2009

pdph: DIVISION OF DISEASE CONTROL

Annual Report

PHILADELPHIA
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Table of Contents

Introduction

OVERVIEW

This annual report provides an epidemiologic summary of conditions reported to the Division of Disease Control (DDC) in 2009. 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). The report is also available on the DDC website:
http://www.phila.gov/health/DiseaseControl/DataReports.html

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://www.cdc.gov/ncphi/disss/nndss/casedef/case_definitions.htm

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	215-685-6748
Urgent After-Hours Consultation	215-686-4514 Ask for Division of Disease Control 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 Coordination 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*

Meningococcal Infection *(Neisseria meningitidis)*

In 2009, 12 cases of invasive meningococcal disease were reported to DDC, including an outbreak of 4 confirmed and 1 suspect cases of serogroup B meningococcal infection associated with a Philadelphia university. The median age of cases was 20 years (range: 12-41 years) and cases were evenly distributed by sex. Although all cases were hospitalized, no cases resulted in fatality. *N. meningitidis* was isolated from cerebrospinal fluid (3) and blood (9). Serogroup information was available for all of the cases – 8 were typed B, 2 were typed Y, one C, and one W. (Table 1).

Figure 1. Invasive Meningococcal Disease by Age Group: Philadelphia, 2000–2009

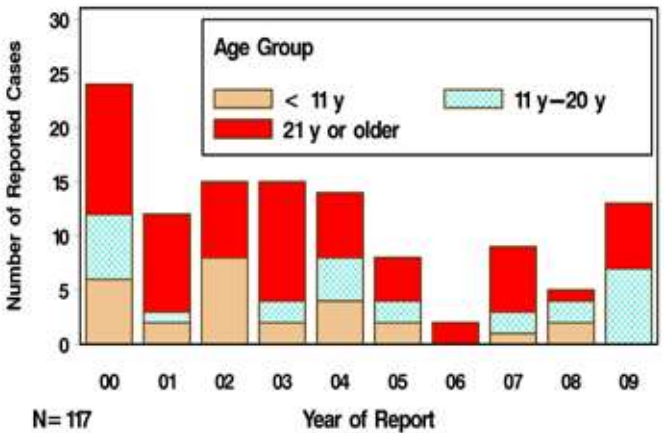


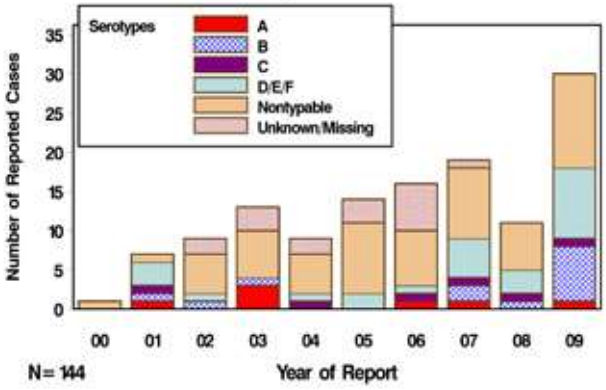
Table 1. Meningococcal Serogroups: Philadelphia, 2000 to 2009

Serogroup	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total n (%)
B	3	1	5	3	1	1	0	0	1	8	23 (21)
C	7	2	2	5	3	0	0	4	0	1	24 (22)
W	0	0	0	1	0	0	1	0	0	1	3 (3)
Y	9	5	7	4	6	4	0	2	2	2	41 (38)
Z	0	0	0	0	1	0	0	1	0	0	2 (2)
Not grouped	2	1	1	2	1	3	1	2	2	0	15 (14)
Total	21	9	15	15	12	8	2	9	5	12	108 (100)

Invasive *Haemophilus influenzae* Disease

More invasive *H. influenzae* cases were reported in 2009 than in previous years. There was a total of 30 confirmed reports. Cases were nearly equally distributed by sex (53% male). The median age was 53 years (range: 10 weeks - 93 years). Isolates were sampled from blood in 24 (80%) cases, lung tissue in 5 (17%), and CSF in 1 (3%). All cases were hospitalized and ten cases (33%) were fatal. Serotype information was available for 29 cases, of which 11 (38%) were nontypeable, 7 (24%) were serotype f, 7 (24%) were serotype b (Hib), 1 (3%) was serotype a, 1 (3%) was serotype c, 1 (3%) was serotype d, and 1 (3%) was serotype e (Figure 2). In three of the 10 fatalities, Hib was cultured from sterile

Figure 2. Invasive *Haemophilus influenza* by Serotype: Philadelphia, 2000–2009



site specimens. Two Hib infections in children, who were both inadequately vaccinated for Hib, resulted in death. The remaining Hib infections were adults with no known vaccination history.

Invasive *Streptococcus pneumoniae* Disease

There were 199 reports of invasive pneumococcal disease in Philadelphia during 2009. Slightly more than half of the cases were among females (51%), and the median age of infection was 52 years (range: 0-99 years). Twenty-five cases (13%) were in children under 5 years of age and 47 (24%) were in the 65 years and older age group (Table 2).

Drug Resistant Invasive *S. pneumoniae* Infections

Due to high levels of antibiotic resistance among *S. pneumoniae* infections, PDPH collects available susceptibility results. In 2009, 18 (10%) of the 189 isolates with susceptibilities were fully or intermediately resistant to penicillin and/or oxacillin (Table 3). In previous years (2004-2008), the proportion of penicillin/oxacillin-resistant *S. pneumoniae* (SPDR) isolates was between 16% and 24%.

Table 2. Characteristics of Invasive Pneumococcal Disease Cases by Age Group, Philadelphia, 2009

Patient Characteristics	Age Groups** <5 years n (%)	5-64 years n(%)	≥65 years n (%)
Number of Reported Cases	25	125	47
Age (median, range)	1 year (0-55 mos)	49 years (5-63 yrs)	79 years (65-99 yrs)
Female	8 (32%)	64 (51%)	29 (62%)
Clinical Manifestations			
Bacteremia & pneumonia	5 (20%)	65 (52%)	18 (38%)
Bacteremia without focus	17 (68%)	51 (41%)	25 (53%)
Meningitis	1 (4%)	5 (4%)	2 (4%)
Pneumonia	2 (8%)	3 (2%)	1 (2%)
Septic arthritis	0 (0%)	1 (1%)	1 (2%)
Outcomes			
Hospitalized	20 (80%)	107 (86%)	42 (89%)
Fatal	2 (8%)	9 (7%)	13 (28%)
≥1 Reported Underlying Condition**	10 (40%)	71 (57%)	29 (62%)
PCV* Vaccination			
Up-to-date vaccination	11 (44%)	N/A	N/A
S. pneumoniae			
Serotypes	17F (1), 19A (8), 19F (1), 25A (1), 38 (1)	22F (1), 35B (1), 38(1)	N/A
Drug Resistant	4 (16%)	9 (7%)	5 (11%)

*Pneumococcal Containing Vaccine
**Any health condition that may affect a person's ability to fight infection
***2 cases were missing age and date of birth

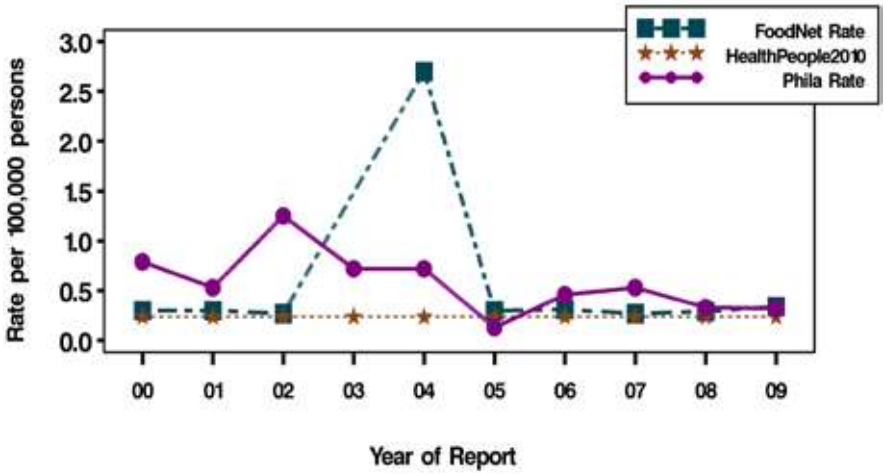
Table 3. Antibiotic Susceptibilities of Invasive *Streptoccous pneumoniae* Isolates: Philadelphia, 2009

Antibiotics	Isolates Tested (No.)	Susceptible Isolates (%)
Penicillin/Oxacillin	188	90
Ceftriaxone	162	97
Penicillin/Oxacillin & Ceftriaxone	162	97
Erythromycin	82	84
Penicillin/Oxacillin& Erythromycin	82	84
Levoflaxin	81	99
TMP/SMX	76	91
Vancomycin	75	99
Clindamycin	54	89

Listeriosis (*Listeria monocytogenes*)

In 2009, there were five cases of listeriosis in Philadelphia residents, equal to the number in 2008. Three (60%) of the cases were female. All cases were adults older than 50 years (median age: 64 years, range: 53-77 years). PDPH did not identify any links between these cases – they occurred sporadically in time and place, and the DNA fingerprints of the three isolates that underwent pulsed field gel electrophoresis were different. Three of the five isolates were obtained from blood cultures, and two from CSF. Three of the cases had diabetes. All five of the cases were hospitalized but none were fatal.

Figure 3. Rates of Listeriosis
by Year of Report: Philadelphia, 2000 to 2009



Aseptic Meningitis

In 2009, 68 cases of aseptic meningitis among Philadelphia residents were reported and confirmed by DDC. The median age of these individuals was 27 years (range: 0 - 90 years). Cases were equally distributed by sex. Although there were no reported fatalities, 56 (88%) cases were hospitalized. Fourteen (21%) cases had residual nervous system effects at time of interview. Eight individuals were tested and found to be negative for WNV. For the 12 samples with enterovirus testing, all 12 were positive.

Other Bacterial Meningitis

In 2009, there were six cases of bacterial meningitis fitting this category including one fatality. Those infected were either over 50 years (4) or infants less than one year (2). Cases were equally distributed by sex. *Enterococcus faecalis* was isolated from the one fatal case. *Staphylococcus aureus*, Group B *Streptococcus*, MRSA, and *Citrobacter* were isolated from the other cases.

Respiratory *Infections*

Influenza and Respiratory Virus Surveillance (2009-2010 Season)

Influenza-like Illness Surveillance

PDPH maintains an active surveillance system that monitors chief complaints related to emergency department (ED) visits from 22 local hospitals. De-identified data from hospital triage logs are received daily and subsequently analyzed for influenza-like illness (Figure 4) and other syndromes of interest.

Much like PDPH's emergency department surveillance, de-identified data from several pediatric ambulatory clinics in our 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 AND cough (Figure 4).

Respiratory Virus Surveillance

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 (Figure 5). Test methods vary and may include rapid antigen tests, viral culture, and PCR.

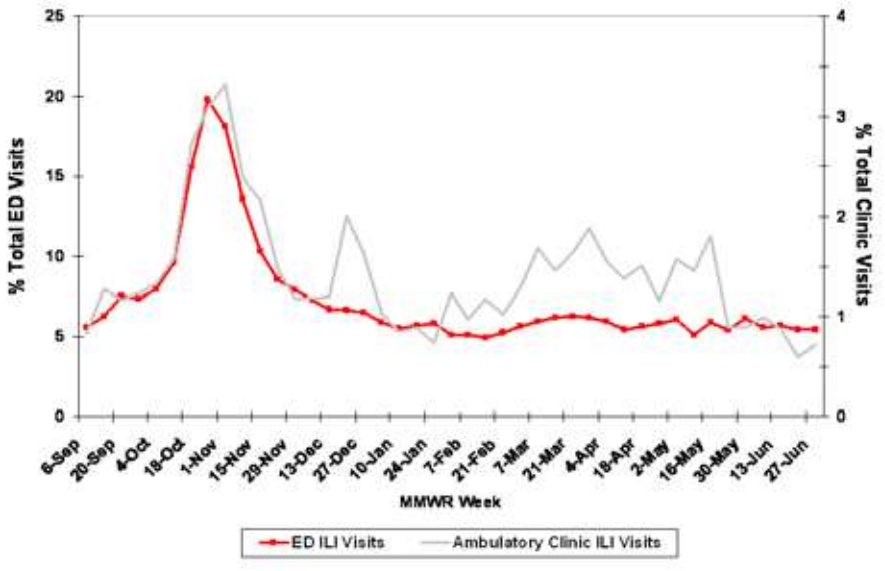
The 2009-2010 respiratory virus season was a unique season, as influenza circulated extensively in the early fall of 2009 – an occurrence not seen in decades (Figure 6). This was due to the 2nd wave of the 2009 influenza A/H1N1 virus. A concurrent epidemic of rhinoviruses in Philadelphia further added to the respiratory morbidity experienced in our area (Figure 5). When winter came, virtually no influenza was detected by DDC's laboratory-based surveillance, something that had not happened during the lifetime of this surveillance system (Figure 6).

Vaccination Recommendations

Novel H1N1 Influenza Vaccine

The 2009-2010 vaccinations for influenza were greatly affected by the H1N1 pandemic during the preceding influenza season. A massive, federally led vaccine distribution program, which was managed through state and local health departments including the Philadelphia Department of Public Health, was launched by September 2009. PDPH worked with a variety of providers as part of this effort, including current VFC/VFAAR providers, other medical providers, hospital systems, the School District of Philadelphia, the Archdiocese of Philadelphia, Philadelphia private and charter schools, dialysis centers, and local Universities. Overall, PDPH coordinated the distribution of 440,000 H1N1 influenza vaccine doses to nearly 500 providers and received 300,000 reports of vaccine ad-

Figure 4. Philadelphia Emergency Department (ED) and Pediatric Ambulatory Clinic Surveillance for Influenza-like Illness Through MMWR Week 26 (June 2010)



ministration (first dose or second dose [recommended for children less than 10 years of age]).

Due to morbidity and mortality seen earlier in 2009, the CDC recommended initial targeting of the H1N1 vaccine for children aged 6 months-24 years, adults 50 years or older, immunocompromised or chronically ill individuals, pregnant women, and those living or working in close contact with high-risk persons. PDPH strictly adhered to these guidelines assuring that roughly 88% of the 270,000 vaccine recipients were in a priority group. Over 60% of all recipients were children, many of whom were vaccinated in one of the school located vaccination clinics supported by PDPH.

