated serum IgG titers for both *Ehrlichia chaffeenis* and *Anaplasma phagocytophilum*.

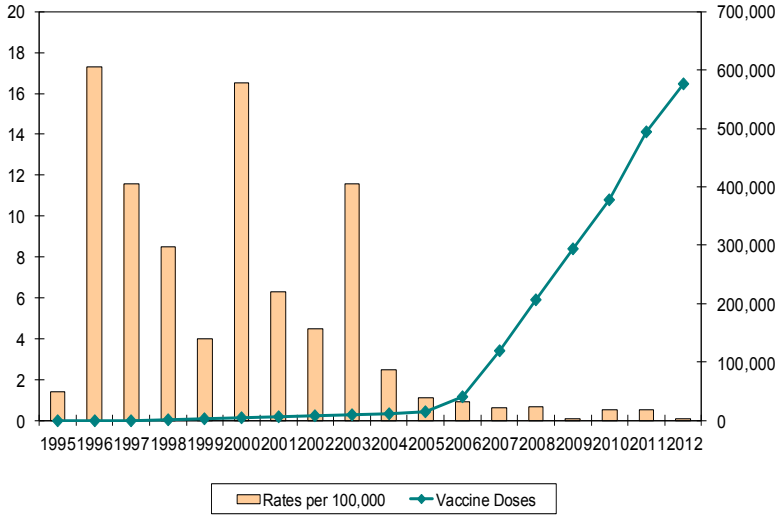
Viral Hepatitis *Infections*

Hepatitis A

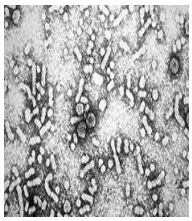


Hepatitis A rates in Philadelphia have continued to decrease dramatically since 2003 and particularly after 2005 when the hepatitis A vaccine was incorporated into the childhood immunization schedule (Figure 28). In 2012, DDC investigated 116 reports of suspect hepatitis A infections, or positive IgM hepatitis A virus tests. Of these, only two, a male and a female, were found to be confirmed acute hepatitis A cases. Reported symptoms were consistent with hepatitis A infections (e.g. jaundice or elevated liver function tests, nausea, fatigue and abdominal pain). Both cases were hospitalized and there were no fatalities. One of the cases reported travel to Asia in their incubation period. No other common hepatitis A risk factors such as consumption of raw shellfish, recreational drug use, or risky sexual behaviors were reported.

Figure 28. Rates of Hepatitis A: Philadelphia, 1995-2012



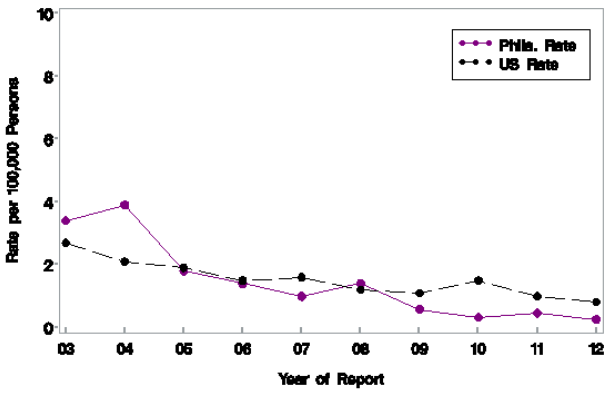
Acute and Chronic Hepatitis B



Acute Hepatitis B

In 2012, there were four confirmed case reports of acute hepatitis B virus infection in Philadelphia. This represents a dramatic decrease over the past decade (Figure 29). The median age of acute HBV cases was 42 years (range: 33-77 years). Three cases (75%) were female. Two individuals had evidence of jaundice and all had documented elevated liver enzymes. Three persons (75%) were known to be hospitalized. One case reported a receiving a tattoo outside of a licensed shop within the incubation period; no other risk factors were noted among cases and none of the individuals were known to be vaccinated.

