disease control: annual report 2005

Division of Disease Control
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contents

Overview

This document provides an epidemiological summary of conditions reported to the Division of Disease Control (DDC) in 2005. There are currently 65 medical conditions that health care providers or laboratories must report to the DDC. Here, we highlight the most commonly reported conditions in Philadelphia as well as any conditions that are of special public-health importance. Some conditions with few or no cases each year are not described in detail, but can be found in the summary of all reportable conditions (See Appendix C). Data on cases of HIV/AIDS and lead poisoning are reported separately by the divisions that handle those conditions. Electronic versions of this report (in pdf format) can be found here:
http://www.phila.gov/health/units/ddc/html/DDC_Annual_Reports.html

Case Definition

For most reportable conditions, a standard reporting case definition has been set by the Centers for Disease Control and Prevention (CDC). These case definitions may differ from the criteria used to make a clinical diagnosis. For a full list of CDC case definitions, please visit this website:
http://www.cdc.gov/epo/dphsi/casedef/case_definitions.htm

Reporting to PDPH

We want to thank the medical and laboratory communities for their disease reporting activities, and we encourage all providers to continue reporting these conditions to DDC. Reporting to DDC may be accomplished by telephone (215-685-6748); by fax (215-545-8362), or by mail (PDPH, DDC, 500 South Broad Street, Philadelphia, PA 19146). In addition, any report made through the PA-NEDSS system can be viewed by DDC. The latest version of the Notifiable Disease Case Report Form can be found in Appendix B of this report and at this web site:
http://www.phila.gov/health/units/ddc/assets/applets/New_notifiable_disease_form.pdf

The list of reportable conditions can be found at
http://www.phila.gov/health/units/ddc/assets/applets/PDPH_Notifiable_List_2005-seal.pdf

DDC response to disease reports

For some common conditions, such as hepatitis C and chlamydia, cases are counted and the data is used to describe the scope and incidence of infection citywide. If the testing was ordered by a private medical facility, no further contact is made with the patient or health-care provider. In other instances, the patient or provider may be contacted to confirm the diagnosis and verify treatment. In addition, an interview with the patient may be conducted to determine the source of infection and to guide interventions for disease prevention. When a patient must be contacted regarding an STD, the reporting health-care provider is called before the patient is contacted in order to confirm diagnosis, stage of infection, treatment, and status of partners.

How DDC can assist health-care providers

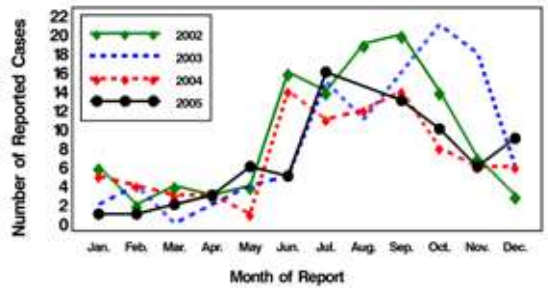
If you suspect a disease outbreak or if you suspect an infectious disease of urgent public health importance, DDC can help facilitate diagnostic testing and assist with infection control and disease management. To speak with a medical specialist, please call 215-685-6748. For urgent after-hours consultation, please call 215-686-1776 and ask for the Division of Disease Control on-call staff.

aseptic meningitis

Classification as aseptic or viral meningitis is based upon the clinical diagnosis of meningitis with no laboratory evidence of bacterial or fungal infection. To be classified as aseptic meningitis, cerebrospinal fluid (CSF) analyses needed to demonstrate findings consistent with meningitis (e.g., elevated white blood cell count) with negative bacterial and fungal growth. This classification excludes aseptic meningitis caused by West Nile Virus (WNV), which is discussed separately.

In 2005, Division of Disease Control (DDC) confirmed 95 cases of aseptic meningitis. This was a 9% increase over the number of cases reported in 2004 (N=87). A possible explanation for this increase is that DDC staff identified 9 cases of aseptic meningitis using emergency department syndromic surveillance data that was only partially available in previous years. Among the cases from 2005, there was an even gender distribution with 48 of the cases being male (50.5%). Ages ranged from 0 to 82 years with a median of 30 years. Of the 95 cases, 22 were tested for the presence of IgM antibodies for WNV and were negative. Four specimens tested positive for enteroviruses. An infectious etiology was not determined for any of the other patients. Cases occurred sporadically throughout Philadelphia with more residing in the densely populated neighborhoods. Most cases were reported in the late summer and early fall months (July-September) as has been observed in previous years (Figure 1).

Figure 1. Aseptic Meningitis, by Month and Year of Report: Philadelphia, 2002 to 2005



meningococcal infection (*Neisseria meningitidis*)

Neisseria meningitidis is a gram-negative diplococcus that can be carried in the nasopharynx of healthy human hosts. It is transmitted through close contact with respiratory secretions of an asymptomatic person. Meningococcal infection in a person with clinically compatible illness is confirmed by isolation of *N. meningitidis* from a normally sterile site or, in the absence of positive culture, is classified as a probable case when antigen is detected in the cerebrospinal fluid or when *purpura fulminans* is noted.

In 2005, 8 cases of invasive meningococcal infection were confirmed by culture. The organism was recovered from CSF from 2 of the cases and from blood cultures for the other six. The mean patient age was 32.1 with a range from 2 years to 64 years. Three of the cases were among females (38%). One case resulted in a fatal outcome (64 year old female). Serogroups for 5 of the 8 isolates were identified. Among these 5, 4 were serogroup Y, and the fifth was serogroup B, a pattern that is consistent with serogroup trends among recent years in Philadelphia (Table 1).

Table 1. Confirmed Cases of Meningococcal Disease, Reported Serogroups, Philadelphia, 2000-2005

	2000	2001	2002	2003	2004	2005	6-Year Total (%)
Serogroup							
B	3	1	5	3	1	1	14 (18%)
C	7	2	2	5	3	0	19 (24%)
W	0	0	0	1	0	0	1 (1%)
Y	9	5	7	4	6	4	35 (44%)
Z	0	0	0	0	1	0	1 (1%)
Not grouped	2	1	1	2	1	3	10 (13%)
Total	21	9	15	15	12	8	80

The Philadelphia Deparment of Public Health (PDPH) observed a 50% decrease in the number of confirmed cases of invasive disease caused by *N. meningitidis* in 2005, compared with 2004. None of the 2005 cases were epidemiologically linked, and presentation of illness occurred in each season without a temporal cluster.

invasive *Haemophilus influenzae*

Haemophilus influenzae, a gram-negative coccobacillus, which has both encapsulated and unencapsulated forms, is transmitted through respiratory droplet exposure. All invasive *H. influenzae* infections are reportable in Philadelphia, and isolates are collected by the DDC accordingly. Surveillance and serotype analysis of all *H. influenzae* infections enhances the identification of vaccine-preventable *H. influenzae* type B infections and characterization of non-type B infections.