Seasonal Influenza Vaccine for 2009-2010

In addition to the massive H1N1 vaccination effort, a routine seasonal influenza vaccine including 3 circulating strains of influenza (A/Brisbane/59/2007 (H1N1)-like virus, A/Brisbane/10/2007 (H3N2)-like virus, B/Brisbane/60/2008-like virus) still needed to be distributed during the Fall. Seasonal influenza vaccine (available as an injection of inactivated influenza virus or as a nasal spray of a live attenuated virus vaccine) remains the most important measure for preventing influenza and influenza-related complications – including death. For the 2009-2010 seasonal influenza vaccine, CDC recommended targeting vaccination of 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 persons as well as the vaccination for all children aged 6 months through 18 years. In Philadelphia, seasonal influenza vaccination was conducted by DDC in cooperation with Philadelphia Corporation for Aging, the Federally Qualified Health Centers, local Nursing Schools, and other volunteer providers – delivering nearly 14,000 adult flu shots in a 3 month span.

Figure 5. Respiratory Agents by Week (Reports from 7 Hospital Laboratories): Philadelphia, 2009-2010 Season

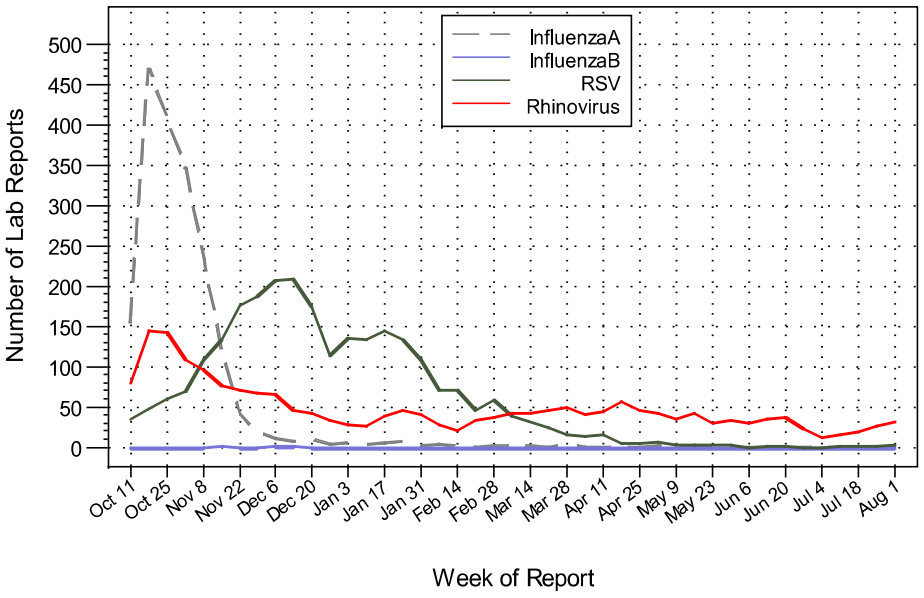
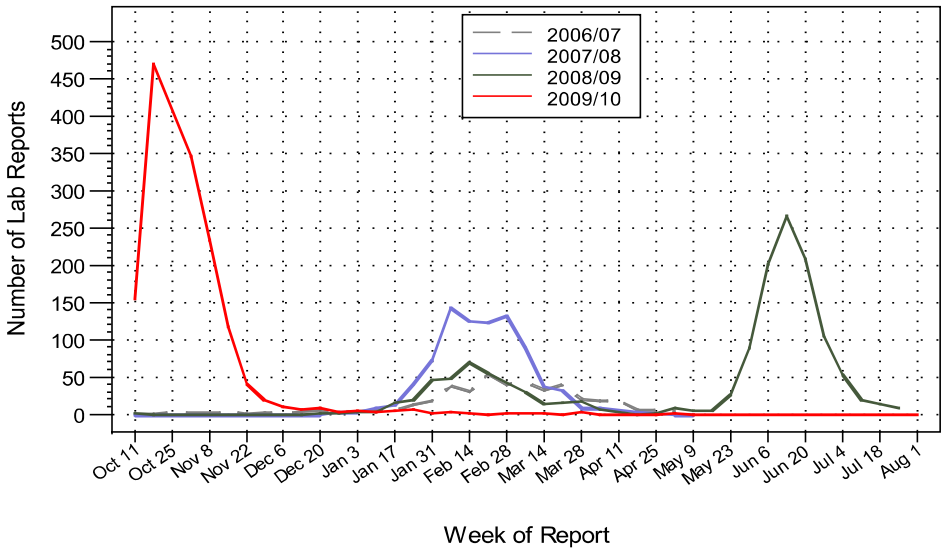


Figure 6. Laboratory Confirmed Influenza A Reports from Select Hospital Labs by Week of Report: Philadelphia, 2006/07 to 2009/10 Influenza Seasons



Legionellosis (*Legionella pneumophila*)

In 2009, 60 confirmed cases of legionellosis or Legionnaire's Disease (LD) were reported in Philadelphia compared with 26 in 2008. Although more than twice as many cases occurred in 2009, there were no common risk factors associated with confirmed cases of legionellosis. In addition, cases occurred sporadically throughout Philadelphia County. Diagnosis was established with urine antigen testing in 58 (97%) of the cases, PCR testing in 1 (1.5%), and positive culture in 1 (1.5%). Forty (67%) cases were male. Ages ranged from 29 to 89 years with a median age of 53.5 years. One case was fatal. Of the 57 cases with risk factor information available, 48% were smokers, 30% had diabetes mellitus, and 15% were immunocompromised. Historically, onset typically occurs during the summer months (June through August); however, in 2009, a large number of cases also occurred through November. In 2009, 88% of cases occurred between June and November, compared to an average of 83% in 2005-2008. Previous studies have shown that cases are more likely to occur if days prior to onset have increased relative humidity (Figure 7).

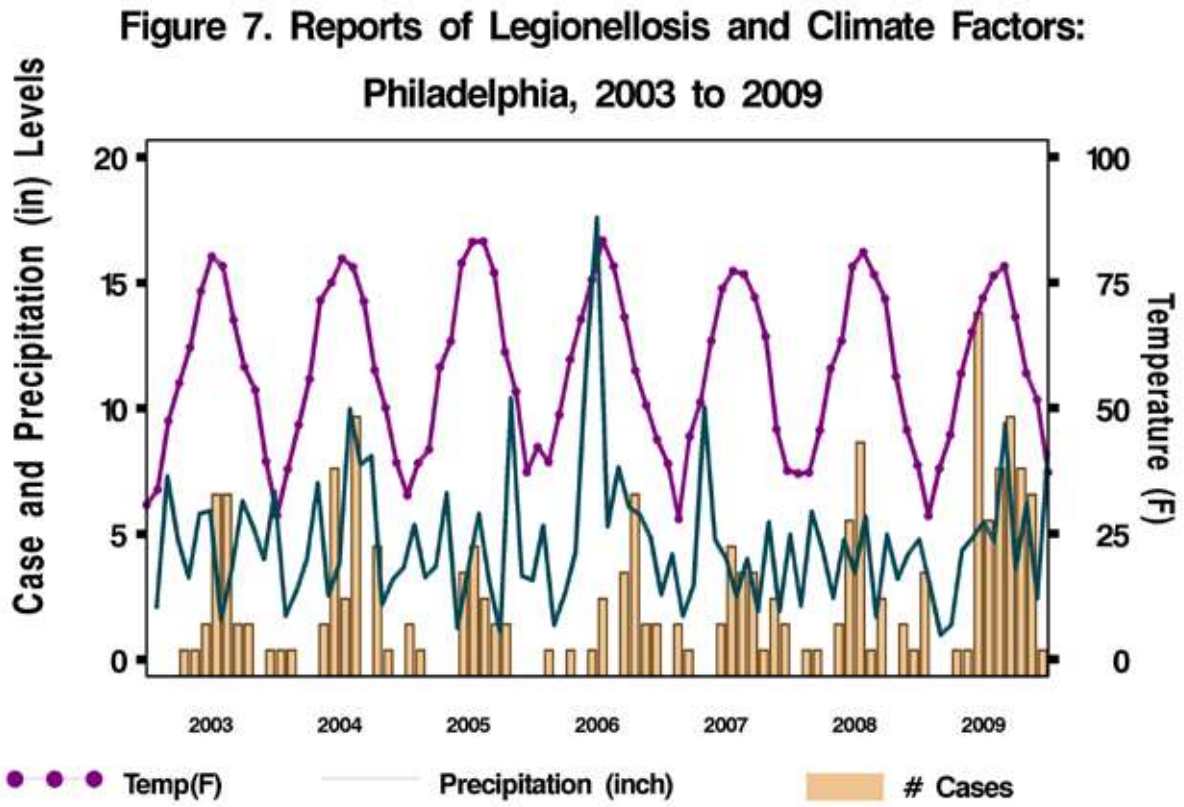


Table 4. Characteristics of Legionellosis Cases: Philadelphia, 2005 to 2008 Compared to 2009

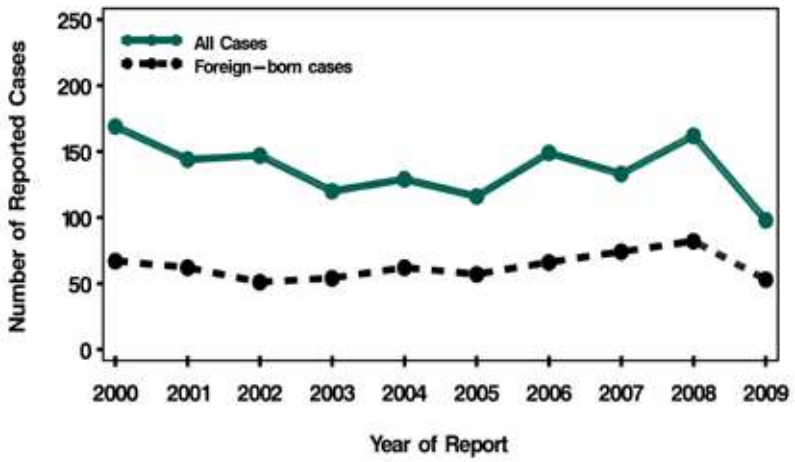
	Case Status n	Age n (%)			Gender n (%)	Clinical Outcomes n (%)		Underlying Health Risk Factors n (%)			Environmental Exposures n (%)
Characteristics	Confirmed	Median (range)	0-50 years	50+ years	Male	Hospitalized	Fatal	Smoker	Diabetes Mellitus (DM)	Any risk factor/ health condition*	Any**
2005 to 2008	23 (Average) 90 (Total)	56 (26-94)	31 (34)	59 (66)	61 (68)	76 (84)	4 (4)	30 (33)	21 (23)	50 (56)	22 (24)
2009	60	53 (29-89)	20 (33)	40 (67)	40 (67)	48 (80)	1 (2)	27 (45)	17 (28)	42 (70)	22 (37)

* Includes previously mentioned health conditions and organ transplant patients
**Includes construction, dental procedures, possible nosocomial, and travel

Tuberculosis (*Mycobacterium tuberculosis*)

Tuberculosis (TB) morbidity had declined steadily in Philadelphia since the mid-1990s, fluctuating between 120 to 170 cases over the last seven years and then dramatically decreasing last year. In 2009, Philadelphia reported 98 TB cases, a decrease of 39% from the 162 cases reported in 2008 (Figure 8). A similar decrease has been detected in many jurisdictions throughout the U.S (CDC. MMWR. 2010; 59(10): 289-294). The overall TB case rate in 2009 was approximately 6.5 cases per 100,000 population, which exceeds the National Healthy People 2010 Objective of 3.5 per 100,000 population. There are likely multiple reasons for the drop in the reported TB case count in Philadelphia and other locations in the U.S. These reasons may be associated with improvements in TB control activities, changing immigration patterns that have resulted in fewer high-risk persons immigrating into the United States or more high-risk persons leaving, possible underreporting of diagnosed TB cases during 2009, annual fluctuations in caseload, aggressive TB diagnosis and treatment in previous years, or declines in diagnosing TB cases.

Figure 8. Reported Cases of Tuberculosis by Natality: Philadelphia 2000 to 2009



Treatment completion rates have steadily increased since the 1990s, when less than half of patients completed treatment, to nearly 91% among the 162 cases in 2008 completing treatment (most recent data).

Drug Resistant TB

Isolates and susceptibilities were available for 73 (74%) of the TB cases reported during 2009. We identified one isolate which was multi-drug resistant (MDR-TB), defined as resistance to at least isoniazid (INH) and rifampin. Eight (11%) of the isolates demonstrated some other drug resistance (Table 5).

Table 5. Susceptibility Results for TB isolates: Philadelphia, 2009

TB Isolates Tested for Drug Resistance	n=73 (100%)
Single drug resistance	**n=6**
Streptomycin(STM)	4
Isoniazid (INH)	2
Pyrazinamide (PZA)	0
Rifampin (RIF)	0
Drug resistance to more >1 medication	**n=3**
INH+RIF (MDR-TB)	1
INH+Ethionamide	1
INH+STM+Ethambutol	1
INH+STM	0
STM+PZA	0

Populations at High Risk for TB Infection

The proportion of TB cases who are foreign-born has steadily increased in Philadelphia since 2005. For the past three years over 50% of annual TB cases have been foreign-born. In 2009, 17 (32%) of the 53 foreign-born cases were from Western Pacific countries, including Vietnam, China, and Cambodia.

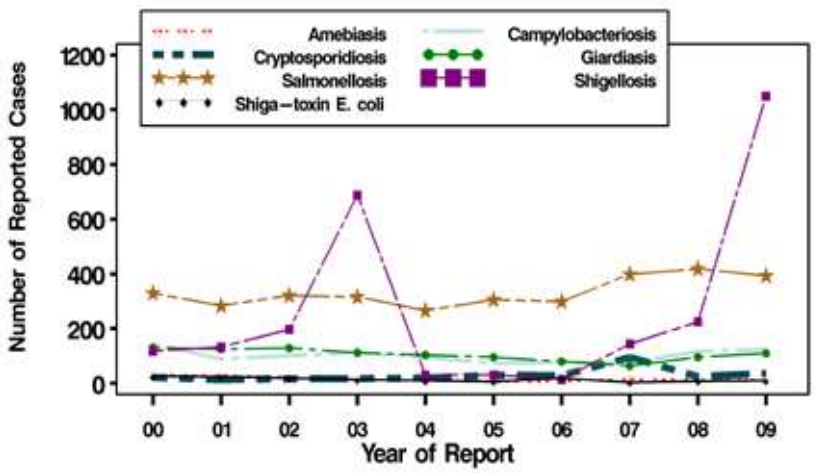
Outreach and targeted testing programs in long term care facilities (LTC), correctional facilities, and throughout the homeless shelter network have led to early detection and prevention of TB cases in these populations. In 2009, 5 (5%) of the TB confirmed cases were homeless, 4 (4%) resided in LTC at diagnosis, and 1 was identified in a correctional facility.

Of the 81 TB cases who had documented HIV test results, eight (10%) were positive.