Figure 29. Rates of Acute Hepatitis B: Philadelphia and US, 2003 to 2012



Chronic Hepatitis B

The main priority for surveillance of chronic hepatitis B infections is to identify women of childbearing age with potential for perinatal transmission of the virus. A new surveillance grant awarded to PDPH in 2013 will allow for an expansion of follow-up amongst a greater number of newly confirmed cases of viral hepatitis. Further expansion of outreach and education regarding HBV transmission, and of testing and vaccination are amongst the goals included in this project.

During 2012, PDPH received 1,245 reports of potential chronic hepatitis B infections, of which 693 were newly reported cases and 505 were newly confirmed chronic hepatitis B infections. Of the newly reported probable chronic case reports with age or sex information, 367/692 (53%) were males and the median age was 42 years (Range: 20 months-86 years). Of the newly reported confirmed chronic case reports with age or sex information, 278/505 (55%) were males and the median age was 43 years (Range: 6-84 years).

Perinatal Hepatitis B

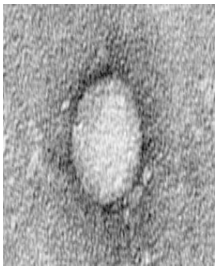
In 2011, the most recent year with follow-up completed, 141 live infants were born to women with chronic HBV who reside in Philadelphia, 131 of which were managed by the program. This total is 19% (n=30) lower compared to the 161 managed live-births in 2010 (Table 7). Two infants died of unknown causes prior to vaccination, one died after being born prematurely, and one infant received appropriate HBIG and HBV vaccination until their death at 4 months. In 2011, 41% (n=54) of these pregnant women with chronic HBV were of Asian/Pacific Islander descent. 98% (n=129) of infants received the birth dose of HBV vaccine and the HBIG within one calendar day of birth. 105 (80%) of the infants were known to receive HBIG and three doses of vaccine by the 8 months of age and 114 (87%) received all immunoprophylaxis (HBIG and three vaccine doses) by 1 year of age. Complete serological testing was not possible for 17 infants; of whom 3 infants' families refused serology, while 4 infants transferred out of jurisdiction unassigned, 2 infants were not located, and 8 infants moved out of the United States. Of the 97 infants with serological results, 94 (97%) infants were found to be immune, three were still susceptible and received or were scheduled to receive additional vaccination. During home visits, 79 household contacts of HBsAg+ mothers were identified, educated, and offered free serological testing. Of the 75 contacts tested, 5 (6%) were positive for HBV infection and 60 (76%) were immune. 6 of the 10 (13%) susceptible household contacts were vaccinated by DDC staff.

Table 7. Comparison of Perinatal Hepatitis B, Philadelphia 2005-2011

	2005	2006	2007	2008	2009	2010	2011
Total Mother-Child Pairs Followed	138	119	110	162	173	161	131
Total Children Receiving HBIG within One Calendar Day of Birth	138 (100%)	118 (99%)	110 (100%)	162 (100%)	168 (97%)	159 (99%)	129 (98%)
Total Children Receiving Birth HBV within One Calendar Day of Birth	138 (100%)	119 (100%)	110 (100%)	162 (100%)	171 (99%)	161 (100%)	129 (98%)
Total Children Receiving 3 HBV Vaccines in 1 Year	138 (100%)	115 (97%)	109 (99%)	153 (94%)	156 (90%)	140 (87%)	114 (87%)
Children HBV+ at Screening	1 (1%)	2 (2%)	1 (1%)	0	0	3 (2%)	0
Household Contacts Identified and Educated	188	197	187	167	182	130	79
Household Contacts Tested	153	151	144	117	115	86	75
Household Contacts Susceptible	21 [17]	16 [11]	15 [9]	17 [9]	6 [4]	8 [2]	10 [6]

Complete 2012 PHBPP results will not be available until 2014. The PHBPP identified and learned of 89 infants born to mothers with chronic HBV infections in 2012. As of June 2013, 86 received a birth-dose of HBV vaccine and HBIG, 53 cases have already completed their HBV vaccination series, and 33 have received their post-vaccination serological testing. Data collection, follow-up, and serologic testing will continue as the year progresses.