In 2005, there were 14 confirmed cases of invasive disease caused by *H. influenzae* in Philadelphia. The median age was 67 years, with a range of 0 to 93 years. Two of the cases resulted in a fatal outcome; one fatal case was 85 years old; the other was a neonate. Nine cases were among females (64%), and none of the cases were linked epidemiologically. Thirteen of the isolates were obtained from blood cultures, and 1 was from an ovarian specimen. The serotypes of *H. influenzae* isolates are shown in Table 2.

Table 2. Confirmed Cases of Invasive *Haemophilus influenzae*, Reported Serotypes, Philadelphia, 2005.

Serotype	N	(%)
C	2	14.2%
E	1	7.1%
F	2	14.2%
Unknown	2	14.2%
Non-typeable	7	50.0%
Total	14	100%

listeriosis (*Listeria monocytogenes*)

Listeriosis, the infection of a normally sterile site by the gram-positive rod *Listeria monocytogenes*, is a rare but serious infection usually acquired from contaminated food products. There were 2 cases of invasive listeriosis identified among 2 senior females (ages 76, 80 years). Both cases isolated *L. monocytogenes* from a blood sample. The cases were not related and neither resulted in a fatal outcome. No food source was identified as a vehicle of transmission.

invasive *Streptococcus pneumoniae*

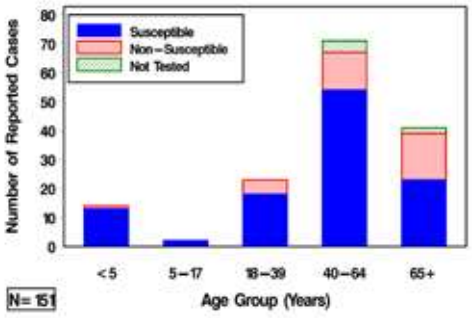
Invasive diseases due to *Streptococcus pneumoniae,* such as pneumonia, bacteremia, sepsis and meningitis, cause substantial morbidity and mortality. Antimicrobial therapy has resulted in reducing morbidity and mortality but its success is threatened by increasing antimicrobial resistance. Vaccination has been the cornerstone of efforts to reduce the burden of invasive pneumococcal disease: the 23-valent pneumococcal polysaccharide vaccine has been used since the 1970s to protect high-risk individuals older than 2 years of age, and more recently (February 2000) the 7-valent protein-polysaccharide conjugate vaccine (PCV-7) was licensed for universal infant vaccination. A dramatic decline in the incidence of invasive pneumococcal disease was anticipated as a result of the implementation of PCV-7.

In the United States, active, population-based surveillance is conducted in 9 states but reporting of drug-resistant *S. pneumoniae* and all invasive disease (defined as isolation of *S.pneumoniae* from a normally sterile site in a clinically compatible case) has been mandated in several other states.

In Philadelphia, during 2005, there were 151 cases of invasive pneumococcal disease reported to DDC. This is an increase from the last two years (101 cases in 2003 and 94 cases in 2004) that may reflect increased awareness and reporting. From 151 cases, all but 3 were bacteremic. Bacteremia as a sole manifestation was detected in 110 (72.8%) cases; pneumonia always accompanied by bacteremia was the diagnosis for 30 (19.8%) cases; meningitis was the diagnosis for 10 (6.6%) with 8 of these cases being bacteremic as well; there was 1 case of septic arthritis. The vast majority of cases were hospitalized (141, 92.7%). Among the 19 fatalities, 18 involved adults (>18years of age) and the other was a 5-month old infant.

Thirty-five (23.1%) of the 151 isolates were classified as Drug Resistant *S.pneumoniae* (DRSP) based on non-susceptibility to penicillin alone. This is an increase of 14 cases from last year but the proportion of drug-resistant isolates remained unchanged (23% in 2004). All but one of the DRSP strains were isolated from adult cases as seen in Figure 2.

Figure 2. Invasive *Streptococcus pneumoniae* Infections by Age and Penicillin Susceptibility: Philadelphia, 2005



From 15 cases in children less than 6 years of age, serotype information was available in 10. The serotypes identified were: 3 (1), 6B (1), 7F (1), 19A (2), 19B (2), 22F (1) and 33F (2). From these serotypes only 6B is included in the PCV-7 vaccine and the isolate was recovered from the blood of an infant too young to have been immunized.

Table 3: Antimicrobial Susceptibility of Invasive *Streptococcus pneumoniae* isolates reported to DDC during 2005.

Antibiotics	Isolates Tested (No.)	Susceptible Isolates (%)
Penicillin/Oxacillin	145	75.8
Ceftriaxone	101	98
Erythromycin	93	91
Clindamycin	15	100
TMP/SMX	91	93
Vancomycin	76	100
Levofloxacin	110	100

other bacterial meningitis

Bacterial meningitis is limited to clinical meningitis with a causative bacterial agent other than *Neisseria meningitidis*, *Haemophilus influenzae*, *Listeria monocytogenes*, and invasive *Streptococcus pneumoniae*. There were 4 cases of bacterial meningitis meeting the description above during 2005. Group B *Streptococcus* was recovered from CSF in a neonate (7 weeks) and a 54 year old male; both cases were fatal. *Enterobacter agglomerans* was isolated from the CSF of an 11 year old female, and *Klebsiella pneumoniae* was isolated from the CSF of a 42 year old male; neither case resulted in a fatal outcome.

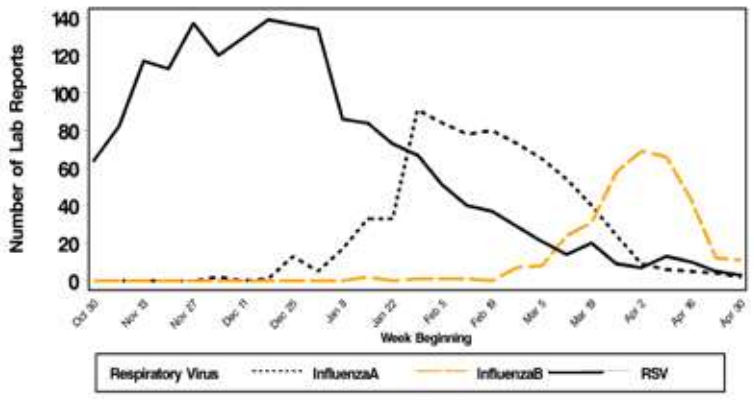
influenza and respiratory virus surveillance (2005-2006 season)

Influenza (the flu) is a respiratory disease caused by the influenza virus. The virus is usually spread from person to person through droplets generated during coughing and sneezing. Clinical illness from influenza can range from mild to severe illness and may lead to death in some cases. A typical influenza season in the United States results in approximately 36,000 deaths and 200,000 hospitalizations. Most cases of severe influenza occur in the very young or in those 65 years old or older. Influenza vaccine, which can be given intranasally or as a shot, remains the most important measure for preventing influenza in individuals and populations. For the 2005-2006 season, the Centers for Disease Control and Prevention (CDC) recommended influenza vaccinations for all children aged 6-23 months, adults aged 50 years and above, people with a weakened immune system or a chronic illness (including heart, lung or kidney disease, asthma, diabetes, and blood disorders), pregnant women, and anyone living or working in close contact with those listed above.