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 identification to be truly attributed to the agent. Generally, the most commonly reported notifiable GI illness in Philadelphia is salmonellosis (Figure 10). In 2009 DDC responded to a number of GI outbreaks – most notable was the continuation of a city-wide shigellosis outbreak due to community-wide and household transmission that started in 2008. Also during 2009, DDC received reports of 23 norovirus outbreaks – 18 (78%) in LTC, 2 (9%) in hospitals, 1 (4%) in a rehabilitation facilty, 1 (4%) in a childcare facility, and 1 (4%) in a school.

Figure 9. Reported Cases of Gastrointestinal Diseases: Philadelphia, 2000 to 2009



Amebiasis (*Entamoeba histolytica*)

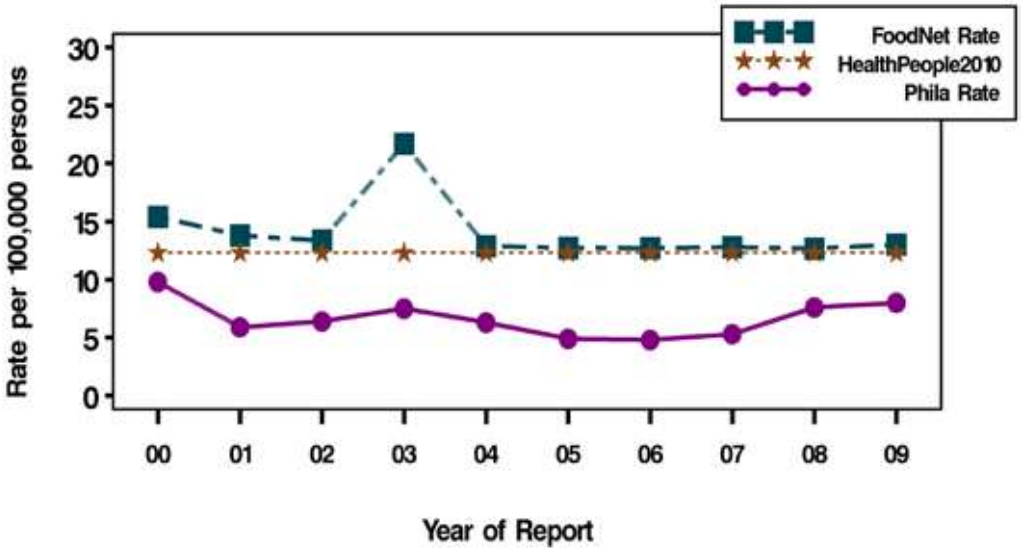
In 2009, 14 confirmed cases of amebiasis were reported -- the same number of cases that were reported in 2008. No outbreaks or clusters of amebiasis were identified during 2009. Of those infected, eight cases (57%) were male and the median age was 28.5 years (range: 21-51 years). Seven (50%) of the 14 confirmed cases recorded international travel histories during their incubation period (India, Italy, Ethiopia, Ecuador, Mexico and Burkina Faso). One of the seven adult males interviewed reported having sex with men (MSM).

Campylobacteriosis (*Campylobacter* spp.)

In 2009, a total of 124 cases (120 confirmed and 4 probable cases) of campylobacteriosis were reported among Philadelphia residents. There were 4 household clusters. The four probable cases were symptomatic and linked to a confirmed case in the same household. The 2009 cases were nearly equally divided by gender (48% male). The median age was 25 years (range: 0-91 years). Information on symptoms was available for 91 cases – 98% reported diarrhea, abdominal pain (63%), fever (64%), vomiting (37%), and nausea (42%). Seventeen of the 124 (14%) interviewed cases reported traveling outside the US during their incubation period, and one case reported traveling out of state. Forty-two had animal contact, but only 7 persons had contact with an animal other than a cat or dog (4 turtles, 2 birds, and a rabbit). No campylobacteriosis fatalities were reported.

Of the fifteen isolates with serotype information, all were *Campylobacter jejuni*. Ciprofloxacin susceptibility was available for 32 of 120 Campylobacter isolates (27%). Of these, 11 (34%) were ciprofloxacin-resistant (Table 7).

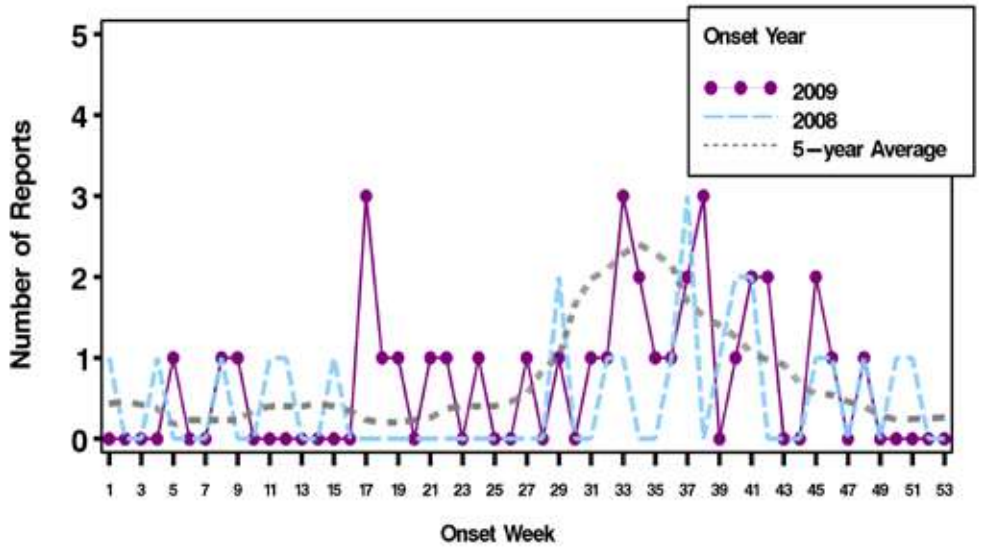
Figure 10. Rates of Campylobacteriosis
by Year of Report: Philadelphia, 2000 to 2009



Cryptosporidiosis (*Cryptosporidium* spp.)

In 2009, a total of 37 confirmed cases and one probable case of cryptosporidiosis were reported in Philadelphia, compared to 23 confirmed cases in 2008 -- a 62% increase. The median age of the 2009 cases was 31 years (range: 0-85 years) and over half of the cases (62%) were male. Among those with available data, risk factors that were reported include an immunocompromising medical condition (7), sexual contact (4), recreation water exposure (3), and travel outside of Pennsylvania during the incubation period (5). There were no fatalities, but 22 cryptosporidiosis cases were hospitalized.

Figure 11. Number of Cryptosporidiosis Reports by Week of Onset:
Philadelphia, 2008, 2009 and 5–Year Moving Average



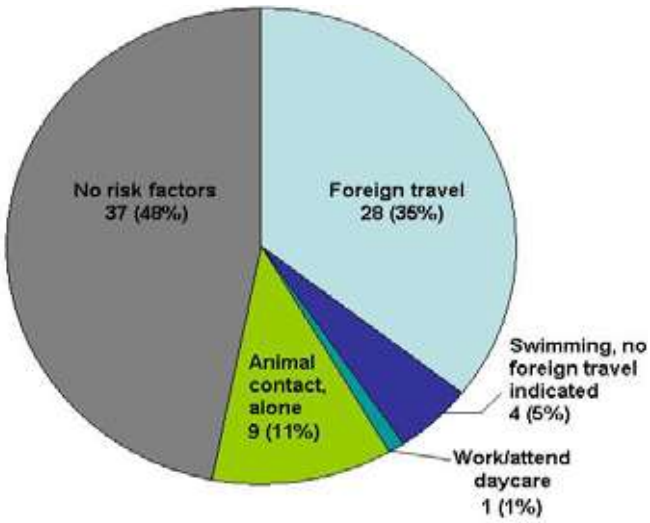
Shiga-toxin Producing *Escherichia coli* (STEC)

Of the ten STEC cases reported in 2009 (eight reported in 2008), five were confirmed, one was a probable case that was linked to a cluster, and four were suspect cases that were only shiga-toxin positive with no culture performed or reported. *E. coli* O157:H7 was isolated from one confirmed case and one was typed as *E. coli* non-O157. Six (60%) cases were male and the median age was three years. Of the ten (100%) cases for which symptom and risk factor information were available all ten reported experiencing diarrhea, five reported fever, and six had abdominal cramps. No cases reported bloody diarrhea, and no one was diagnosed with hemolytic uremic syndrome. No deaths were associated with STEC infections, however, six cases were hospitalized. Regarding potential risk exposures during the incubation period, cases reported consumption of ground beef (3), being on a farm (1), recreational water use (1), and traveling to a foreign country (1).

Giardiasis (*Giardia lamblia*)

In 2009, 106 confirmed cases of giardiasis were reported among Philadelphia residents compared with 99 cases in 2008. Males accounted for 66% of cases. Cases ranged in age from 1 to 79 years with a median age of 26 years. There were no fatalities as a result of giardiasis, however, 12 cases were hospitalized (15%). For the 79 cases with available symptom information, diarrhea was the most commonly reported symptom (81%), followed by abdominal pain (57%), nausea (44%), vomiting (39%), and fever (19%). Of the 79 cases with reported risk factors during their incubation period, 28 cases (35%) traveled or lived in a foreign country, with Africa and Southeast Asia as the most common locations reported, and three (4%) traveled outside of Pennsylvania. Fourteen cases (18%) reported swimming, fifteen cases (19%) reported animal contact, and 1 (1%) attended a day-care center (Figure 12).

Figure 12. Risk Factors Reported by Giardiasis Cases: Philadelphia, 2009



Salmonellosis (*Salmonella* spp.)

A total of 396 salmonellosis cases were reported in 2009 of which 340 (86%) were laboratory-confirmed and 56 were probable cases identified from epidemiologic links. The incidence rate of salmonellosis has remained steady since 2008 at about 28 cases per 100,000 persons. Cases were fairly equally divided by sex (54% female). Disease incidence was highest in those under one year of age. Age–specific rate of infant salmonellosis was much higher in Philadelphia compared with the national rate (235 [51/21,682] versus 118 cases per 100,000 infants) as seen in Figure 14. Twenty-five percent of all cases were hospitalized and there was one fatality. Of the 340 laboratory-confirmed salmonellosis cases, *S.* Enteritidis and *S.* Typhimurium were the most common serotypes, responsible for 138 (41%) and 29 (9%) cases respectively. Antibiotic susceptibility testing was available for 93% (316/340) of laboratory-confirmed cases. Twelve percent [38/305] were ampicillin-resistant, 3% [10/300] were resistant to trimethoprim-sulfamethoxazole, and 1% (4/282) were ciprofloxacin-resistant (Table 7). A little over 20% of cases were part of household *Salmonella* clusters – including households, specific events, or clusters of cases with the same DNA fingerprints but no identified source. In 2009, thirty cases (11%) reported turtle contact, which is slightly lower than the percentage of cases (15%) that reported turtle exposure in 2008. The highlights for salmonellosis trends in 2009 include two outbreaks and use of a new laboratory typing method called multilocus sequence typing (MLST) which assisted in tracing one of two outbreaks to a defined transmission setting. This typing method was beneficial in discriminating cases with the same DNA fingerprint characteristic of both outbreak-related and non-outbreak-related cases.

Sporadic (Non-Outbreak Associated) Cases

Sporadic cases of salmonellosis are not linked to a known point source besides household transmission. In 2009, three hundred eighty-five (97%) of all cases were sporadic. Ninety-three of these sporadic cases lead to household transmission. The median age was 11 years (range: 0 – 90 years). Of those with reported risk factors, seven (2%) reported foreign travel

during the incubation period. One individual died within 13 days of a positive *Salmonella* culture from a sterile site.

Salmonellosis Outbreaks

During 2009, DDC investigated one restaurant outbreak of *S.* Enteriditis and one outbreak of *S.* Typhimurium at a private residence.

In the fall, eight persons consumed food at a restaurant and became sick with salmonellosis. Laboratory testing confirmed *S.* Enteritidis in six cases (4 residing in Philadelphia and 2 from other PA counties) with 2 additional probable cases. These persons consumed meals prepared with an egg-based sauce. The *S.* Typhimurium outbreak involved 4 adults. Laboratory findings identified beef served at a dinner as the contaminated food item.

In both outbreaks, a genetically identical *Salmonella* isolate was cultured from a food product consumed by salmonellosis cases. Figure 13 shows the PFGE patterns of the *Salmonella* isolate from the cases linked to the restaurant outbreak and the implicated eggs. The identical PFGE patterns seen in the cases and eggs assists in corroborating the eggs as the vehicle for the *Salmonella*. PDPH DDC and Environmental Health Services, PA DOH and Department of Agriculture worked together to identify the source of the contamination and rectify issues at the source of the food product.

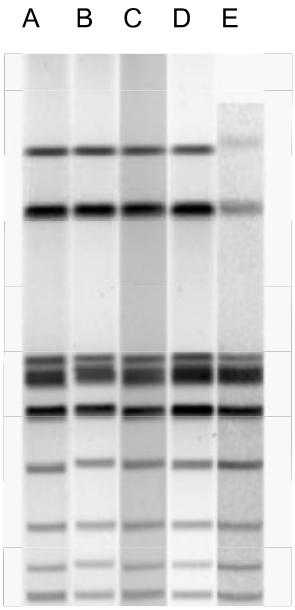


Figure 13. PFGE Pattern of Restuarant Outbreak. PFGE pattern for *Salmonella* isolates obtained from cases (lanes A,B,C,D) and from eggs used at the restuarant (lane E)

Figure 14. Age–Specific Salmonellosis Rates: Philadelphia, 2000 to 2009

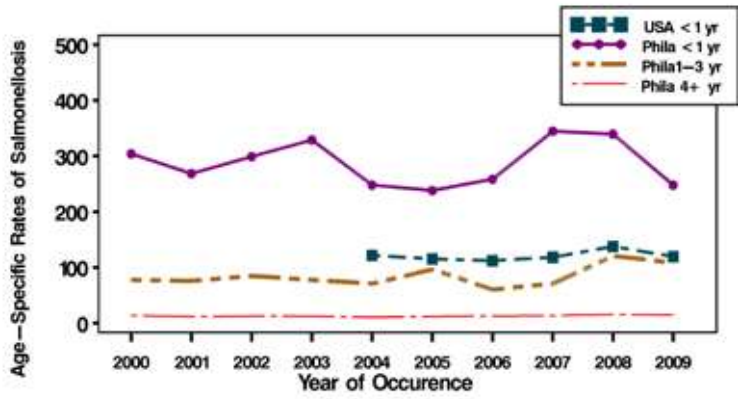
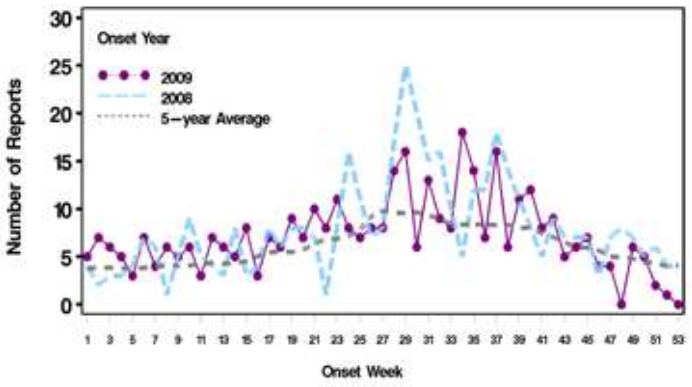


Figure 15. Number of Salmonellosis Reports by Week of Onset: Philadelphia, 2008, 2009 and 5–Year Moving Average



Typhoid Fever (*Salmonella enterica* serovar Typhi)

Typhoid fever is a potentially life-threatening illness caused by Salmonella Typhi (*Salmonella enterica* serovar Typhi, or S. Typhi). In 2009, 2 cases were reported. The cases were confirmed by the isolation of S. Typhi from the stool. Symptoms experienced were fever and diarrhea. The age range was 9-14 years. One traveled to India, the other travel history is unknown.