HEPATITIS C



Acute Hepatitis C

In 2012, there were 13 confirmed case reports of acute hepatitis C virus (HCV) infection in Philadelphia. The identification of more acute hepatitis C cases is in large part due to enhanced surveillance efforts in the <31 years population which began this year. The median age of acute HCV cases was 27 years (range: 23-86 years). Seven cases (54%) were male. Eleven individuals had documented elevated liver enzymes and three cases had jaundice. Two individuals reported receiving a tattoo and two report injecting illicit drugs within their incubation period. Six cases had a history of being incarcerated for over 24 hours. Three acute cases were linked to a healthcare associated outbreak of hepatitis C at a Philadelphia dialysis facility.

Chronic Hepatitis C

In 2012, DDC added 3,911 new individuals to the HCV registry which is 16% lower than in 2011. New electronic reporting methods and additional staff dedicated to data entry enabled a greater characterization of HCV. Of those individuals with test results reported in 2012, 1,622 (41%) met the case definition for a confirmed case and had not been previously confirmed in Philadelphia. Forty-nine percent of cases lacked confirmatory testing and only had HCV antibody tests. Of the 1,563 confirmed reports with information on sex, 975 (62%) were male. Of the 1,599 confirmed reports with age, median age was 53 years (range: 0-88 years).

Figure 30. Rates of Newly Confirmed Hepatitis C Virus, Past or Present Infection per 100,000 Population by Age and Gender: Philadelphia, 2012

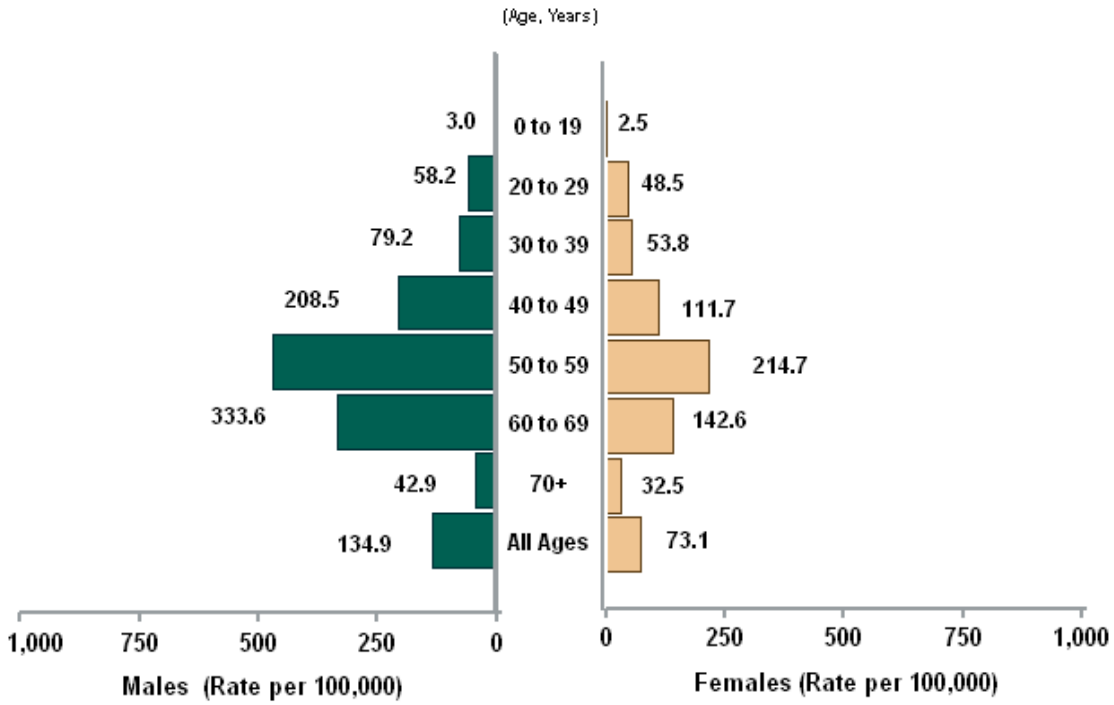


Table 8. Coinfections among Individuals with Hepatitis C or Hepatitis B, 2000-2010