The Division of Disease Control (DDC) promotes influenza vaccinations for adults in Philadelphia at the community level each year with the Community-based Influenza Vaccination Campaign, which is operated through partnerships with Philadelphia Corporation for Aging, the Federally Qualified Health Centers, local Nursing Schools, and other volunteer providers. The annual campaign serves to raise awareness about influenza and pneumococcal disease, to educate the community about the importance of immunizations, and to increase vaccination coverage by administering vaccine. More than 18,000 flu shots were administered at 250 community-based clinics in Philadelphia in the 2005-2006 season.

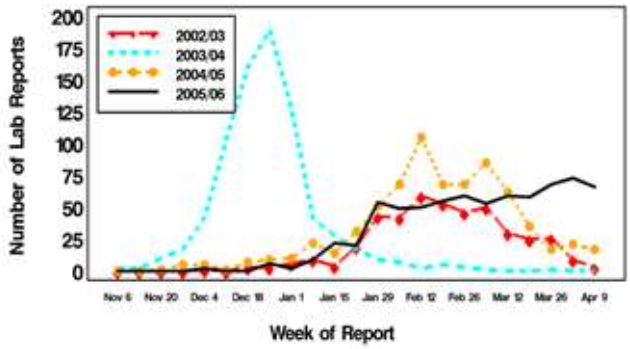
DDC conducts active, laboratory-based surveillance of respiratory viral agents. Ten hospital laboratories currently participate in this surveillance system. During the influenza season, these sentinel hospital laboratories transmit data representing aggregate weekly counts of influenza; 6 of the laboratories also provide aggregate weekly counts for respiratory syncytial virus (RSV), parainfluenza, and adenovirus. These counts include data from both Philadelphia and non-Philadelphia residents. Test methods vary and may include rapid antigen tests, viral culture, and PCR. Figure 3 shows the number of influenza A, influenza B, and RSV reports from sentinel laboratories during the 2005-2006 respiratory virus surveillance season. RSV peaked early in the season, influenza A was prevalent in the community from Janary through March, and influenza B was prevalent in March and April.

Figure 3. Respiratory Agents by Week (Reports from 10 Hospital Laboratories): Philadelphia, 2005–2006 Season



Three of the 10 sentinel laboratories have participated in llance system since 1996. Figure 4 compares total influenza (A and B) reports from these 3 laboratories from the 2001-2002 season through the 2005-2006 season. Of note, the large, early peak in 2003-2004 was driven by pediatric influenza A; comparable disease incidence was seen throughout the United States. Philadelphia's 2005-2006 season lasted longer than earlier seasons due to the relatively late appearance and high levels of influenza B.

Figure 4. Active Surveillance for Influenza(A+B) at Three Hospital Labs: Philadelphia, 2002/03 to 2005/06 Influenza Seasons



The Philadelphia Board of Health requires the reporting of all pediatric mortality and institutional outbreaks attributed to influenza. During the 2005-2006 season, no pediatric influenza deaths were reported, and DDC as-

sisted in influenza outbreak management in 8 long-term care facilities. Outbreak management recommendations for residents and staff included vaccination and prophylaxis for those exposed to ill residents. Heightened surveillance for influenza-like illness was also instituted in these facilities, and was used as a marker for the resolution of the outbreak.

legionellosis

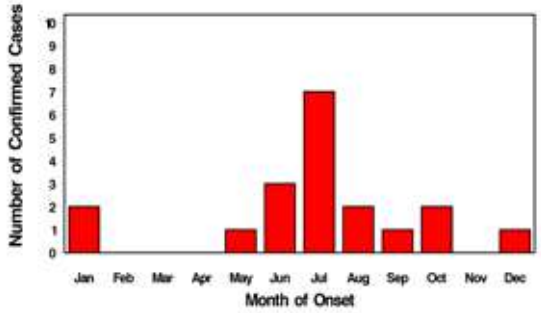
Legionella pneumophila bacteria can cause two forms of disease: Legionnaire's Disease (a severe respiratory illness with fever, myalgia, and pneumonia) and Pontiac Fever (a milder illness including fever and myalgias, but without pneumonia). Human Legionella infection of any type can be referred to as legionellosis.

Legionella species are found naturally in the environment, and grow best in warm water. *Legionella* can be transmitted to humans by the inhalation of infected aerosols or water droplets. The bacteria cannot be transmitted from person to person. Outbreaks of legionellosis have been linked to air conditioner cooling towers of large buildings, whirlpool spas, and water used for drinking and bathing. Persons who smoke or those with underlying disease such as lung disease, diabetes, or immunosuppression are at highest risk of contracting legionellosis. A study of southeast Pennsylvania cases also showed that legionellosis incidence increases approximately 6 to 10 days after periods of increased rainfall and humidity.

The CDC defines a confirmed case of legionellosis as a clinically compatible case that meets at least one of the following available confirmatory laboratory diagnostic criteria: the culture and isolate of any *Legionella* organism from a normally sterile site; a 4-fold or greater rise in serum antibody titer to *L. pneumophila* serogroup 1; and the detection of *L. pneumophila* serogroup 1 antigen in urine. Though urine antigen detection is the most commonly used test for legionellosis, species and serogroups other than *L. pneumophila* serogroup 1 are not detectable by either this method or by serologic diagnosis. Isolation by culture is the only diagnotic test to definitively identify other species and serogroups of *Legionella*, and is crucial in the identification of outbreaks, disease clusters, and environmental sources of the organism. In these situations, The Philadelphia Deparment of Public Health (PDPH) can assist with the collection and transport of *Legionella* specimens for strain-typing and pulsed-field electropheresis (PFGE).

In 2005, there were 19 confirmed cases of *L. pneumophila* reported for Philadelphia residents, with a citywide incidence of 1.3 per 100,000. All 19 residents had pneumonia and therefore Legionnaire's Disease. All cases were confirmed by urine antigen testing. 21.1% of cases were reported to be in smokers, and an additional 21.1% of cases had diabetes. 63.1% of cases had disease onset in the summer months (June through August), with the peak month of disease onset in July (38.8% of cases) (Figure 5). No clustering of disease in space or time was detected, and there were no cases associated with outbreaks.

Figure 5. Legionellosis Cases by Month of Onset: Philadelphia, 2005

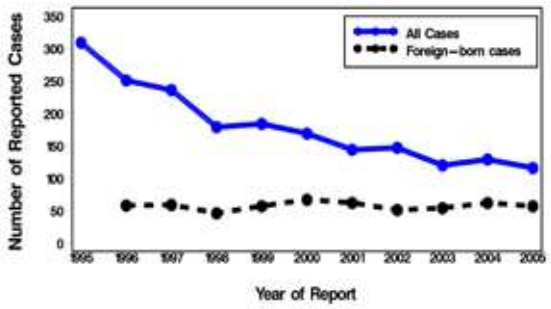


tuberculosis (*Mycobacterium tuberculosis*)

In 2005, the Philadelphia Tuberculosis Control Program reported 116 newly diagnosed cases of tuberculosis (TB). This represents an 11% decrease from 2004 when 129 new cases of TB were reported. In the past decade, there has been a 62% decrease in the number of TB cases reported in Philadelphia, from 309 cases in 1995 to 116 cases last year (Figure 6). In Philadelphia, the TB case rate for 2005 was approximately 7.9 cases per 100,000 population; this is above the Healthy People 2010 Objective of no more than 3.5 per 100,000 population. The Philadelphia cases represent approximately 36% (116/325) of all cases in the Commonwealth of Pennsylvania for 2005.