Shigellosis (*Shigella* spp.)

During 2009, PDPH received 1,051 reports of shigellosis, of which 742 (71%) were culture-confirmed. For *S. sonnei*, ampicillin-resistance is currently 64% and trimethoprim-sulfamethoxazole resistance is 17%, which includes intermediate resistance (Table 7). In the summer of 2008, about 30 cases were linked to a daycare outbreak. All were *S. sonnei* infections and had specific DNA fingerprints. The map (Figure 16) shows the ZIP codes of the highest case rates. The impact of the outbreak can be seen in Figure 18. Intermittent DNA fingerprint analysis has shown that the primary circulating strain of *S. sonnei* was the same as the daycare outbreak pattern. The 2009 cases were grouped into two categories: sporadic and community-wide. Categories were determined by PFGE pattern and/or epidemiological linkage. No fatalities were reported.

Sporadic (Non-outbreak Associated) Cases

Fifteen cases were considered sporadic since they were not epidemiologically-linked or genetically-linked to other cases. Four cases reported travel during their incubation period (Dominican Republic, India, Israel, and Ivory Coast).

Community-wide Transmission of Shigellosis

Sixty-five percent of cases (673/1036) belonged to a household or outbreak with two or more symptomatic cases. During shigellosis outbreak years (2003, 2008, and 2009), individuals 1-4 years were the most affected age group, as shown in Figure 17.

Such a widespread and diffuse outbreak made it difficult to tailor prevention strategies. PDPH released public health announcements, health alerts, and press releases to notify health care providers and the public of the outbreak.

Figure 16. Rates of Shigellosis per 100,000 Population by ZIP code: Philadelphia, 2009

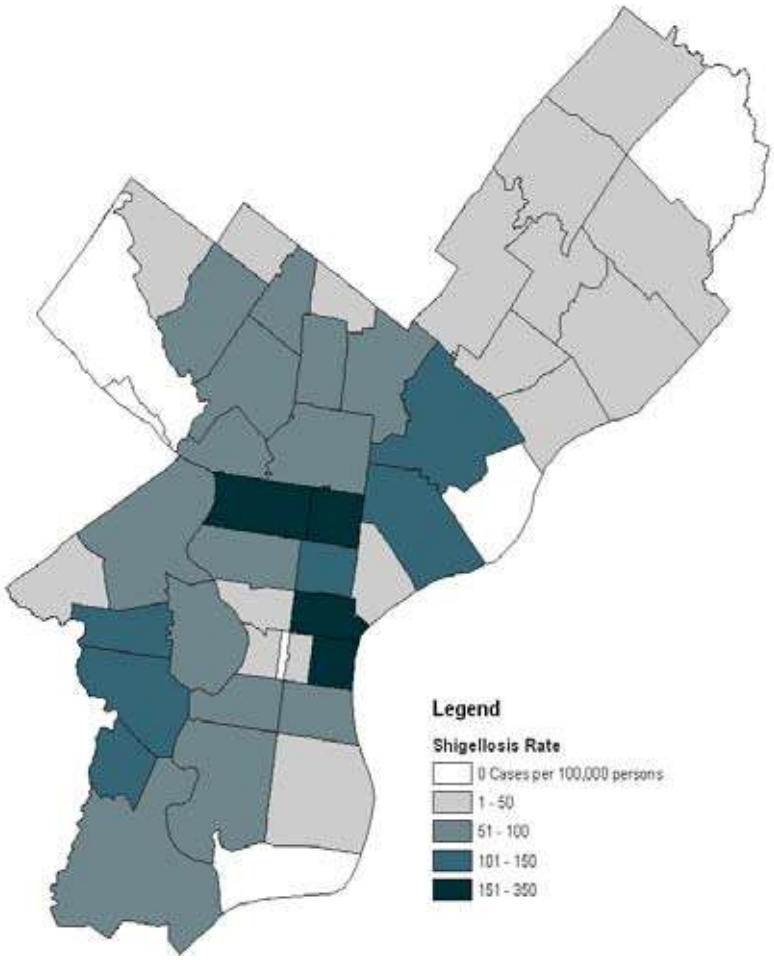


Figure 17. Age–Specific Shigellosis Rates: Philadelphia, 2000 to 2009

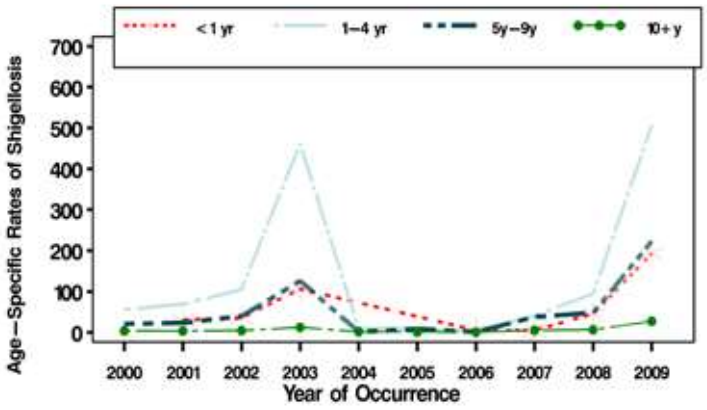


Figure 18. Number of Shigellosis Reports by Week of Onset: Philadelphia, 2008, 2009 and 5–Year Moving Average

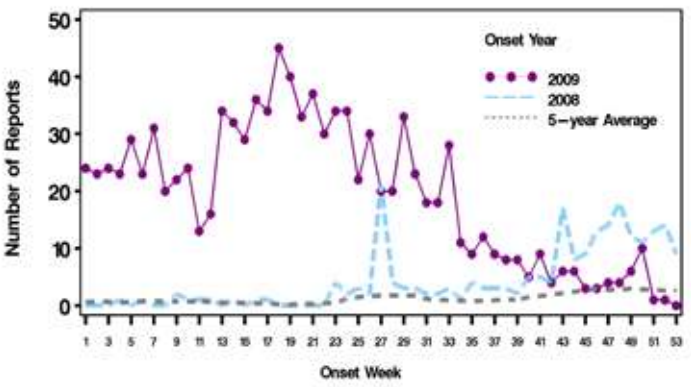


Table 6. Characteristics of Shigellosis Cases: Philadelphia, 2009

	Patient Characteristic							*Shigella spp.* Characteristics
	Total	**Confirmed n (%)**	**Probable n (%)**	**Median age (range)**	**Diarrhea n (%)**	**Hospi-talized n (%)**	**Daycare Exposure n (%)**	**Serotypes**
Sporadic	15	13 (87)	2 (13)	27 years (1 y - 81 y)	10 (83)	1 (6)	1 (7)	*flexneri* (10) *boydii* (2) *dysenteriae* (1)
Community-Wide	1,036	729 (70)	307 (30)	12 years (0 y - 84 y)	819 (94)	37(4)	270 (26)	*sonnei* (665)

Table 7. Antibiotic Resistance of Selected Enteric Pathogens: Philadelphia, 2009

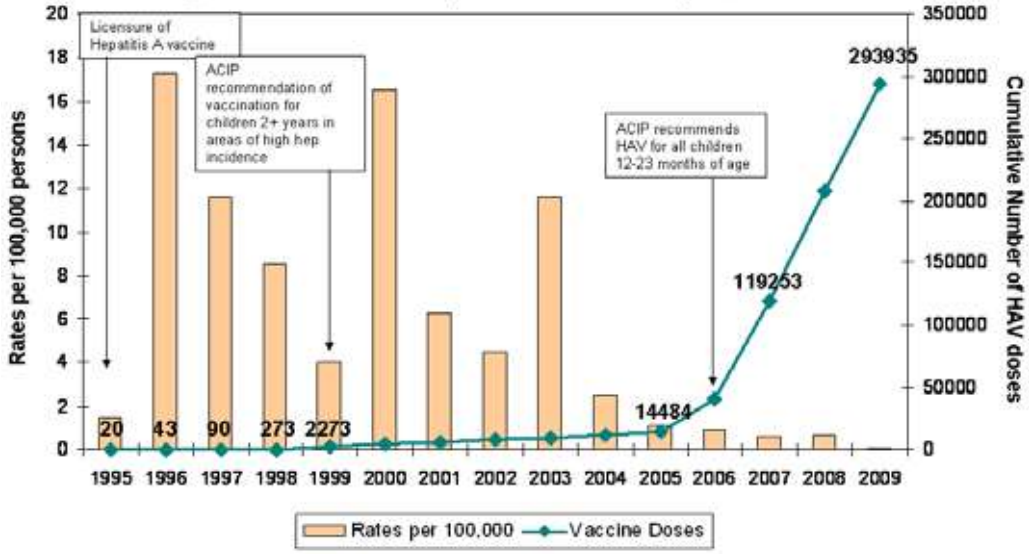
Pathogen	Antibiotics Tested	Total Tested	Resistant		Intermediate	
			n	(%)	n	(%)
Campylobacter						
	Ciprofloxacin	32	11	(34)	0	(0)
	Erythromycin	22	3	(14)	0	(0)
	Trimethoprim-Sulfamethoxazole	4	1	(25)	0	(0)
Salmonella						
	Ampicillin	305	38	(12)	0	(0)
	Ceftriaxone	91	0	(0)	4	(10)
	Ciprofloxacin	282	3	(1)	1	(1)
	Erythromycin	4	0	(0)	1	(25)
	Trimethoprim-Sulfamethoxazole	300	10	(3)	0	(0)
Shigella						
	Ampicillin	607	391	(64)	4	(1)
	Ceftriaxone	0	0	(0)	0	(0)
	Ciprofloxacin	661	5	(1)	0	(0)
	Erythromycin	6	0	(0)	2	(33)
	Trimethoprim-Sulfamethoxazole	681	112	(16)	4	(1)

Viral Hepatitis *Infections*

Hepatitis A

In 2005, ACIP recommended that all children aged 12-23 months should receive the hepatitis A vaccine (HAV). Hepatitis A rates in Philadelphia have been decreasing dramatically since 2003 (Figure 19). In 2009, DDC investigated 100 reports of suspect hepatitis A infections or positive IgM hepatitis A virus tests. Of these, 2 were found to be confirmed acute hepatitis A cases. The median age was 36 years. Reported symptoms were consistent with hepatitis A infections: jaundice, nausea, vomiting, fatigue and abdominal pain. There were no fatalities. One case reported foreign travel within their incubation period to the Middle East. No other common hepatitis A risk factors such as consumption of raw shellfish or recent needle exposure were reported.

Figure 19. Rates of Hepatitis A: Philadelphia, 1995-2009

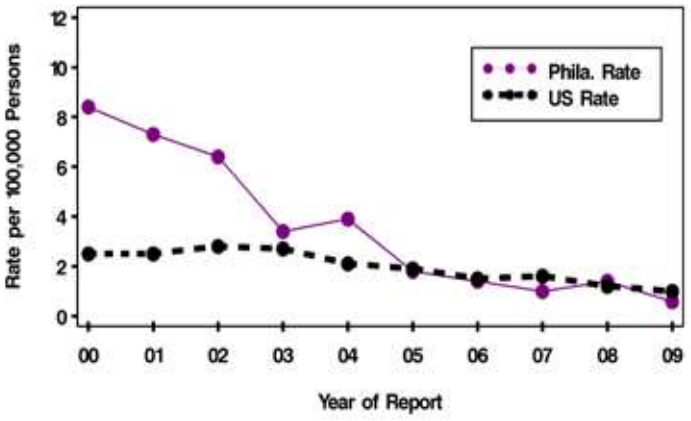


Acute and Chronic Hepatitis B

Acute Hepatitis B

In 2009, there were 9 confirmed case reports of acute hepatitis B virus infection in Philadelphia. This represents a dramatic decrease over the past decade (Figure 20) when at the height there were 134 cases reported in 2000. The median age of acute HBV cases was 34 years (range: 26-60 years). Six (67%) cases were male. Eight (89%) of the nine individuals had evidence of jaundice and the other case had elevated liver enzymes. Five of the individuals were known to be hospitalized. Less than 5 individuals reported either one or more of the following risk factors in the six months prior to infection: greater than 1 sex partner, use of street drugs (2), getting tattooed, and having dental work. None of the individuals were known to be vaccinated.

Figure 20. Rates of Acute Hepatitis B: Philadelphia and US, 2000 to 2009



Chronic Hepatitis B

CHANGE IN CDC CASE DEFINITION: In 2007, the CDC expanded the chronic hepatitis B case definition to allow for probable case identification based on initial laboratory results (HBV DNA, envelope antigen [HBeAG], or surface antigen [HbsAg] detection). Chronic hepatitis B cases can be confirmed with a second positive laboratory test six months after the initial test.

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. Further expansion of outreach and education regarding HBV transmission, and testing and vaccination of contacts at risk are targets for the coming years.

During 2009, PDPH received 1,703 reports of potential chronic hepatitis B infections, of which 1,043 were newly reported cases and 660 were newly confirmed chronic hepatitis B infections. Of the newly reported probable chronic case reports with age or sex information, 54% were males and the median age was 40 years (range: 1-101years). Of the newly reported confirmed chronic case reports with age or sex information, 51% were males and the median age was 42 years (range: 6-94 years).