Individuals with:	HCV Coinfections N = 1,622		HBV Coinfections N=1,245	
	N	%	N	%
Hepatitis B	697	1.7	----	---
Hepatitis C	-----	----	697	9.0
Syphilis	405	1.0	120	1.6
Gonorrhea	1,048	2.6	268	3.5
Chlamydia	1,260	3.1	376	4.9
HIV	3,146	7.8	650	8.4

Hepatitis C Surveillance In Philadelphia Youth & Young Adults

In 2012, PDPH launched enhanced surveillance for HCV in individuals under 31 years old to establish a baseline understanding of local HCV burden in this population and identify risk factors. PDPH performed detailed investigations of "newly reported cases" (first time report in 2012). Of the 1,255 reports received, 457 were "newly reported". Among these newly reported cases, 348 (76%) had investigations completed, 8 (2%) were determined to be *acute* infections, 131 (29%) met the *confirmed chronic* case definition, and 147 (32%) had only "reactive" HCV antibody tests without signal to cutoff ratios (classified as probable cases). Investigated cases were primarily white (69%) or Hispanic (22%), and did not differ significantly from non-investigated cases with respect to age but were more likely to be female. Of the 98 (35%) who were symptomatic, 17% were jaundiced.

Of the investigated cases >13-years-old with completed behavioral risk factors investigations, 78% (130/166) had a history of substance use; 65% (111/172) of tattooing; and 43% (73/169) of incarceration; with 62% (74/119), 23% (25/111), and 57% (26/46) having the respective risk in the 6 months prior disease onset/detection. 59% of cases received at least one tattoo in a non-regulated facility (at a house or tattoo party) including 5% tattooed during incarceration. The median age of first intravenous drug use was 21 years (range: 12 – 29 years), with heroin being both the most frequently first drug injected and current drug of choice (Table 1).

Unmet needs in this population were identified as a lack of HCV care provider (54%) and health insurance (10%). Many (43%) had not been counseled/informed about their HCV results with most (68%) requesting more information. To fill this need, PDPH developed a locally-specific educational guide, "*Hepatitis C: A Roadmap for the Newly Diagnosed*", which can be accessed on our "Hepatitis C page": http://www.phila.gov/health/DiseaseControl/hepatitisC.html

Other Reportable

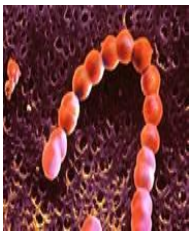
Diseases and Conditions

HIV/AIDS

Currently around one million individuals are thought to be living with HIV or AIDS in the US. More in depth analysis of HIV and AIDS surveillance in Philadelphia can be found at:

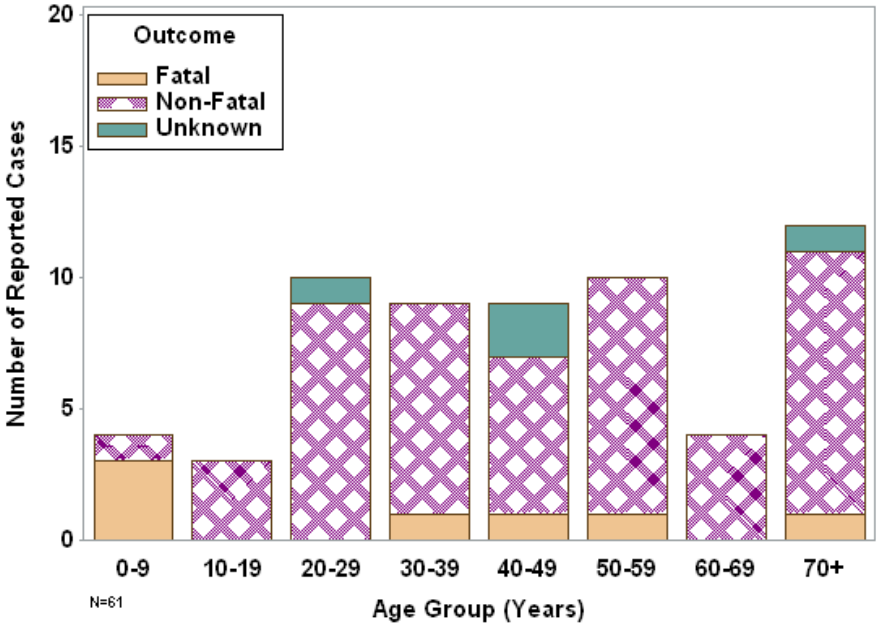
http://www.phila.gov/health/AACO/AACODataResearch.html

Invasive Group A *Streptococcus* (GAS)



In 2012, there were 61 confirmed cases of invasive GAS in Philadelphia, compared with 73 cases in 2011. GAS was isolated from blood in 92% of cases. Cases were distributed slightly more towards females (56%). Cases ranged from 1 week to 92 years of age. The median age at time of infection was 46 years. Seven cases were fatal.

Figure 31. Invasive Group A Streptococcus by Age Group and Outcome: Philadelphia, 2012



Office of Program Collaboration and Service Integration (PCSI)

The Office of Program Collaboration and Service Integration (PCSI) at PDPH serves to foster collaboration across public health programs, primarily HIV/AIDS, viral hepatitis, STD, and Tuberculosis programs, and to promote the provision of integrated services to clients for maximum public health benefit. PDPH is one of six PCSI demonstration projects funded through CDC.

The Office of Program Collaboration and Service Integration (PCSI) at the Philadelphia Department of Public Health (PDPH) serves to foster collaboration across public health programs, primarily HIV/AIDS, viral hepatitis, STD, and Tuberculosis programs, and to promote the provision of integrated services to clients for maximum public health benefit. PDPH is one of six PCSI demonstration projects funded through CDC.

The Office of PCSI regularly assesses program and service needs, and addresses those needs through collaborative projects. The Office of PCSI uses public health data to identify priority areas, venues, and populations that could benefit from improved service integration, and plans and implements effective integrated interventions.

Program assessment and project prioritization is achieved through: regular PDPH PCSI Workgroup meetings; ongoing assessments with participating programs; development of and adherence to a local PCSI Plan; and regular matching of data across programs to inform and improve program planning. The PDPH PCSI Workgroup was established in May 2008, and has met regularly since then.

The PDPH PCSI Workgroup is comprised of key staff from PDPH programs:

- AIDS Activities Coordinating Office (AACO)
- STD Control Program
- Viral Hepatitis Prevention Program
- Tuberculosis Control Program
- Epidemiology Unit
- Acute Communicable Disease (ACD) Program
- Immunization Program
- Bioterrorism & Public Health Preparedness Program
- Office of Addiction Services

The Office of PCSI's matching of data across programs has provided insight on disease co-occurrence, disease coinfection, and overlapping risk factors across PCSI disease areas.

Bioterrorism & Public Health Preparedness

(BT-PHP) Activities: Highlights of 2012

Planning Activities: Building Capacity

In 2012, the Bioterorrism and Public Health Preparedness (BT-PHP) Program focused its planning activities on emergency staffing procedures. BT-PHP evaluated the 2011 response to Hurricane Irene and focused 2012 plans on improving the department's ability to rapidly and effectively deploy medical staff during an emergency event. In March 2012, PDPH launched a custom-designed emergency staffing database, and field-tested this system during a functional exercise. This exercise demonstrated that the new database significantly improved PDPH's ability to contact and assign staff in emergency situations. The Emergency Staffing Database is used by Staffing Specialists to assign thousands of staff and volunteers to multiple POD (Point of Dispensing) site locations and shifts based on availability and qualifications. Testing shows that the new system was 5.5 times more efficient than the previous staffing procedures. Staffing Specialists during this years' exercise, assigned 88.2 staff per Specialist per hour using the Emergency Staffing Database compared to 13.5 staff assigned per Specialist per hour using the previous method.