While the number of new cases declined during the last decade, TB among the foreign-born has remained stable and represents an increasing proportion of cases. The 57 foreign-born cases from 2005 accounted for nearly half of all reported cases in Philadelphia and originated from 26 different countries. Vietnam, Cambodia, and

Figure 6. Tuberculosis Cases: Philadelphia 1995–2005



China were the most common countries of origin.

Of the 116 diagnosed cases in 2005, 3 were homeless, 2 resided in long-term care facilities, but none resided in correctional facilities. Two had a history of injected drug use, 5 had a history of non-injected drug use, and 9 had a history of excess alcohol use within a year of diagnosis.

While notable progress has been made in reducing TB case rates among African Americans, their case rates are still much higher than the white, non-Hispanic population in Philadelphia. In 2005, the TB Control Program reported a TB case rate of 9.1 per 100,000 population among African Americans and nearly 55.9 per 100,000 population among Asian/Pacific Islanders.

Tuberculosis in children less than 15 years of age remained stable at 7 cases in both 2004 and 2005. Since TB disease in children indicates recently acquired infection and transmission, source contact investigations are initiated for all cases in children less than 5 years of age. Tuberculosis cases among those 65 years of age and older in Philadelphia increased from 23 in 2004 to 29 in 2005.

Of the cases diagnosed during 2005, 84 (72%) were diagnosed with pulmonary TB alone, 26 (22%) with extra-pulmonary TB alone, and 6 (5%) with both pulmonary and extra-pulmonary TB.

Ninety-four cases (81%) had a positive isolate for *M. tuberculosis* culture, and susceptibility results were available for 92 of the positive isolates. Of these isolates, 18 indicated some drug resistance but none were multidrug-resistant TB (MDR-TB), defined as resistance to both isoniazid (INH) and rifampin. Of the drug-resistant isolates, 7 were resistant to streptomycin only, 3 were resistant to INH only, and 2 were resistant to pyrazinamide only. There were 6 isolates that showed resistance to more than one drug. Of these, 2 were resistant to INH and streptomycin, 2 were resistant to INH and ethionamide, and 1 was resistant to streptomycin and para-aminosalicylic acid (PAS). Of the patients diagnosed with TB in 2005, 108 had initial treatment consisting of either the standard four-drug regimen (RIZE: rifampin, INH, pyrazinamide, and ethambutol) or some other multiple drug combination. Of the 8 patients who did not receive treatment, 4 died prior to diagnosis, 3 were lost to follow-up, and 1 moved out of the country prior to diagnosis.

The TB Control Program provides Directly Observed Therapy (DOT) to all suspected and confirmed TB cases, along with other clinical services, through the Flick Memorial Center for the Treatment of Tuberculosis. The TB Control Program also coordinates universal genotyping of all isolates of *M. tuberculosis* sent to the Philadelphia Public Health Laboratory. The TB Control Program monitors over 300 cases, suspects, and reports each year.

Providers are reminded to report suspected and confirmed TB cases within 24 hours to the TB Control Program (215-685-6744).

campylobacteriosis (*Campylobacter spp.*)

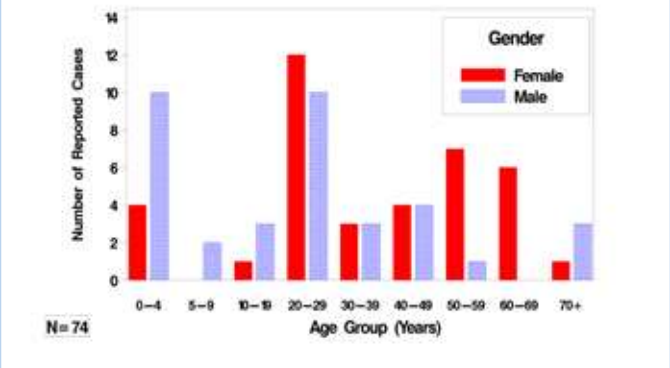
Most bacterial diarrheal illness in the United States is due to *Campylobacter spp.* Cases experience diarrhea (sometimes bloody), malaise, abdominal pain, nausea, and vomiting. The Centers for Disease Control and Prevention (CDC) case definition describes *Campylobacter* infection as a diarrheal illness of variable severity along with isolation of *Campylobacter* from a clinical specimen. Most cases are sporadic and cases are rarely part of large outbreaks.

Seventy-four culture-confirmed cases of campylobacteriosis were reported among Philadelphia residents in 2005. Fourteen of the 74 cases were serotyped; of these, 10 were identified as *C. jejuni*, 2 cases were infected with both *C. jejuni* and *C. coli* and 1 was identified as *C. fetus*. Slightly more than half of the cases were female (51%). The median age for cases is 28 years old. Figure 7 displays cases by age group and sex. Symptoms experienced by the cases included: diarrhea (96%), fever (41%), abdominal pain (68%), nausea (10%), and vomiting (18%). Fourteen cases required hospitalization; no fatalities were reported.

Campylobacter spp. is one of many etiologic agents which causes traveller's diarrhea- a gastrointestinal illness with onset during or after travel from ingestion of bacterially-contaminated food or drink. Twenty-three Philadelphia cases (32%) reported foreign travel during the incubation period.

Antibiotic susceptibility tests were available on 26 (35%) *Campylobacter spp.* isolates. Over one-third (9) of those isolates with antibiotic susceptibility test results were resistant to ciprofloxacin. For more information on antibiotic susceptibility results please refer to Appendix A.

Figure 7. *Campylobacter spp.* by Age Group and Gender: Philadelphia, 2005



shiga-toxin producing *Escherichia coli* (STEC)

Shiga-toxin producing *Escherichia coli* (STEC) includes, most notably, *E. coli* O157:H7 and other Shiga-toxin producing *E. coli* non-O157 serotypes which can cause severe abdominal pain, often bloody diarrhea, and little to no fever. Approximately 8% of complications with STEC infections lead to hemolytic uremic syndrome.

Due to widespread laboratory use of enzyme-linked immunological assays for Shiga toxin (STX) detection and PCR amplification of the *stx* gene, CDC revised its case definition to reflect the results from these diagnostic tests. According to the 2005 CDC STEC case definition, laboratory-confirmed cases require the isolation of STEC. For all non-*E. coli* O157:H7 there must also be the production of STX or detection of *stx* genes from a clinical specimen. Seven cases of STEC infection were identified in 2005; *E.coli* O157: H7 was isolated from 1 case, and the 6 others were identified by the presence of the Shiga toxin in stool.