Perinatal Hepatitis B

In 2008, the most recent completed year, 162 live infants were born to women with chronic HBV who reside in Philadelphia (Table 8), which is 47% higher compared to 2007 (110 reports). The increase in case counts was largely due to improved surveillance methods. In 2008, 51% of women with chronic HBV originated from Asian countries. All infants received the birth dose of HBV vaccine and HBIG within one calendar day of birth. More than 84% of the infants received HBIG and three doses of vaccine by the 8 months of age and 94% received all immunoprophylaxis (HBIG and three vaccine doses) by 1 year of age. Complete serological testing was not possible for three infants whose family refused serology, ten infants transfered OOJ unassigned and eleven infants moved out of US. Of the 138 infants with serological results, 135 infants (98%) were found to be immune and three were susceptible cases (2%). Repeat vaccination with the HBV vaccine series was performed on these susceptible infants. During home visits, 167 household contacts of HBsAg+ mothers were identified, educated, and offered free serological testing. Of the

Table 8. Comparison of Perinatal Hepatitis B, Philadelphia 2005-2008

	2005	2006	2007	2008
Total Mother-Child Pairs Followed	138	119	110	162
Total Children Receiving HBIG within One Calendar Day of Birth	138 (100%)	118 (99%)	110 (100%)	162 (100%)
Total Children Receiving Birth HBV within One Calendar Day of Birth	138 (100%)	119 (100%)	110 (100%)	162 (100%)
Total Children Receiving 3 HBV Vaccines in 1 Year	138 (100%)	115 (97%)	109 (99%)	153 (94%)
Children who are HBV+ at Screening	1 (1%)	2 (2%)	1 (1%)	0 (0%)
# Household Contacts Identified and Educated	188	197	187	167
#Household Contacts Tested for HBsAg and HB Surface Antibody	153	151	144	117
# Household Contacts Susceptible	21	16	15	17
# Susceptible Household Contacts Vaccinated	17	11	9	9

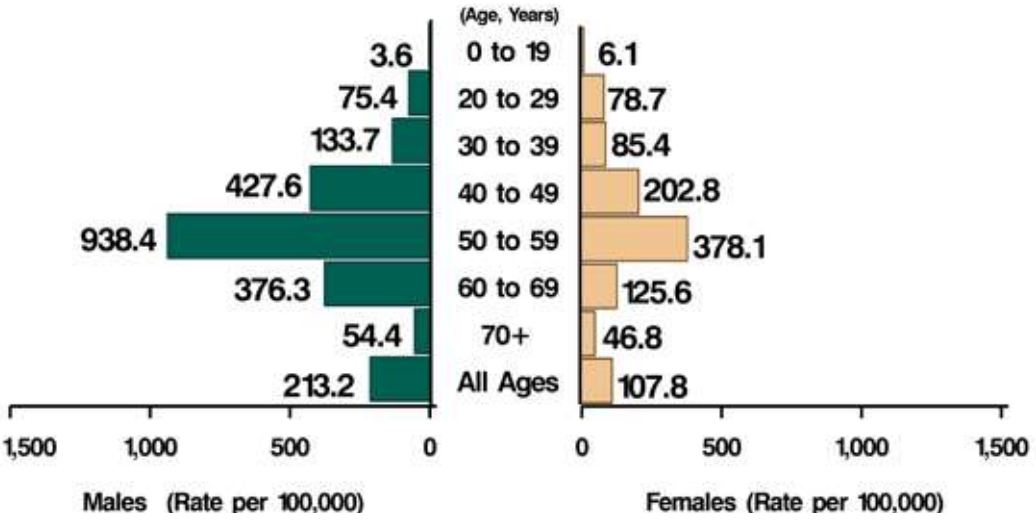
117 contacts tested, 15 (13%) were positive for HBV infection, 85 (73%) were immune, and 17 (15%) were susceptible. Nine (53%) of the 17 susceptible household contacts were vaccinated by DDC staff.

Complete 2009 PHBPP results will not be available until 2011. The PHBPP identified 202 women with chronic HBV in 2009 report year, and learned of 184 infants born to mothers with chronic HBV infections in 2009. Four of them transferred out of program. The total infant cases managed by the program are 180, and as of October 2010, 162 received a birth-dose of HBV vaccine and HBIG. Data collection, follow-up, and serologic testing will continue as the year progresses.

Hepatitis C

In 2009, DDC added 4,879 reports to the HCV registry, which was 0.2% higher than in 2008. There were no acute HCV infections reported during 2009. Of those individuals with test results reported in 2009, 2,439 (50%) met the case definition for a confirmed case, 51 (1%) were considered probable (positive antibody test and elevated liver enzymes, but lacking additional confirmatory testing), and 2,389 (49%) only had positive HCV antibody tests. Of the confirmed reports with information on sex, 1,514 (63%) were male. Of the confirmed reports with age, median age was 51 years (range: 10 months - 97 years).

Figure 21. Rates of Newly Confirmed Hepatitis C Virus, Past or Present Infection per 100,000 Population by Age and Gender: Philadelphia, 2009



Vector-borne *Diseases*

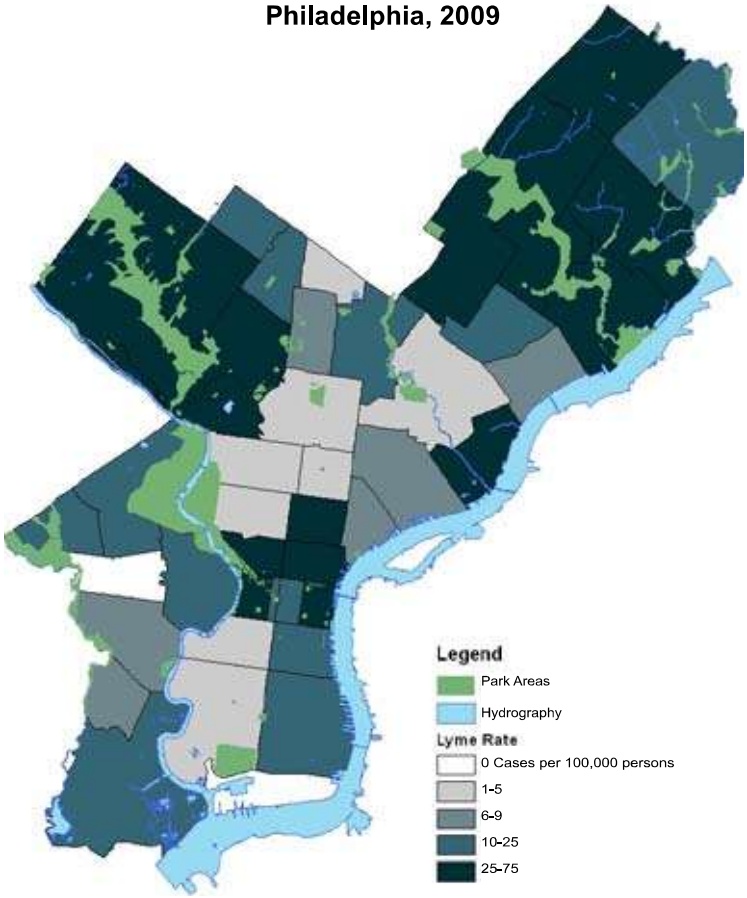
Lyme Disease *(Borrelia burgdorferi)*

CHANGE IN CDC CASE DEFINITION:
In 2008, CDC adopted a new case definition, which includes probable and suspect cases. Probable cases are determined by laboratory criteria and physician diagnosis. A case is deemed suspect when laboratory evidence of infection exists (Lyme IgG immunoblot) without clinical information. Lyme IgM immunoblot are not reliable to determine late-stage Lyme disease.

In 2009, clinical laboratories reported positive Lyme disease serologic tests on 1,353 unique individuals. Upon investigation 363 reports fit the CDC case definition, 236 (65%) of these individuals were confirmed cases, 14 (4%) were probable cases, and 113 (31%) were suspect cases. The median age among all cases was 39 years (range: 6 weeks to 87 years) and 203 cases (58%) were male.

Among the 236 confirmed cases, 70% had erythema migrans, arthritis (41%), Bell's palsy (4%), radiculopathy (3%), lymphadenopathy (1%) and carditis (1%). The timing of laboratory test support the known increases during summer and coincides with increased outdoor activity and potential exposure to *B. burgdorferi*-infected ticks. The highest numbers of cases were from the northeast and northwest areas of the city bordering two of the city's major parks, Wissahickon River Valley and Pennypack (Figure 22).

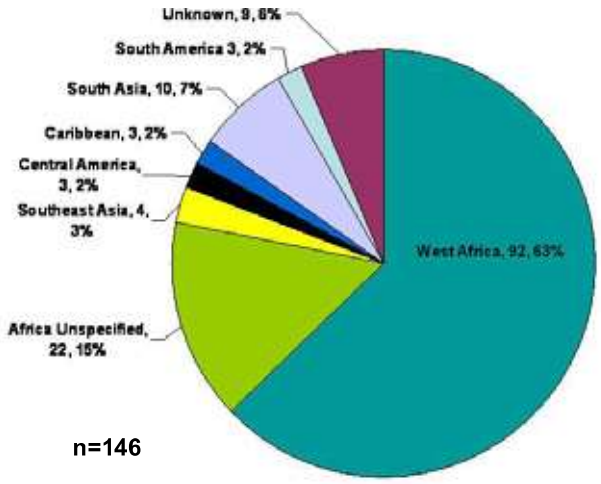
Figure 22. Rates of Lyme Disease per 100,000 Population by ZIP code: Philadelphia, 2009



Malaria (*Plasmodia* spp.)

In 2009, sixteen confirmed cases of malaria were reported to PDPH. Of the 16 cases reported, eleven (69%) were male. The median age was 21 years (range: 1-63 years). Eight cases had parasitemia with *Plasmodium falciparum*, *P. ovale* (1), *P. vivax* (1), and 6 were unknown. Fifteen of the 16 confirmed cases reported travel to malaria-endemic countries prior to the onset of symptoms (to West African countries [11], New Guinea [1], Haiti [1], Thailand [1], and Costa Rica [1], while the remaining case reported traveling only to Florida). Of the 15 cases with prophylaxis information, eight (53%) reported no prophylaxis prior to travel. In the last 10 years, more than 60% (92/146) of cases reported travel to West Africa (Figure 23).

Figure 23. Countries Traveled by Malaria Cases: Philadelphia, 2000-2009



West Nile Virus

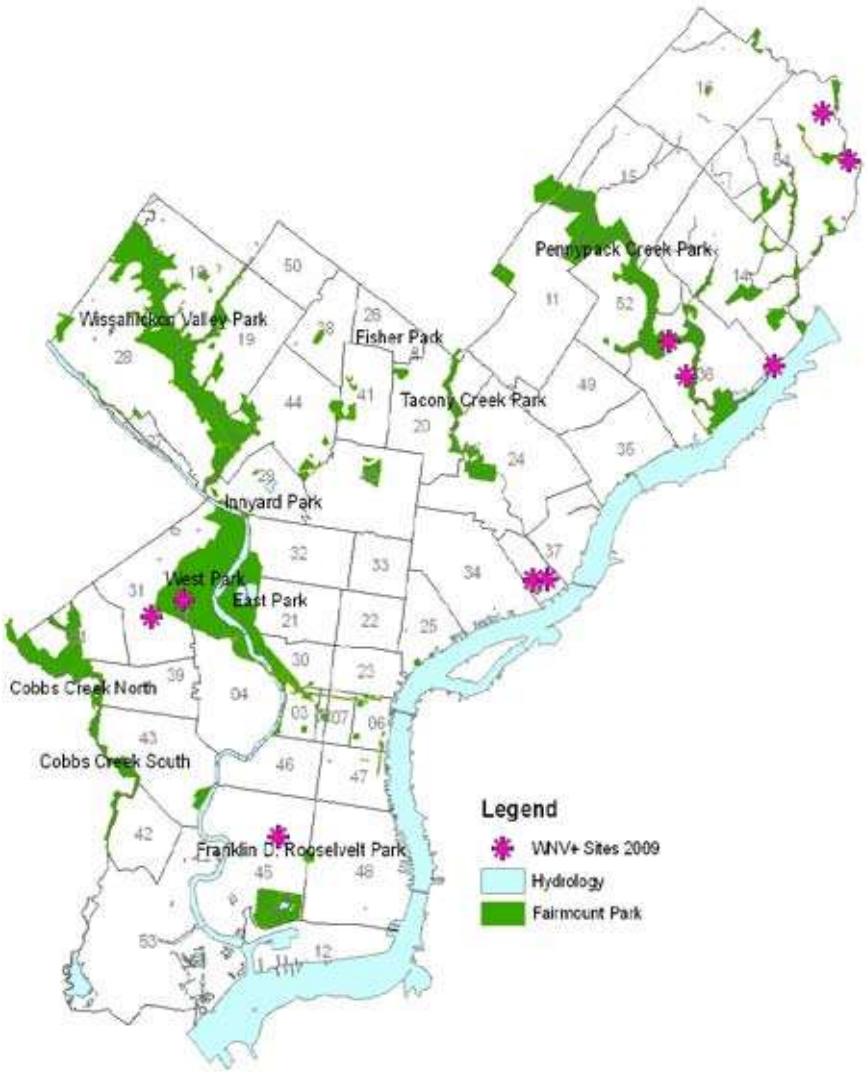
WNV prevention necessitates a close partnership between DDC and the PDPH Environmental Health Services (EHS) Vector Control Program. EHS performs surveillance for WNV in mosquitoes, as well as targeted treatment of mosquito breeding sites, which is the primary means of reducing WNV transmission. From May 30 to September 15, 2009, the EHS program performed 69 larval control events and treated 47,887 catch basins (storm-water sewers) with larvicide in order to kill mosquito larvae. EHS also conducted 28 adult-focused treatments including barrier treatments for control and ultra low volume spray events between June and October 2009. During this period, 12 sampled mosquito pools in locations throughout the city tested positive for WNV, indicating that the virus was still circulating within Philadelphia.

The current case definition for WNV infection includes both neuroinvasive and non-neuroinvasive (e.g. WNV fever) disease. In 2009, there were 373 neuroinvasive, 322 non-neuroinvasive, and 25 cases classified as other clinical/non specified WNV reported nationally.

Philadelphia did not report any human cases of WNV in 2009; however, eight cases of WNV infection were reported to PDPH in 2008.

DDC and EHS collaborate when WNV infection is identified in humans. EHS surveys the residential area where the case lives, sets mosquito traps, tests mosquitos for WNV, and applies insecticide. Figure 24 shows the sites where WNV-positive mosquitos pools were located.

Figure 24. West Nile Virus (WNV) -- WNV Positive Mosquito Sampling Sites: Philadelphia, 2009



Immunizations and *Vaccine-Preventable Diseases*

Calendar year 2009 presented unique challenges for the Immunization Program, unlike those experienced in previous years. H1N1 influenza and seasonal influenza campaigns were executed simultaneously while maintaining day-to-day Immunization Program functions, such as the Vaccines For Children (VFC) program, Vaccines for Adults At Risk (VFAAR) program, and significantly expanding functionality and data capture in the KIDS Immunization Registry.