Real Events: Hurricane Sandy

In Philadelphia, shelters to support the short-term needs of displaced populations are managed jointly by the Managing Director's Office of Emergency Management (MDO-OEM) and the American Red Cross (ARC) Southeastern Pennsylvania Chapter. On Sunday, October 28, 2012 the City of Philadelphia opened three shelters to support 381 people who were affected by the storm. Shelter operations continued through Wednesday, October 31.

Through a coordinated planning effort with MDO-OEM, ARC, the Salvation Army and other response partners, PDPH conducted medical oversight at the emergency shelters. PDPH staff and volunteers supported individuals with stable, chronic conditions, responded to minor acute medical complaints, and controlled of the spread of communicable diseases. To meet this need, PDPH staff and Medical Reserve Corps volunteers organized and managed a medical field clinic at each of the three shelters.

As part of the City's response to Hurricane Sandy, PDPH through the BT-PHP Program, provided oversight of the medical field operations at the public evacuation shelters which included:

- Defining the scope of clinical services
- Coordinating a small pharmacy of over-the-counter and prescription medications for on-site use
- Assignment and deployment of medical staff and Medical Reserve Corps volunteers
- Assembling medical supplies
- Providing remote physician consultations to support clinical operations
- Evaluation of the health response to further define special medical needs at City-run shelter

Notifiable Disease Case Report

(Confidential)

Philadelphia Department of Public Health
Division of Disease Control
Communicable Disease Control Program
500 S. Broad Street, Philadelphia, PA. 19146

Identification of Patient

Report Date *(Mo., Day, Yr.)*	Name *(Last, First, M.I.)*	Parent or caretaker (if applicable)

Address *(Number, Street, Apt #, City, Zip Code)*	Telephone (H) (W) (C)
Philadelphia	

DOB *(Mo., Day, Yr.)*	Age	Sex ☐ M ☐ F	Occupation

Name of Employer or School	Address *(Number, Street, City, Zip Code)*

Medical Information

Disease or Condition	Date of Onset *(Mo., Day, Yr.)* *(If animal bite, Date it Occurred)*	Diagnosis (check one) ☐ Clinical ☐ Lab confirmed	Fatal (check one) ☐ Yes ☐ No

Chief Symptoms / Complaints	Suspected source of Infection (if known)

If Case Hospitalized *(Name of Hospital)*	Admission Date	Discharge Date

Laboratory Information If Pertinent *(Attach Copies If Applicable)*

Name of Tests Done	Site/Source	Results	Dates Done

Animal Exposures

Parts of Body Bitten	Type of Animal	Breed of Animal	Current Location Of Animal *(Indicate if available for testing)*

Name of Owner	Address of Owner *(Number, Street, Apt #, City, Zip Code)*

Reporter Information

Name of Person Reporting Case	Reporter ☐ ICP ☐ ED ☐ Other_____	Phone

Reporting Institution	Address (Number, Street, City, Zip Code)

DO NOT WRITE IN AREA BELOW - FOR DEPARTMENT USE

Name *(Person Receiving Report)*	Method of reporting ☐ Phone ☐ Fax ☐ Mail ☐ Active Surveillance ☐ Other_____

Any unusual illness, disease clusters or possible outbreaks should be reported *immediately* by telephone.
Please fax all completed reports to 215-545-8362, or call 215-685-6748 to report case by phone.