Fifty-seven percent of cases were male. The age range of cases was 1 to 89 years; only 1 case was under 5 years old. Symptoms reported by cases were as follows: diarrhea (86%), abdominal cramps (71%), bloody diarrhea (29%) and fever (29%). Although there were no deaths, STEC infection lead to 3 hospitalizations.

The most common food source of STEC is improperly-cooked beef products, although produce and apple juice have also been identified as sources. Four Philadelphia cases consumed either ground beef, steak, or both within 7 days of their illness onset . No common risk factors were identified in the other cases.

salmonellosis (*Salmonella spp.*)

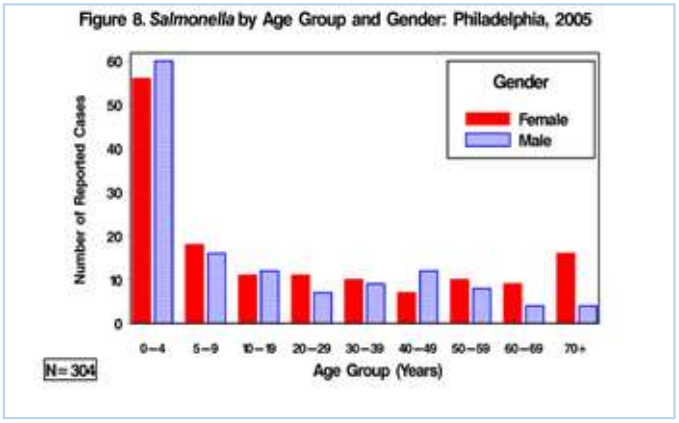
Salmonella causes diarrhea in humans and animals, and it is passed from the feces of animals or humans to other animals and humans. Symptoms are diarrhea, fever, and abdominal pain. Humans become infected when they consume *Salmonella* contaminated food or drink or handle animals that excrete the organism. Transmission between close contacts is also a common route of infection. Recent national trace backs of large *Salmonella* outbreaks implicated undercooked chicken products, eggs, vegetables, fruits, ice cream, and juice as the sources. Case definition of confirmed salmonellosis requires the isolation of *Salmonella spp.* from a clinical specimen.

Three hundred and five cases of salmonellosis were reported in 2005, excluding typhoid fever. Of these, 290 were laboratory-confirmed and 15 were classified as probable cases of salmonellosis since they were not laboratory-confirmed but were epidemiologically-linked to a confirmed case and experienced clinical symptoms consistent with salmonellosis. The incidence rate in Philadelphia is 20.1 cases per 100,000 which is higher than the 2005 provisional United States incidence rate of 14.8 cases per 100,000. The higher Philadlephia rate cannot be attributed to any large outbreaks. Fifty-one percent of cases were male, and children 4 years of age and younger accounted for 46% of the total salmonellosis cases in 2005. Typically the age-distribution of salmonellosis cases is skewed towards younger age groups where transmission rates are highest among diapered-age and toilet-training children. This finding is best demonstrated by Figure 8 which depicts the number of cases by age group and sex. Serotype information was available for 281 cases; of which, 121 cases (43%) were *S. enteritidis* and 64 isolates (23%) were *S. typhimurium*. Symptoms among cases included: diarrhea (90%), fever (56%), abdominal pain (41%), vomiting (25%), and nausea (6%).Sixty-four hospitalizations and 2 deaths occurred among the 305 cases. Children comprised almost a third of all the hospitalizations.

Thirty-four percent of cases reported having animal contact. Sixteen cases reported possessing reptiles as pets; but only 5 of these cases were infected with serotypes that are considered reptile-associated. Foreign travel is also associated with the acquisition of the *Salmonella* organism. Eleven cases (5%) traveled outside the United States during their incubation period.

One small outbreak of interest occurred in a Philadelphia hospital. An important epidemiologic tool, pulsed-field gel electropheresis (PFGE), aided in the identification of this outbreak. PFGE visualizes the DNA fingerprint of *Salmonella* isolates. Since some serotypes like *S. enteriditis* and *S. typhimurium* are very common, PFGE differentiates *Salmonella* isolates of the same serotype. The Pennsylvania Department of Health (PADOH) contacted The Philadelphia Deparment of Public Health (PDPH) concerning a cluster of *S. enteriditis* with a unique PFGE pattern in Philadelphia residents. Initial analysis revealed that all cases were admissions into a nursery unit at a local hospital during a specific time period. After an intensive investigation, PDPH concluded that the lack of efficacious infection control practices in hospital staff shared by the cases may have contributed to the spread of *S. enteriditis* in the nursery unit.

Figure 8. *Salmonella* by Age Group and Gender: Philadelphia, 2005



One hundred eighty-one (62%) *Salmonella* isolates have antibiotic susceptibility test results available for analysis. Of these isolates, 20 demonstrated resistance to only ampicillin. Detailed information on antibiotic susceptibility results is available in Appendix A.

typhoid fever (*Salmonella Typhi*)

Typhoid fever is a life-threatening illness caused by *Salmonella* Typhi (*Salmonella enterica* serovar Typhi). In this report, *Salmonella* Typhi is separated from other salmonella serotypes because of the severity of illness. The symptoms include sustained fever, headache, malaise, splenomegaly, anorexia, and nonproductive cough. Mild presentation with clinical gastroenteritis or asymptomatic cases are common especially in endemic areas. Typhoid fever is rare in the United States and most cases are imported from other countries. Although there are about 500 cases annually in the United States, a majority of

the burden occurs in the developing world. CDC case definition necessitates laboratory-confirmation by the isolation of the organism in blood, stool, or other clinical specimen.

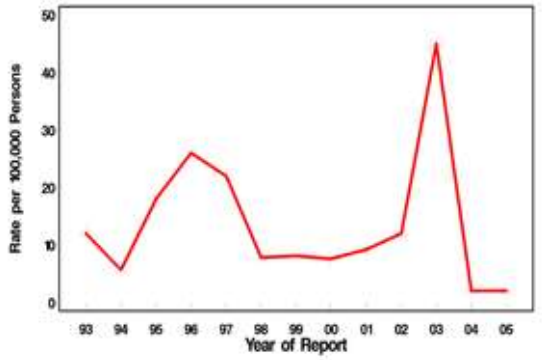
One case of typhoid fever was reported to the Division of Disease Control (DDC) in 2005. The case traveled to the Dominican Republic, and after entry into the United States, the case experienced gastrointestinal illness symptoms and required hospitalization. To prevent transmission at the case's workplace, the case was excluded from returning to work until a full recovery was documented per PADOH regulations. PDPH staff documents complete recovery of cases by requiring 3 stool samples negative for S. Typhi taken at least 48 hours after the completion of antibiotic therapy, with at least 24 hours between each stool sample, and taken no earlier than 1 month after illness onset. These criteria, in their entirety, are mandated by PADOH and must be met before a typhoid case returns to certain work environments.

shigellosis (*Shigella spp.*)

The human bacterial pathogen *Shigella spp.* causes an infection characterized by diarrhea (often bloody), fever, and stomach cramps and can be divided into 4 serogroups; *S. dysenteriae*, *S. flexneri*, *S. boydii*, and *S. sonnei*. *S. dysenteriae* and *S. boydii* are uncommon in the United States but are important causes of diarrheal disease in the developing world. Since the main route of transmission is fecal-oral, unsanitary conditions or lax adherence to basic infection control guidelines contribute to rapid transmission particularly in daycare populations and institutionalized facilities as experienced in Philadelphia in 2003. According to the CDC case definition, laboratory-confirmed *Shigella* infection is demonstrated by the isolation of *Shigella* from a clinical specimen.