Childhood Vaccines

Through the Federal Vaccines For Children program (VFC), the Immunization Program provides over $24 million in no-cost vaccines to nearly 300 health care providers in Philadelphia annually. In 2009, the demand for vaccines increased as providers had to respond to new vaccine requirements put forth by the Philadelphia Board of Health. These requirements included 2 doses of Varicella, 1 dose of TDaP, and 1 dose of Meningococcal vaccine for entrance into sixth grade in all Philadelphia schools.

Adult Vaccines

A number of vaccines are recommended for adults as well, with indications determined by health condition, age, lifestyle, and occupation. The Vaccines for Adults At Risk program (VFAAR) provides vaccines to select health care providers who serve adults at high risk for vaccine preventable diseases. In 2009, PDPH was able to expand the VFAAR program by offering adult vaccines through the District Health Centers.

KIDS Immunization Registry

The KIDS Immunization Registry is a web-based system that has served as a centralized repository of immunization information on all residents 0-18 years of age who receive vaccinations in Philadelphia. In 2009, the Philadelphia Board of Health passed regulations expanding the KIDS Registry to include immunizations administered to individuals 19 years of age and older. This regulation officially makes the registry a “cradle-to-grave” immunization information system. The Immunization Program has begun populating the registry with H1N1 influenza doses administered to adults during the 2009-10 flu season and will be working with providers on reporting other vaccine doses administered to adult patients.

H1N1 Pandemic

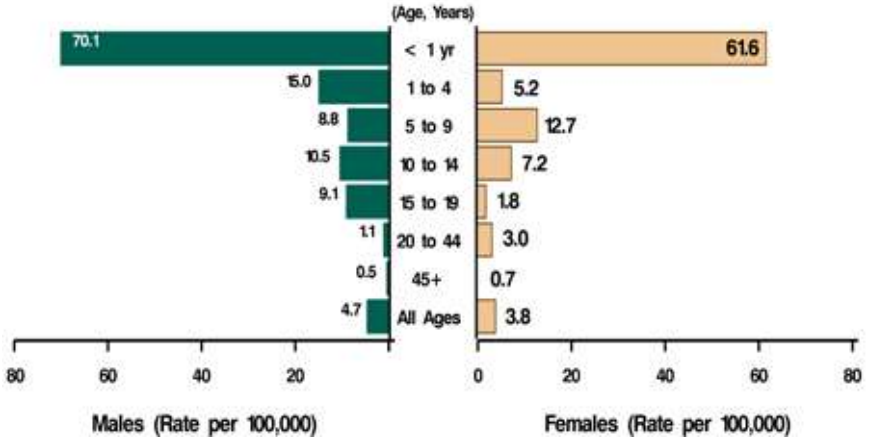
To effectively respond to the 2009-10 H1N1 pandemic, over 400,000 doses of H1N1 vaccine was provided to physicians, clinics, hospitals, and a variety of other sites across the city at no cost. The pandemic response included a school-based initiative where vaccine was provided to school-aged children in public, private, parochial, and charter schools throughout Philadelphia. The school-based initiative allowed for successful vaccination of over 30,000 students. In fact, children aged 5-18 received the largest amount of H1N1 vaccine distributed in Philadelphia (30%).

For more information on the Immunization Program, please visit our website for more information:
https://kids.phila.gov/

Pertussis *(Bordetella pertussis)*

The 65 pertussis reports received by PDPH in 2009 included 37 confirmed and 28 probable cases, yielding a rate of 4.2 cases per 100,000 population. The highest rate was among infants (Figure 25). Thirty-two (49%) of these cases were female, including ten women of childbearing age (15-44 years old). Of the 55 cases for which symptom information was available, the most commonly reported symptoms included paroxysmal cough (76%-37/49), whoop (56%-29/52), post-tussive vomiting (65%-36/55), and apnea (44%-23/52). Forty-eight (74%) cases had documented cough lasting ≥ 2 weeks. Fifteen (23%) cases were hospitalized, 10 of which were <1 year old. No fatalities were reported. Among the confirmed cases, 28 (76%) cases had appropriate laboratory testing (pertussis PCR or culture), while the remainder of confirmed cases had documented cough lasting ≥ 2 weeks and contact to another case.

Figure 25. Rates of Pertussis per 100,000 Population by Age and Gender: Philadelphia, 2009



Thirteen clusters were identified in 2009. All involved disease transmission in a household. On average, each household cluster involved 3 individuals (range: 2-5 individuals).

In the 21 cases under five years of age (17 confirmed and 4 probable), vaccination was not always appropriate for the child's age (Table 9). Of the 23 cases between 5-19 years with vaccination information, 9 were up-to-date (39%). Sufficient vaccination information was not available to determine how many cases 20 years and older were appropriately vaccinated.

Table 9. Doses of Pertussis-Containing Vaccine Given to Pertussis Cases by Age

Age in Months	# in Age Group	# of Pertussis-Containing Vaccine Doses Received Prior to Illness				
		0	1	2	3	4
Under 2	7	**7**	0	0	0	0
2-5	6	2	**4**	**0**	0	0
6-11	0	0	0	0	**0**	0
12-59	8	0	1	0	2	**3**

Bolded red numbers represent age-appropriate vaccine dose

Mumps

In 2009, 39 cases of suspected mumps were reported to DDC, none of which were confirmed. Suspected mumps case definition includes parotitis in the absence of laboratory testing for mumps. Five of the suspected cases presented with parotitis post live mumps vaccination.

Measles

Philadelphia had one confirmed measles case in 2009. This case was not immune to measles and acquired disease during a trip to India. Consistent with measles, this infection began with 5 days of general illness followed by development of a rash that began on the face and spread down the body. Numerous people exposed to this case were subsequently screened for measles. There were no secondary cases.

Prior to this case, the most recent cases of measles in Philadelphia were two travel-related cases (Mongolia in 2001 and Nigeria in 1998) and seven cases in 1996, six of whom were associated with a homeless shelter.

Rubella

Philadelphia had no reported cases of rubella in 2009. The last two cases of rubella infection recorded for Philadelphia occurred in 1998 and 1996.

Varicella-Zoster Virus

Varicella Vaccine Coverage

According to the KIDS Immunization Registry, varicella vaccination coverage rates ranged from 69% to 83% for children 1 to 3 years of age in Philadelphia during 2009 (Figure 26). In Fall 2009, school entry regulations in Philadelphia required 2 doses of varicella vaccine for all children entering kindergarten, 1st grade, and 6th grade, while 1 dose continued to be required for all other grades. These requirements are essential for maintaining high single-dose varicella vaccination coverage rates and increasing 2-dose coverage rates among children in Philadelphia.

City-wide Passive Varicella Surveillance

During 2009, 326 varicella cases (confirmed and probable) were reported to VASP though passive surveillance from the city outside of West Philadelphia, marking a 7% decrease from 2008 (349 cases). Similar to trends from the West Philadelphia active surveillance area, the city-wide declines may be attributed to increasing 2-dose varicella vaccination coverage. Median age for the reports was 7 years (range: 2 weeks-91 years). Four of the varicella cases reported in 2009 were hospitalized: 3 older cases (≥35 years) who were unvaccinated and an 11-month-old who was too young for vaccination. Fifty-six percent (184) of the reported varicella cases had been vaccinated, including 50 children aged 4 to 15 years who developed breakthrough infections after receiving a second dose of vaccine. As expected, vaccinated cases occurred in age groups with high vaccine coverage, particularly children aged 1 to 14 years (Figure 27).

Figure 26. Varicella Vaccination Coverage Among Children by Age and Dosage: Philadelphia, 2009

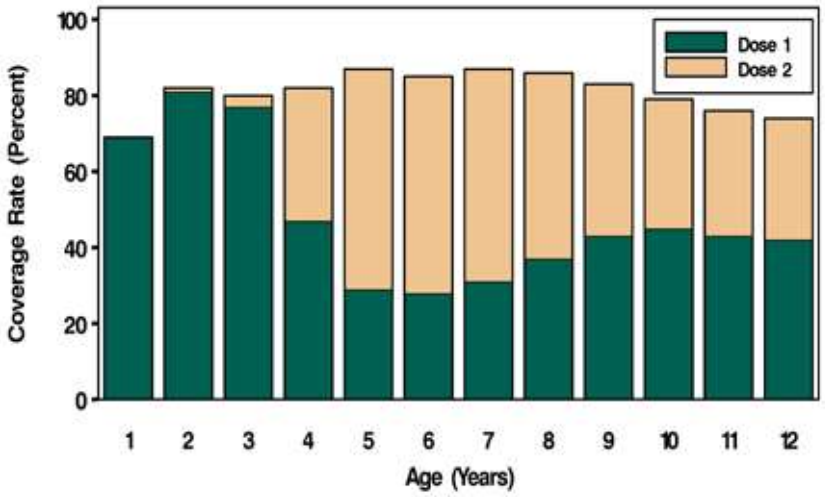
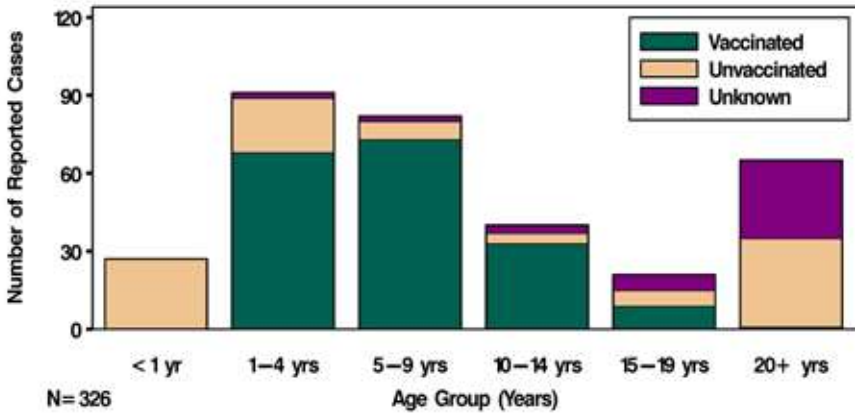


Figure 27. Citywide Varicella Reports by Age Group and Varicella Vaccination Status: Philadelphia, 2009



Varicella Active Surveillance in West Philadelphia

Through an active surveillance network maintained in West Philadelphia (VASP), 41 confirmed varicella cases were reported during 2009. Varicella disease remained markedly lower than in the early vaccination era – a 97% reduction from 1995 (Figure 28). In 2009, 24 (59%) varicella cases were breakthrough varicella infections in previously vaccinated individuals with 8 breakthrough cases occurring among 2-dose recipients. No varicella cases from 2009 were hospitalized as a result of their illness.

Herpes Zoster Active Surveillance in West Philadelphia

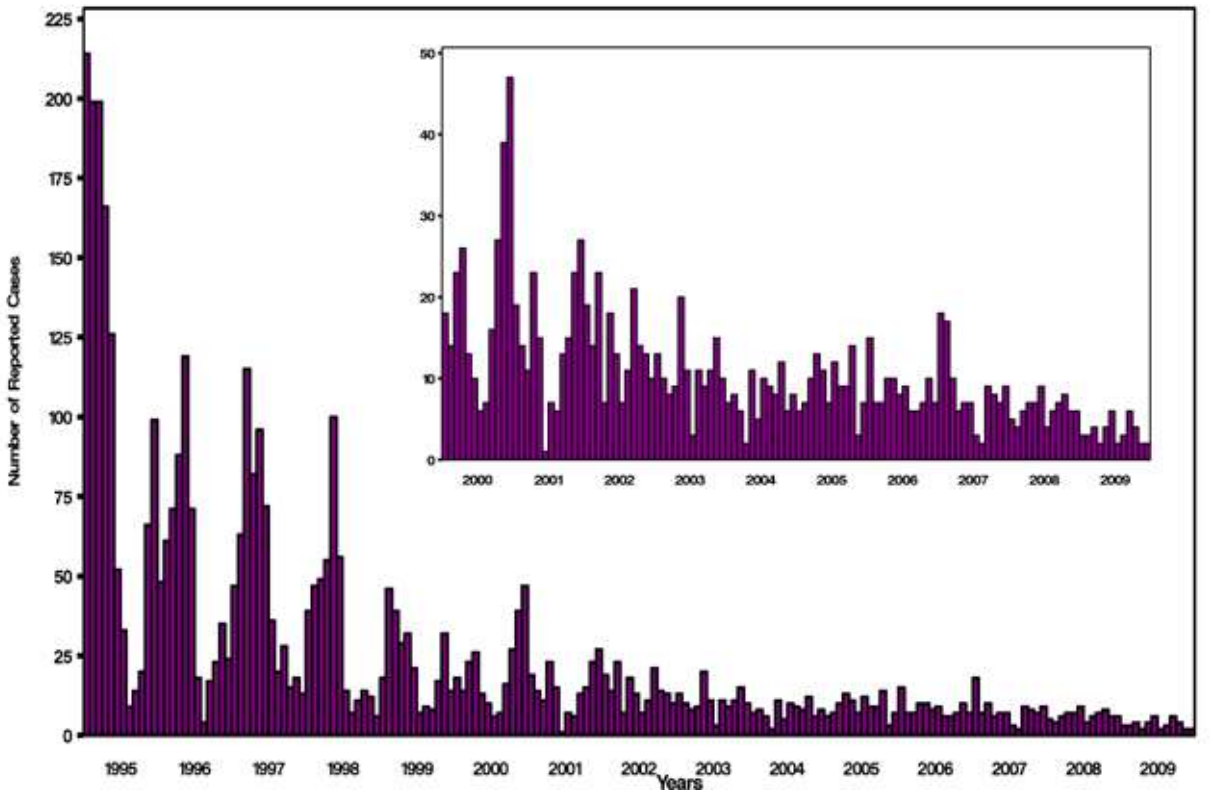
Herpes Zoster Surveillance Among Children and Adolescents

During 2009, VASP received 17 confirmed HZ cases among West Philadelphia residents <20 years of age (median age 17 years; range: 19 months to 19 years). No HZ <20 years of age were hospitalized in 2009.

Adult Herpes Zoster Surveillance (>50 years old)

In 2009, VASP received 154 confirmed HZ cases among West Philadelphia residents 50 years of age and older, which was a slight decrease (19%) from 2008. In 2009, 23 (15%) HZ cases were classified as having post-herpetic neuralgia (PHN) or persistent pain at the location of the VZV reactivation after the HZ rash had resolved. Of the 154 adult HZ cases occurring during 2009, 13 (8%) were hospitalized, and none of the HZ-related hospitalizations resulted in death.