PHILADELPHIA DEPARTMENT OF PUBLIC HEALTH
DIVISION OF DISEASE CONTROL (DDC)

Report: 215-685-6748 Fax: 215-238-6947

For after hours immediate reporting & consultation: 215-686-4514 – ask for Division of Disease Control on-call staff

REPORTABLE DISEASES AND CONDITIONS

Acquired Immune Deficiency Syndrome (AIDS/HIV) ‡
Amebiasis
Animal bites (wild/stray/domestic)
Anthrax *
Botulism *
Brucellosis *
Campylobacteriosis
Chlamydia trachomatis including lymphogranuloma venereum (LGV)
Chancroid
Cholera *
Creutzfeldt-Jakob disease
Cryptosporidiosis
Cyclosporiasis
Diphtheria *
Ehrlichiosis
Encephalitis including all arboviruses *
Escherichia coli O157:H7 *
Food poisoning *
Giardiasis
Gonococcal infections
Guillain-Barré syndrome
Haemophilus influenzae, invasive disease *
Hantavirus Pulmonary Syndrome *
Hepatitis A
Hepatitis B
Hepatitis C
Hepatitis, other viral
Histoplasmosis
Influenza – pediatric mortality and institutional outbreaks
Lead poisoning
Legionnaires' disease *
Leprosy (Hansen's disease)
Leptospirosis (Weil's disease)
Listeriosis *
Lyme disease
Malaria
Measles (rubeola) *
Meningitis - all types
Meningococcal infections *
Mumps
Pelvic inflammatory disease
Pertussis (whooping cough)
Plague *
Poliomyelitis *
Psittacosis (ornithosis)
Rabies *
Rickettsial diseases
Rubella (German Measles) & Congenital Rubella *
Severe Acute Respiratory Syndrome (SARS) *
Salmonellosis
Shigellosis
Smallpox *
Staphylococcus aureus, vancomycin insensitive
Streptococcal disease, invasive group A
Streptococcus pneumoniae, invasive disease
Syphilis
Tetanus
Toxic Shock Syndrome
Trichinosis
Tuberculosis §
Tularemia *
Typhoid (*Salmonella typhi* and *paratyphi*) *
West Nile Virus *
Varicella, including zoster
Yellow Fever and other viral hemorrhagic fevers *

* Report suspected and confirmed cases within 24 hours
All other cases should be reported within 5 days

‡Report to AIDS Activities Coordinating Office at 215-685-4781
§Report to TB Control Program at 215-685-6744 or -6873

All unusual disease clusters, disease outbreaks, and unusual disease occurrences should be reported immediately

To Report a Case Call, Fax or Submit through NEDSS the Following Information to DDC:
Condition | Patient Name, Age/DOB, Sex, Address & Phone | Clinician Name, Address & Phone