Thirty-one laboratory-confirmed reports of *Shigella* were received in 2005. The incidence rate remained steady from 2004 to 2005 at 2.0 cases per 100,000. This is much lower than the 2005 provisional national incidence of 4.9 cases per 100,000. The incidence of shigellosis in Philadelphia fluctuated dramatically since 1994 as shown by Figure 9. Serogroup data were available for all except 1 of the confirmed cases; 14 (45%) were identified as *S. sonnei* and 16 (51%) were identified as *S. flexneri*. The median age of cases was 10 years. Symptoms reported by cases with information on clinical presentation (30 cases) were as follows: diarrhea (100%), fever (47%), abdominal cramps (77%), and vomiting (30%). No fatalities occurred but 12 cases were hospitalized. Of the risk factors reported by cases, only foreign travel seemed to be noteworthy. Four cases traveled abroad during their incubation period.

Figure 9. *Shigella spp.* Rates, 1993–2005



Antibiotic susceptibility tests for ampicillin, ciprofloxain, and trimethoprim-sulfamethoxazole were conducted on 19 (61%) *Shigella* isolates. Six of the 20 isolates exhibited resistance to ampicillin and either ciprofloxacin or trimethoprim-sulfamethoxazole. Detailed information on antibiotic susceptibility results is presented in Appendix A.

cryptosporidiosis (*Cryptosporidium parvum*)

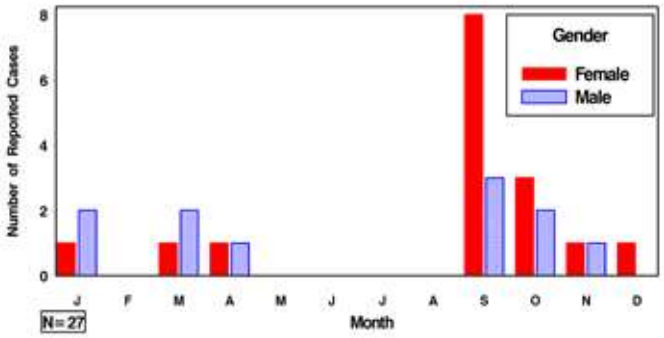
The parasite *Cryptosporidium spp.* is the etiological agent for cryptosporidiosis and one of the most common causes of waterborne diarrheal disease in humans in the United States. Many animals can also be infected and carry *Cryptosporidium*, but only certain animal-adapted species can be easily transmitted to humans. Humans exposing themselves to untreated recreational waters where infected animals (including other humans) have defecated are susceptible to *Cryptosporidium* infections. Symptoms of cryptosporidiosis are profuse and watery diarrhea accompanied by abdominal cramping, with anorexia and vomiting mostly in children. The CDC case definition for laboratory-confirmation is the detection of *Cryptosprodium* oocytes or antigen in stool or other appropriate clinical specimen.

Twenty-seven cases of cryptosporidiosis were reported in 2005. The median age was 21 years and the majority of cases were female (59%). Among those with hospitalization information available, 4 cases were admitted into the hospital for cryptosporidiosis. Seven cases indicated travel outside of Philadelphia, although only 2 of these

cases traveled outside of the United States. Three cases reported having a compromised immune system, which increases the risk of developing severe complications with *Cryptosporidium*.

In September PDPH staff investigated a cluster of 12 cryptosporidiosis cases. The demographics of the cases were atypical in that the median age was 10 years—younger than the overall median age for 2005. The marked increase in cryptosporidiosis during September is clearly illustrated in Figure 10. Cases were predominantly female (75%) and resided in various areas of the city. None of these cases reported travel outside of the Philadelphia-area. Additional questioning did not reveal any epidemiological-link and as opposed to the previous year, 2004, there were no reports of inaccurate laboratory testing kits.

Figure 10. *Cryptosporidium parvum* by Month and Gender: Philadelphia, 2005

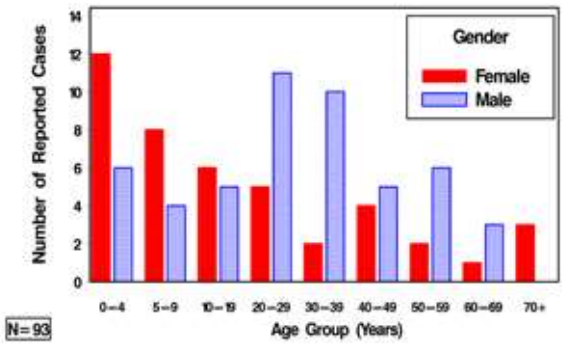


giardiasis (*Giardia lamblia*)

Giardiasis is a diarrheal disease caused by the protozoan *Giardia lamblia*. The protozoan lives in the intestine, is passed through the stool, and can live outside the body for long periods of time in multiple environments including soil, food, water, and surfaces that have been contaminated from infected humans or animals. Symptoms of giardiasis include diarrhea lasting 1-2 weeks or longer, gas, abdominal cramping, and greasy stools, but some infected persons may be asymptomatic. The CDC case definition for laboratory-confirmed case requires the detection of *G. lamblia* cysts, trophozoites, or antigen in stool.

Ninety-three laboratory-confirmed giardiasis cases were reported in 2005, with males comprising the majority of cases among adults as seen in Figure 11. Symptoms reported include: diarrhea (81%), abdominal pain (39%), nausea (29%), vomiting (30%) and fever (24%). Although 13 cases were known to require hospitalization, there were no fatalities. Exposure to unchlorinated water; either by consumption, through travel, or recreation, is a risk factor for giardiasis. Travel to a foreign country in the month before illness onset was reported by 23 cases and swimming was reported by 13 cases.