Figure 28. Reported Cases of Varicella by Month of Onset: West Philadelphia Active Surveillance Area, 1995 to 2009

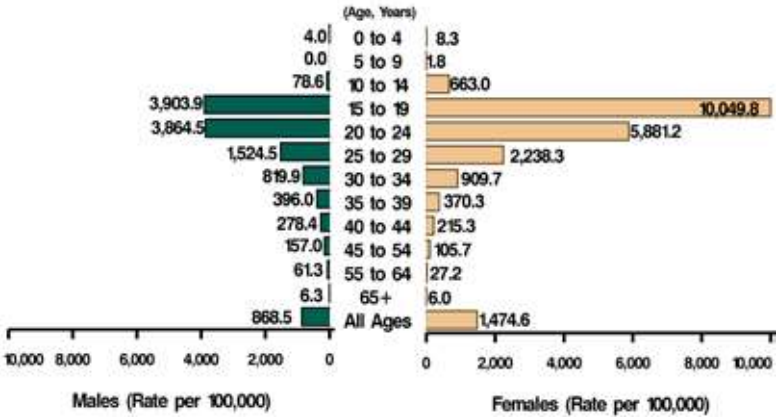


Sexually Transmitted *Diseases*

Chlamydia trachomatis

In 2009, there were 18,104 positive *Chlamydia trachomatis* results reported to PDPH, including 11,943 (66%) performed as part of the PDPH STD screening programs. Rates of reported chlamydial infection in 2009 continue to be much higher in women than in men and are highest in 15-19 year olds, as can be seen in Figure 29. Positive chlamydia results among males increased 17.1% between 2008 and 2009 (6,124 cases in 2009 compared to 5,231 cases in 2008). At the same time, chlamydial infection among women increased 1.7% (11,980 cases in 2009 compared to 11,781 cases in 2008). This male increase is likely the reason for a 6.4% increase in overall chlamydia positivity between 2008 and 2009.

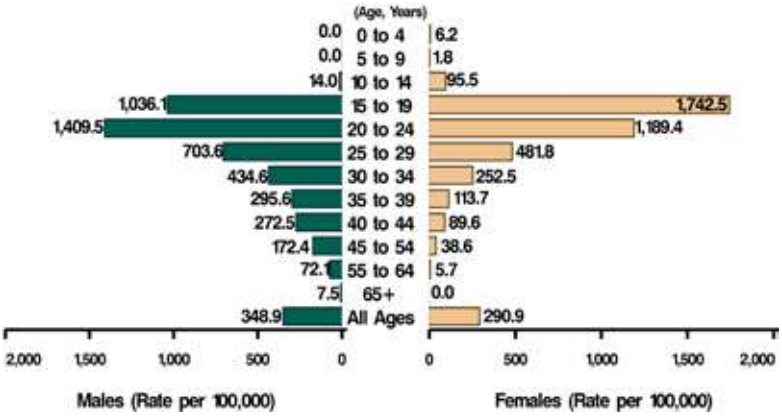
Figure 29. Rates of Chlamydia per 100,000 Population by Age and Gender: Philadelphia, 2009



Gonorrhea (*Neisseria gonorrhoeae*)

In 2009, 4,823 cases of gonorrhea were reported in Philadelphia, a 3% (-127 cases) decrease from 2008. Reports of gonorrhea in 2009 were slightly higher for males (51%), and the highest rates were seen among 15-19 year olds (Figure 30). In 2010, there were 6,533 cases of gonorrhea reported in Philadelphia, a 35% (+1,710 cases). This increase is among all ages and sexes, suggesting a true increase in disease. Every year, DDC submits 300 *N. gonorrhoeae* isolates from male STD clinic attendees to the CDC Gonococcal Isolate Surveillance Project (GISP) for antibiotic susceptibility testing. Of the 283 isolates submitted in 2009, 29 (10%) were found to be ciprofloxacin resistant (MIC ≥1), a lower percentage than was reported for the nation as a whole in the most recent GISP report (16% in 2007). To date, there is still no known gonococcal resistance to ceftriaxone, the primary recommended treatment for *N. gonorrhoeae* infections at all anatomical sites. However, national criteria for resistance to ceftriaxone have not been established for this organism. In addition, recent evidence suggests that effective treatment of pharyngeal gonorrhea requires higher doses of ceftriaxone. Therefore, PDPH has begun using 250 mg of ceftriaxone intramuscularly for first-line treatment of gonorrhea. Cefixime (400 mg) remains the only available oral treatment for uncomplicated gonococcal infections of the urethra, cervix, and rectum, but is not recommended for pharyngeal infection.

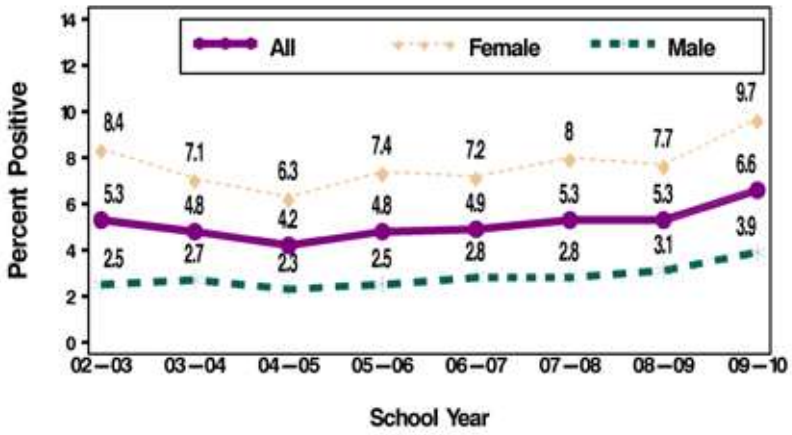
Figure 30. Rates of Gonorrhea per 100,000 Population by Age and Gender: Philadelphia, 2009



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 8 consecutive school years, 130,064 screening tests have been completed on 90,469 students, resulting in 6,664 positive tests for either or both of these diseases. Treatment has been confirmed for approximately 98% 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. During the 2009-2010 school year, the three programs – public school screening, charter school screening, and HRC testing – identified 924 students infected with Chlamydia, gonorrhea, or both, and to date 885 (96.9%) students have documented treatment for these infections.

Figure 31. 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 2009-2010 school year, 625 (9.7%) of the 6,460 females and 299 (3.9%) of the 7,572 males screened were positive for chlamydia only, gonorrhea only, or both infections (Figure 31). This is the highest percent ever of students testing positive in a school year; however, this increase may be due to a change in the educational component of the program, which particularly emphasized ever having sex, including oral sex, as risk factors for STD. Of the male and female high school students who tested positive, 375 (72.3%) were rescreened 3 months after their infection, and 45 (13%) were again positive.

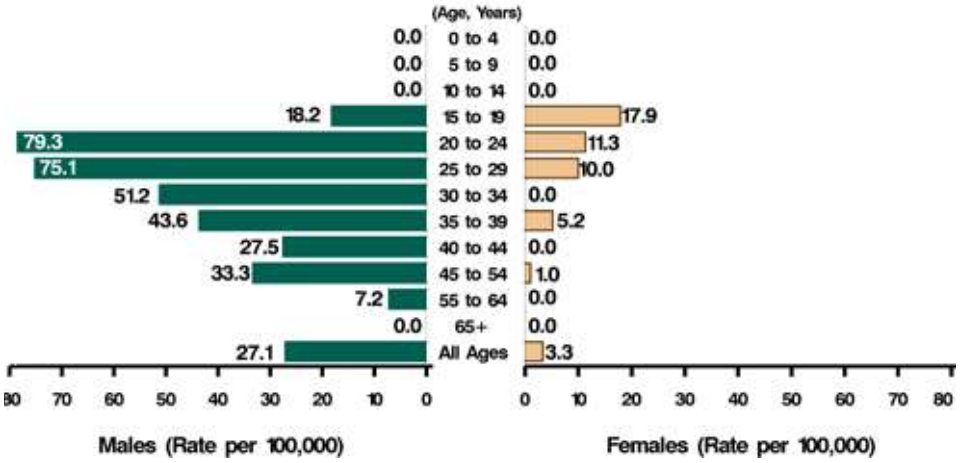
Syphilis *(Treponema pallidum)*

P & S Syphilis Surveillance in Philadelphia

In Philadelphia, infectious syphilis rates have increased dramatically in the last year. In 2009, 218 cases of primary and secondary (P&S) syphilis were reported to PDPH, a 45% increase from 2008. Eighty-one percent of P&S syphilis cases occurred in individuals identifying as Black. As it has been since 2000, in 2009 P&S syphilis was disproportionately found among males (88%, Figure 32). Of the 191 P&S cases among males in 2009, most (132, 69%) were men who reported having sex with men (MSM). Among the 132 MSM with P&S syphilis, 117 disclosed their HIV status - 71 (54%) were HIV positive.

A striking increase in P&S syphilis in Philadelphia occurred this year in young, African American heterosexuals. This increase was most marked in females: P&S syphilis in females increased from 8 cases in 2008 to 27 cases in 2009 (238% increase); 26 of these cases were reported in females of childbearing age (15-40 years). There are likely two simultaneous syphilis epidemics in Philadelphia currently: young African American heterosexuals and MSM.

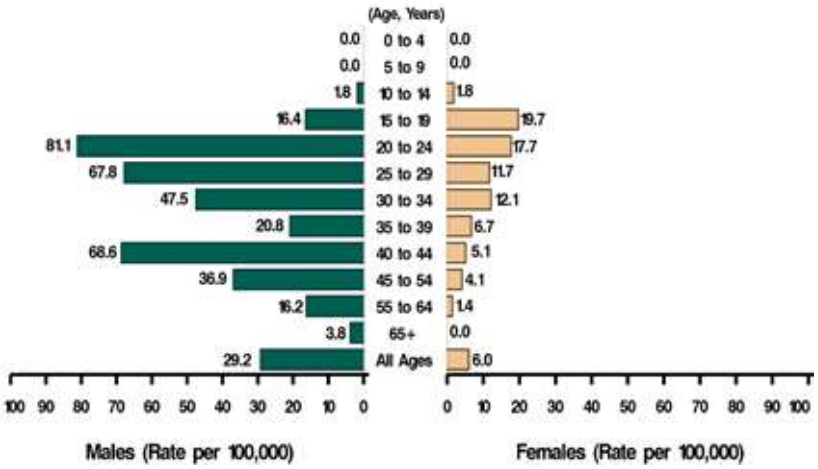
Figure 32. Rates of Primary and Secondary Syphilis per 100,000 Population by Age and Gender: Philadelphia, 2009



Early Latent Syphilis Surveillance in Philadelphia

There were 255 cases of early latent syphilis reported in 2009, a 43% decrease from 2008. Most early latent cases were male (81%, Figure 33).

Figure 33. Rates of Early Latent Syphillis per 100,000 Population by Age and Gender: Philadelphia, 2009

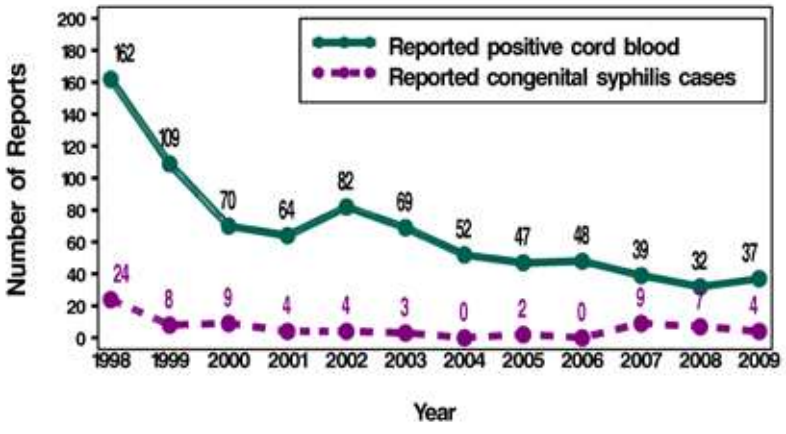


Congenital Syphilis

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 34). However, between 2007 and 2009, PDPH received 20 case reports (9 in 2007, 7 in 2008, 4 in 2009) meeting the surveillance case definition for congenital syphilis.

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 34. Reported Cases of Congenital Syphilis and Positive Cord Blood Tests: Philadelphia, 1998 to 2009



Other Reportable *Diseases and Conditions*

HIV/AIDS

Currently around one million individuals are thought to be living with HIV or AIDS in the US. During 2008, CDC released that an estimated 56,300 new HIV infections occurred during 2006 in the US (Hall HI, et al. JAMA. 2008; 300: 520), which is much higher than previous annual estimates (approximately 40,000 new cases per year). This jump was not due to increases in actual incidence, but rather improvements in HIV testing and analytic methods. More in depth analysis of HIV and AIDS surveillance in Philadelphia can be found at: http://www.phila.gov/Health/pdfs/HIVAIDS_Report.pdf

HIV Surveillance in Philadelphia

Name-based reporting of HIV diagnoses was implemented in October 2005. In 2009, 911 cases of HIV (non-AIDS) were reported to the AIDS Activities Coordination Office (AACO); however, due to continued reporting of prevalent cases this likely overestimates the true number of new infections in Philadelphia. Newly reported HIV (non-AIDS) cases are predominantly male (72.8%), African American (66.4%), and report being men who have sex with men, or MSM (38.4%).

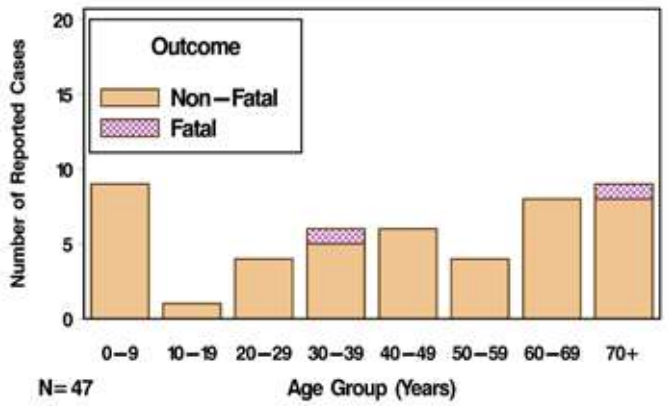
AIDS Surveillance in Philadelphia

In 2009, 216 cases of AIDS were reported to the AACO Surveillance Unit. AIDS in Philadelphia disproportionately affects African Americans (72.6%) as compared to Whites (13.4%) and Hispanics (12.5%). More than three-fourths of cases (77.3%) were among males, and about 75% were among persons 20-49 years of age. MSM contact was the dominant mode of transmission (33.3%) in Philadelphia, compared to heterosexual contact (29.1%) and injection drug use (11.1%). For additional information about HIV/AIDS in Philadelphia, please visit the AACO website: http://www.phila.gov/Health/AACO/

Invasive Group A *Streptococcus* (GAS)

In Philadelphia during 2009, there were 49 confirmed cases of invasive GAS. GAS was isolated from blood in 47 cases (96%), and the source of the remaining two isolates is unknown. Twenty-seven (55%) cases were female and the median age was 48 years (range: 0-88 years). Two individuals died (Figure 35).