Appendix C: Communicable Disease Reports *Philadelphia by Year–2003-2012*

COMMUNICABLE DISEASE	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AMEBIASIS	18	9	6	4	19	14	14	4	9	11
ANIMAL BITES/EXPOSURES	1612	1353	1418	1457	1499	1614	1578	1624	1311	1598
ANTHRAX	0	0	0	0	0	0	0	0	0	0
BABESIOSIS	1	0	0	0	1	0	0	0	1	0
BOTULISM	3	0	1	1	1	1	0	1	2	2
BRUCELLOSIS	0	0	0	0	1	0	0	0	0	1
CAMPYLOBACTERIOSIS	114	96	74	73	80	118	124	121	141	182
CHLAMYDIA TRACHOMATIS	17,747	16,723	15,577	17,199	17,029	17,012	18,104	19,428	20,471	20,803
CHOLERA	0	0	0	0	0	0	1	0	0	1
CRYPTOSPORIASIS	19	19	27	29	94	23	38	17	14	18
CYCLOSPORIASIS	2	0	3	0	2	1	3	0	0	1
DENGUE FEVER	0	0	0	1	8	1	0	3	1	1
DIPHTHERIA	0	0	0	0	0	0	0	0	0	0
ESCHERICHIA COLI, shiga-toxin producing (STEC)	14	11	7	19	4	8	10	14	9	12
GIARDIASIS	113	104	93	81	65	99	106	122	43	60
GONORRHEA	5,731	5,206	5,053	5,218	5,246	4,950	4,823	6,533	6,761	7,293
GUILLIAN-BARRE SYNDROME	0	0	1	2	1	3	1	0	0	0
HAEMOPHILUS INFLUENZA [type b]	14 [1]	9 [0]	14 [0]	16 [0]	19 [2]	11 [1]	30 [7]	28 [1]	22 [2]	39 [1]
HEPATITIS A	179	39	17	14	9	10	2	13	8	2
HEPATITIS B, ACUTE	51	60	27	21	15	21	9	5	7	4
HEPATITIS C, ACUTE (Non-A, Non-B until 1998)	3	0	2	1	0	0	0	1	0	13
HISTOPLASMOSIS	2	2	0	1	2	0	1	2	0	1
LEGIONELLOSIS	23	31	19	21	24	26	60	33	64	29
LEPTOSPIROSIS	0	0	0	0	0	0	0	1	0	1
LISTERIOSIS	11	11	2	7	8	5	5	8	2	6
LYME DISEASE	164	182	172	139	172	281	363	238	301	191
MALARIA	19	13	14	15	7	19	16	22	19	13
MEASLES	0	0	0	0	0	0	1	0	0	2
MENINGITIS, ASEPTIC	120	87	95	66	86	79	68	84	104	92
MENINGITIS, BACTERIAL	7*	4*	4*	1*	4*	4*	6*	12*	12*	5
MENINGOCOCCAL INFECTIONS	15	14	8	2	9	5	12	5	4	6
MUMPS	2	1	2	2	1	0	0	54	21	4
PERTUSSIS	98	109	75	50	39	54	65	74	49	268
PLAGUE	0	0	0	0	0	0	0	0	0	0
POLIOMYELITIS	0	0	0	0	0	0	0	0	0	0
RABIES (Human)	0	0	0	0	0	0	0	0	0	0
RICKETTSIAL DISEASES, including RMSF	0	7	3	8	2	5	0	9	4	12
RUBELLA, including congenital rubella syndrome	0	0	0	0	0	0	0	0	0	0
SALMONELLOSIS, excluding typhoid	316	261	305	293	404	420	396	395	301	305
SHIGELLOSIS	696	31	31	14	138	206	1051	141	41	48
STREP PNEUMONIAE, INVASIVE	101	94	151	139	162	165	199	154	157	121
STREPTOCOCCUS, INVASIVE Gp. A [TSS]	43 [3]	24 [3]	27 [0]	37 [0]	34 [0]	75 [0]	49 [1]	66 [0]	73 [0]	61 [0]
SYPHILIS– PRIMARY & SECONDARY	98	72	86	125	136	150	218	238	207	269
SYPHILIS– CONGENITAL	3	0	2	0	9	7	4	1	4	5
SYPHILIS– TOTAL	587	470	417	540	500	526	704	667	698	798
TETANUS	0	0	0	0	0	0	0	0	0	0
TOXIC SHOCK SYNDROME, staphylococcal	0	0	0	0	0	0	0	0	0	1
TUBERCULOSIS	120	129	116	149	133	162	98	96	101	86
TULAREMIA	0	0	0	0	0	0	0	0	0	0
TYPHOID FEVER	1	2	1	4	0	6	2	2	3	2
VARICELLA	N/A**	N/A**	614	787	735	349	326	261	262	118
WEST NILE VIRUS	24	1	0	1	0	8	0	13	1	9
YELLOW FEVER	0	0	0	0	0	0	0	0	0	0

NR= Not Reportable, NA= Not Available
Excluding Neisseria meningitides, *Haemophilus influenza, Listeria*, and invasive *Streptococcus pneumonia.*

Beginning in 2003, *S. pneumonia* meningitis was counted with other *S. pneumonia* cases.
** Citywide varicella data not available for these years.