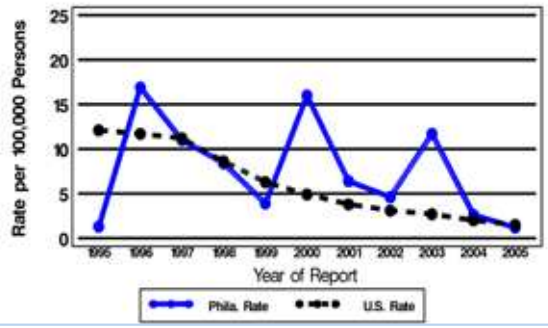
Figure 11. *Giardia lamblia* by Age Group and Gender: Philadelphia, 2005



hepatitis A

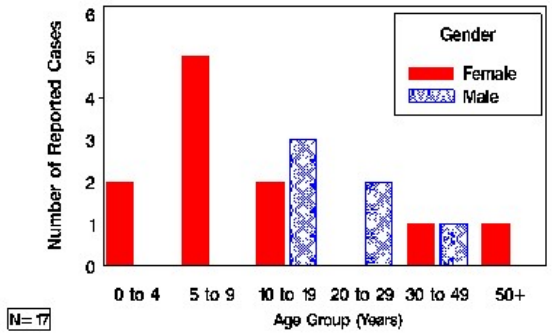
Hepatitis A is an acute viral infection of the liver that is transmitted via the fecal-oral route. Symptoms include an abrupt onset of fever, malaise, anorexia, nausea, abdominal discomfort and jaundice. The Centers for Disease Control and Prevention (CDC) case definition for a confirmed case of hepatitis A requires the presence of: a) discrete onset of symptoms, b) jaundice or elevated serum aminotransferase level, and c) IgM to hepatitis A virus. In 2005, the Division of Disease Control (DDC) received 59 reports of suspect hepatitis A cases. Of these, 17 were confirmed based on the CDC case definition. This reflects a 56% decrease in confirmed cases compared to 2004 (39 cases). This brings the overall 2005 rate (1.16 per 100, 000 population) below the 2005 United States provisional rate (1.52 per 100, 000 population) (Figure 12). The overall decrease in the number of confirmed cases can be attributed to the cyclical nature of hepatitis A virus and to DDC's continued outreach to implement immunization in high-risk communities.

Figure 12. Hepatitis A Rates: Philadelphia and U.S., 1995–2005



Cases ranged in ages from 4 to 61, with a median age 13, and 10 (58%) of the confirmed cases were between the ages of 5 and 19 as demonstrated in Figure 13. Jaundice was reported for 82% of cases and nausea and vomiting were reported in 76% of cases. Six cases (35%) reported travel to either Asia or Central/South America within 6 weeks of illness. There were 3 household clusters identified; these accounted for 9 (52%) of the confirmed cases. Three cases were hospitalized, but no hepatitis A fatalities were reported.

Figure 13. Hepatitis A by Age Group and Gender: Philadelphia, 2005

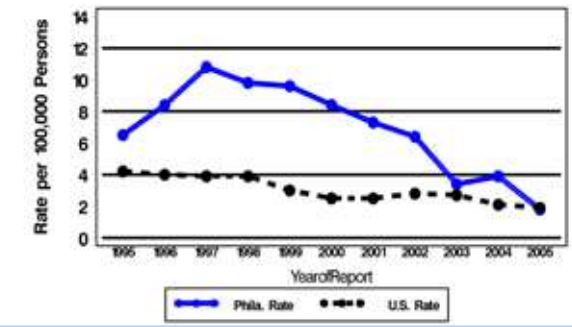


hepatitis B- acute

Hepatitis B is a serious infection of the liver that can lead to life-long disease. Transmission occurs when an uninfected person comes into contact with the blood or other body fluid of an infected person. The CDC case definition for acute hepatitis B requires the presence of: a) discrete onset of symptoms, b) jaundice or elevated serum aminotransferese (ALT) levels, and c) IgM antibody to hepatitis B core or positive hepatitis B surface antigen. In 2005, DDC received 1,202 hepatitis B serology reports, of which 27 were confirmed as acute hepatitis B cases based on the CDC case definition. This reflects a 45% decrease compared to confirmed cases reported in 2004 (60 cases).

The overall Philadelphia acute hepatitis B rate is now 1.8 per 100,000 population as compared to the 2005 United States provisional rate of 1.9 per 100, 000 population (Figure 14). This decrease brings us below the United States provisional rate.

Figure 14. Acute Hepatitis B Rates: Philadelphia and U.S. 1995–2005

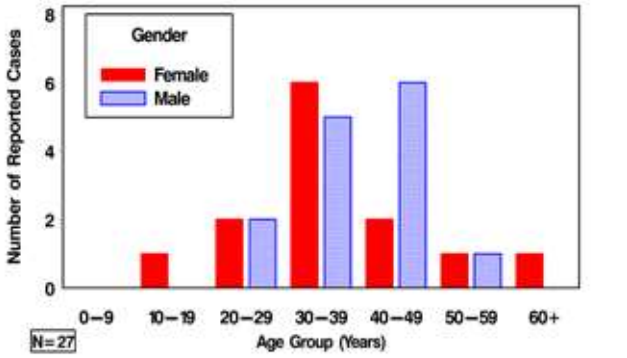


Confirmed cases ranged in age from 16 to 64 years (Figure 15), with 85% between the ages of 23 and 49. Cases

were 52 % male. Of the confirmed cases 78% reported only heterosexual contact and 30% reported having more than 2 sexual partners in the 6 months prior to diagnosis.

Ninety-six percent of cases reported jaundice, 75% with elevated ALT levels and 27% with vomiting. Ten cases (40%) were hospitalized but there were no hepatitis B-associated fatalities.

Figure 15. Acute Hepatitis B by Age Group and Gender: Philadelphia, 2005



perinatal hepatitis B

Philadelphia has a Perinatal Hepatitis B Prevention Program (PHBPP) through the Immunization Program of DDC. The primary focus of the PHBPP is disease prevention among infants born to women with chronic hepatitis B virus (HBV) infection, although a secondary goal is disease prevention among other household contacts of those chronically infected with HBV.

Clinical and epidemiologic studies have shown that the younger a person is when first infected with HBV, the more likely he or she is to become a chronic carrier. As a result, HBV prevention among infants at high-risk for infection is key to disease prevention in the broader population. The Philadelphia Board of Health requires that all women be screened for hepatitis B virus (HBV) infection in pregnancy through use of a surface antigen test (HBsAg), and that positive HBsAg results be reported to DDC.

The PHBPP Nurse Manager works with women who test positive for chronic HBV infection and their health and obstetrical care providers to ensure that their infants receive hepatitis B immune globulin (HBIG) prophylaxis at delivery, a birth dose of hepatitis B vaccine, and at least 2 additional doses of vaccine 1 and 6 months after the birth dose. After at least 3 doses of hepatitis B vaccine have been administered, these infants receive serologic testing to define their immune status to HBV. More than 90% of these infants receive HBIG and 3 doses of vaccine (HepB3) by the age of 7 months and 95% receive all immunoprophylaxis (HBIG + HepB3) and serologic testing by the age of 1 year. The follow-up process, from prenatal identification to birth through to vaccination and post-immunization screening, can take up to two years.