Figure 35. Invasive Group A *Streptococcus* by Age Group and Outcome: Philadelphia, 2009



Animal Exposures and Animal Rabies Testing

In 2009, DDC received 1,578 reports of Philadelphia residents exposed to an animal primarily through a bite or scratch. The majority of exposures were bites (95%). Dogs, cats, and bats accounted for 74%, 20%, and 4% of all reported exposures, respectively. For 1,065 (67%) exposures, the animal's owner was located and of those exposures, 243 (23%) exposures were the result of animals within the victim's household. Exposures were equally distributed by gender. Of the 1,445 (92%) reports with the victim's age included, the median age was 24 years with the majority of victims between the ages of 11 and 44 years.

Management of animal exposures and animal rabies testing requires a strong partnership with the PDPH Environmental Health Services Vector Control Unit and the PDPH Public Health Laboratory (PHL). The Vector Control Unit conducts field investigations to observe domestic animals following 10-day quarantine periods and also reviews rabies vaccination status of animals involved in human exposures. The PHL performs rabies testing and in 2009 tested 105 animals by direct fluorescent antibody staining of brain tissue. One animal (raccoon) tested positive for rabies; no human exposure was associated with the animal.

Figure 36. Reports of Animal Exposure per 100,000 Population by ZIP code: Philadelphia, 2009

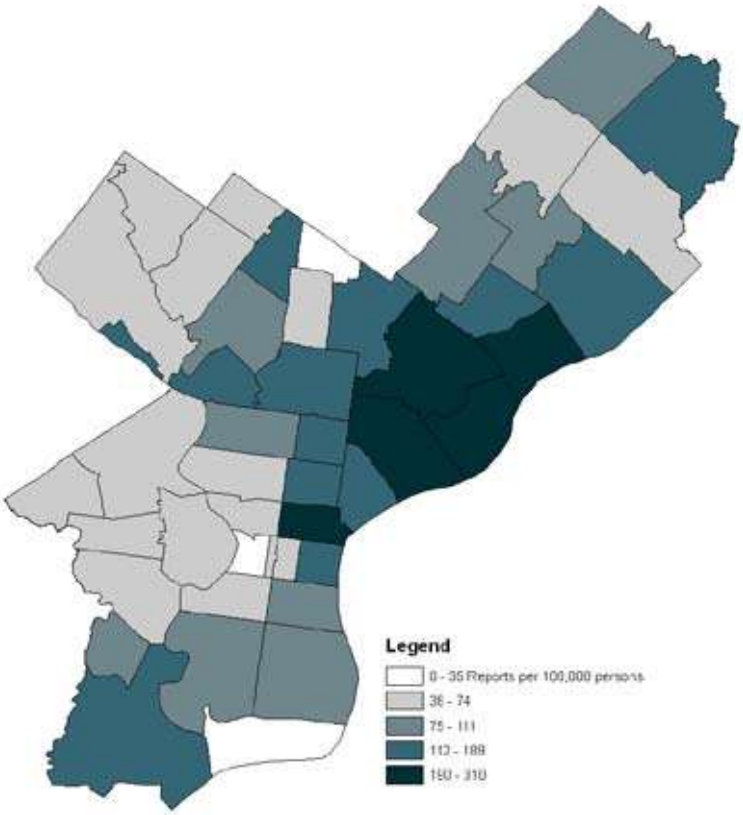
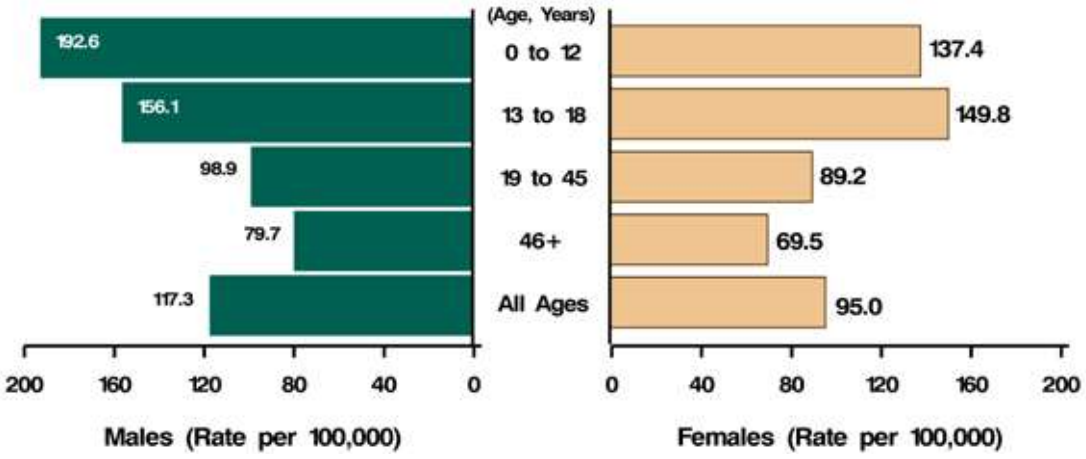


Figure 37. Rates of Animal Exposure per 100,000 Population by Age and Gender: Philadelphia, 2009



Public Health *Preparedness*

Bioterrorism & Public Health Preparedness (BT-PHP) Activities: Highlights of 2009

The Bioterrorism and Public Health Preparedness Program (BT-PHP) had an extremely busy year during 2009. First and foremost BT-PHP activated a number of response activities, including our first emergency medication centers, coordination with a variety of healthcare partners and a massive public information and outreach campaign. In addition to our H1N1 influenza activities, BT-PHP continued developing and exercising plans for emergency medication distribution.

H1N1 Influenza Pandemic

BT-PHP, in concert with the Acute Communicable Disease Control Program, the Epidemiology Unit, and the Immunization Program, mounted an effective and comprehensive response to the H1N1 influenza pandemic.

BT-PHP coordinated the development of fact sheets, a Special Edition Health Bulletin, more than a dozen H1N1-specific webpages, and established a presence on the social media networks Twitter and Facebook. BT-PHP also coordinated a number of traditional risk communication outreach modalities including newspaper, radio and mass transit advertisements with information on how to avoid catching the flu and where to get vaccines.

BT-PHP was a key player in the distribution of H1N1 influenza vaccine by establishing relationships with hospital systems, long-term care facilities, dialysis centers and federally qualified health centers, including the nine PDPH Health Centers. BT-PHP also provided vaccine to first responders in the Philadelphia Fire Department, Philadelphia Police Department and non-municipal emergency medical services companies. BT-PHP also managed the outreach and coordination of first- and second-dose vaccine distribution to children enrolled at charter schools, private schools, Philadelphia School District schools and Archdiocese of Philadelphia schools.

To facilitate the distribution of second-dose vaccines to children under the age of ten who were enrolled in Archdiocese of Philadelphia schools, BT-PHP set up two emergency medication centers: one in Northeast Philadelphia and another in South Philadelphia. These two medication centers were staffed by PDPH personnel and Philadelphia Medical Reserve Corps volunteers who administered more than 1,400 doses in one day.

General Program Activities

PDPH scored 99% for the 2008-2009 grant year on the CDC's Division of the Strategic National Stockpile annual assessment of major urban area public health preparedness activities pertaining to emergency medication distribution.

BT PHP manages a volunteer cadre of medically trained personnel through its Medical Reserve Corps (MRC). In 2009, as a result of outreach conducted in 2008, the Philadelphia MRC grew to more than 700 active medical professional volunteers. To accommodate the new volunteers, PDPH held three MRC orientations that included instruction on PDPH's mass medication model. Interested volunteers are encouraged to register for the Medical Reserve Corps by visiting https://mrcalert.phila.gov/regprocess.php.

In addition to training MRC volunteers, BT-PHP trained more than 500 School District of Philadelphia police officers on the PDPH mass medication plan.

In 2009, the BT-PHP Program developed a plan for distributing medications to long-term care facilities, such as nursing homes. The plan entails setting up a warehouse and having nursing home representatives come and pick up the medications. The plan was exercised in April 2009, and showed the plan to be feasible. The plan was updated based upon what was learned during this exercise, and future exercises are planned to test the limits of the plan. This plan supports the overall mass medication plan by reducing the demand on the planned 40 walk-up emergency medication centers by patients.

In addition to the mass medication warehouse exercise, BT-PHP participated in a number of other exercises designed to test various PDPH plans and coordination with other response partners. Some of these exercises include public health emergency calldowns, a site activation drill, a warehouse timing drill, and a regional hospital emergency response and coordination exercise. BT-PHP also assisted with the setup and execution of mass medication clinics at a local university on two occasions in response to two infectious disease outbreaks.

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) _____
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: 215-545-8362**

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 - 1998 to 2009

NR = Not reportable, NA = Not available)	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ACQUIRED IMMUNODEFICIENCY SYNDROME	891	1,224	947	893	914	848	760	508	699	690	504	216
AMEBIASIS	4	15	31	30	20	18	9	6	4	19	14	14
ANIMAL BITES/EXPOSURES	2,345	2,130	2,096	1,894	1,922	1,612	1,353	1,418	1,457	1,499	1,641	1,578
ANTHRAX	0	0	0	0	0	0	0	0	0	0	0	0
BABESIOSIS	0	0	0	0	0	1	0	0	0	1	0	0
BOTULISM	0	1	1	1	3	3	0	1	1	1	1	0
BRUCELLOSIS	0	0	0	0	1	0	0	0	0	1	0	0
CAMPYLOBACTERIOSIS	142	132	148	90	97	114	96	74	73	80	118	124
CHLAMYDIA TRACHOMATIS	11,763	12,660	13,593	13,586	15,234	17,747	16,723	15,577	17,199	17,029	17,012	18,104
CHOLERA	0	0	0	0	0	0	0	0	0	0	0	1
CRYPTOSPORIDIOSIS	14	24	22	13	15	19	19	27	29	94	23	38
CYCLOSPORIASIS	NR	NR	NR	1	0	2	0	3	0	2	1	3
DENGUE FEVER	0	0	0	0	0	0	0	0	1	8	1	0
DIPHTHERIA	0	0	0	0	0	0	0	0	0	0	0	0
ENCEPHALITIS, PRIMARY excluding West Nile Virus	0	1	1	5	6	9	6	0	0	1	0	0
ESCHERICHIA COLI, shiga-toxin producing (STEC)	6	7	6	42	17	14	11	7	19	4	8	10
GIARDIASIS	130	105	132	120	135	113	104	93	81	65	99	106
GONORRHEA	7,271	7,776	8,170	8,061	7,277	5,731	5,206	5,053	5,218	5,246	4,950	4,823
GUILLIAN-BARRE SYNDROME	0	2	3	2	2	0	0	1	2	1	3	1
HAEMOPHILUS INFLUENZAE [type b]	NR [0]	NR [0]	NR [0]	7 [1]	8 [1]	14 [1]	9 [0]	14 [0]	16 [0]	19 [2]	11 [1]	30 [7]
HEPATITIS A	133	62	255	98	70	179	39	17	14	9	10	2
HEPATITIS B, ACUTE	155	152	134	111	97	51	60	27	21	15	21	9
HEPATITIS C, ACUTE (Non-A, Non-B until 1998)	0	3	1	1	4	3	0	2	1	0	0	0
HISTOPLASMOSIS	0	0	2	1	2	2	2	0	1	2	0	1
HUMAN IMMUNODEFICIENCY VIRUS	NR	NR	NR	NR	NR	NR	NR	NR	703	1,384	1,174	911
LEGIONELLOSIS	15	15	19	3	10	23	31	19	21	24	26	60
LEPTOSPIROSIS	0	0	0	1	1	0	0	0	0	0	0	0
LISTERIOSIS	5	10	12	8	19	11	11	2	7	8	5	5
LYME DISEASE	179	220	165	99	179	164	182	172	139	172	281	363
MALARIA	11	10	11	16	16	19	13	14	15	7	19	16
MEASLES	1	0	0	1	0	0	0	0	0	0	0	1
MENINGITIS, ASEPTIC	26	25	68	71	112	120	87	95	66	86	79	68
MENINGITIS, BACTERIAL	12	15	23	15	21	7*	4*	4*	1*	4*	4*	6*
MENINGOCOCCAL INFECTIONS	13	13	24	12	15	15	14	8	2	9	5	12
MUMPS	1	5	2	1	1	2	1	2	2	1	0	0
PERTUSSIS	31	44	61	34	31	98	109	75	50	39	54	65
PLAGUE	0	0	0	0	0	0	0	0	0	0	0	0
POLIOMYELITIS	0	0	0	0	0	0	0	0	0	0	0	0
RABIES (Human)	0	0	0	0	0	0	0	0	0	0	0	0
RICKETTSIAL DISEASES, including RMSF	1	4	0	2	4	0	7	3	8	2	5	0
RUBELLA, including congenital rubella syndrome	1	0	0	0	0	0	0	0	0	0	0	0
SALMONELLOSIS, excluding typhoid	319	346	328	287	324	316	261	305	293	404	420	396
SHIGELLOSIS	123	129	115	139	191	696	31	31	14	138	206	1,051
STREP PNEUMONIAE, INVASIVE	NR	NR	NR	NR	NR	101	94	151	139	162	165	199
STREPTOCOCCUS, INVASIVE Gp. A [TSS]	NR	NR	NR	14 [7]	16 [1]	43 [3]	24 [3]	27 [0]	37 [0]	34 [0]	75 [0]	49 [1]
SYPHILIS - PRIMARY & SECONDARY	89	69	67	77	71	98	72	86	125	136	150	218
SYPHILIS - CONGENITAL	24	8	9	4	4	3	0	2	0	9	7	4
SYPHILIS - TOTAL	796	826	622	639	589	587	470	417	540	500	526	704
TETANUS	0	0	0	0	0	0	0	0	0	0	0	0
TOXIC SHOCK SYNDROME, staphylococcal	1	0	0	0	1	0	0	0	0	0	0	0
TUBERCULOSIS	179	184	169	144	147	120	129	116	149	133	162	98
TULAREMIA	0	0	0	0	0	0	0	0	0	0	0	0
TYPHOID FEVER	4	1	2	2	1	1	2	1	4	0	6	2
VARICELLA	N/A**	N/A**	N/A**	N/A**	N/A**	N/A**	N/A**	614	787	735	349	326
WEST NILE VIRUS	NR	NR	0	2	6	24	1	0	1	0	8	0
YELLOW FEVER	0	0	0	0	0	0	0	0	0	0	0	0

*excluding *Neisseria meningitidis*, *Haemophilus influenzae*, *Listeria*, and invasive *Streptococcus pneumonia.*

Beginning in 2003, *S. penumoniae* meningitis was counted with other *S. pneumoniae* cases.

**Citywide varicella data not available for these years.