In 2004, 125 infants in Philadelphia were born to women with chronic HBV. For 123 infants (98.4%), immunoprophylaxis was successful in preventing disease; however, 2 infants were found to have a chronic HBV infection as a result of perinatal transmission. One hundred twenty household contacts of mother and infant were also followed in 2004 for vaccination status and serologic testing. Complete 2005 data for PHBPP-Philadelphia will not be available until 2007. However, provisional analyses show that DDC learned of 142 infants born to mothers with chronic HBV infections in 2005 and, at the time of writing of this summary, data were available to indicate that 137 (96.5%) had received HBIG and a birth-dose of hepatitis B vaccine. Data collection, follow-up, and serologic testing will continue as the year progresses.

hepatitis C

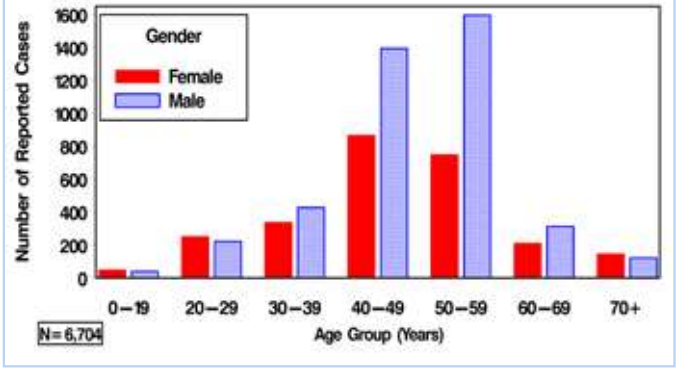
Currently, approximately 4 to 5 million Americans are infected with hepatitis C virus (HCV) and at least 2.7 million are chronically infected (defined as infection lasting for more than 6 months). Moreover, in 2003 an estimated 30,000 new individuals were infected with HCV in the United States. Many individuals remain unaware of their infection status until decades later, when chronic liver disease develops. In total, chronic HCV is responsible for 40 to 60 percent of liver disease and is the leading cause of liver transplantation in the United States HCV currently causes approximately 10,000 deaths per year and without increased resources for counseling, testing, and medical referral services, the CDC predicts that number will double by 2020.

DDC maintains a registry of persons with positive HCV laboratory results in order to systematically collect, analyze and interpret reported data. This data can be used to monitor disease and reporting trends, as well as facilitate counseling, education, and follow-up of infected persons. This year, the CDC modified the Hepatitis C Virus Infection, Past or Present case definition by adding the HCV genotype test as confirming laboratory criteria for diagnosis. Consequently, the most current laboratory criteria for a confirmed case of Hepatitis C Virus Infection, Past or Present includes: Anti-HCV positive (repeat reactive) by EIA, verified by an additional more specific assay (e.g., RIBA for anti-HCV or nucleic acid testing for HCV RNA), **OR** HCV RIBA positive, **OR** Nucleic acid test for HCV RNA positive, **OR** Report of HCV genotype **OR** Anti-HCV screening-test-positive with a signal to cut-off ratio predictive of a true positive as determined for the particular assay (e.g., ≥ 3.8 for the enzyme immunoassays) as determined and posted by CDC.

Within the DDC registry, there has been an increase in reporting of confirmatory tests and liver enzyme test results. Also, some of the larger reporting laboratories (e.g., Quest Diagnostics and LabCorp) have incorporated the ≥ 3.8 signal to cut-off ratio and/or RIBA confirmatory testing into HCV laboratory testing, yielding an increase in reporting of confirmed cases. Due to enhanced surveillance by DDC, additional case-defining data has been requested and collected from laboratories and providers in an attempt to maintain comprehensive client data in the DDC registry.

In 2005, DDC added 7,012 unique new patients into the HCV registry. This is a 33% increase from the last year in the number of new patients with any positive hepatitis C test. The registry expansion may reflect an increase in reporting among providers, an increase in the frequency of diagnostic testing including DNA and RNA nucleic acid testing, and/or a true increase in disease incidence. Figure 16 shows the newly reported hepatitis C cases by age and gender. Of the 7,012 newly reported 2005 cases, 3,831 are newly reported confirmed cases that met at least one of the laboratory criteria in the CDC case definition for confirmed status. There are 20 newly reported cases that are probable cases with positive antibody tests and elevated liver enzymes, but lack further reported testing that would confirm the CDC case definition. The remaining 3,161 reported data reflect positive HCV antibody tests that lack additional confirming laboratory testing. Although DDC is unable to assure that data reported with only positive antibody tests indicate true HCV infection, in a region of high HCV disease prevalence, such as Philadelphia, the positive predictive value of a single positive HCV laboratory test is high.

Figure 16. Newly Reported Hepatitis C by Age Group and Gender: Philadelphia, 2005



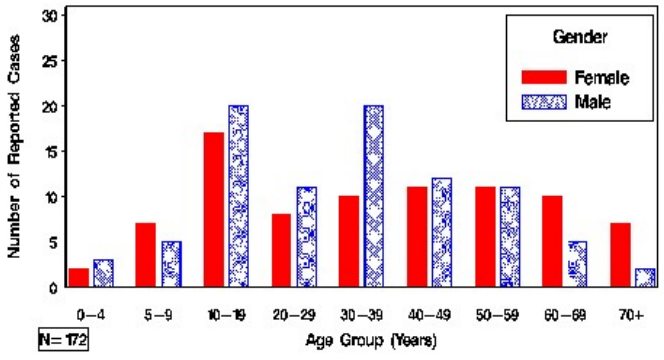
lyme disease (*Borrelia burgdorferi*)

Lyme disease is a bacterial infection of the species *Borrelia burgdorferi* transmitted by the *Ixodes* deer tick. The Centers for Disease Control and Prevention (CDC) defines a confirmed case of lyme disease to be 1) an individual with physician-diagnosed erythema migrans of size > 5cm or 2) an individual with one of the late manifestations of the disease in addition to positive laboratory evidence of infection. See http://www.cdc.gov/epo/dphsi/casedef/lyme_disease_current.htm for more information on late manifestations.

In Philadelphia throughout 2005, clinical laboratories reported positive Lyme serologic test results for 832 unique people. Of these, 172 (20.7%) were considered confirmed cases upon investigation - a decline of 10 confirmed cases from the previous year (5.5% reduction). The remaining individuals were not confirmed either because no clinical information was received from healthcare providers upon query, clinical case definition was not fulfilled upon investigation, or the case lived outside of Philadelphia.

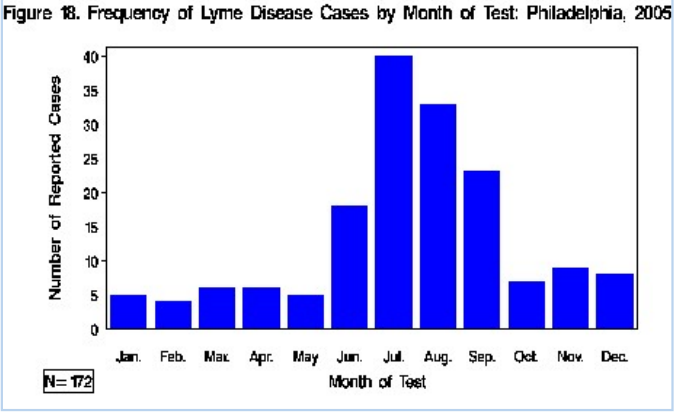
The age range among cases was 1 to 89 years (median=32.5 years, Figure 17) and 89 cases (51.7%) were

Figure 17. Lyme Disease Cases by Age and Gender: Philadelphia, 2005



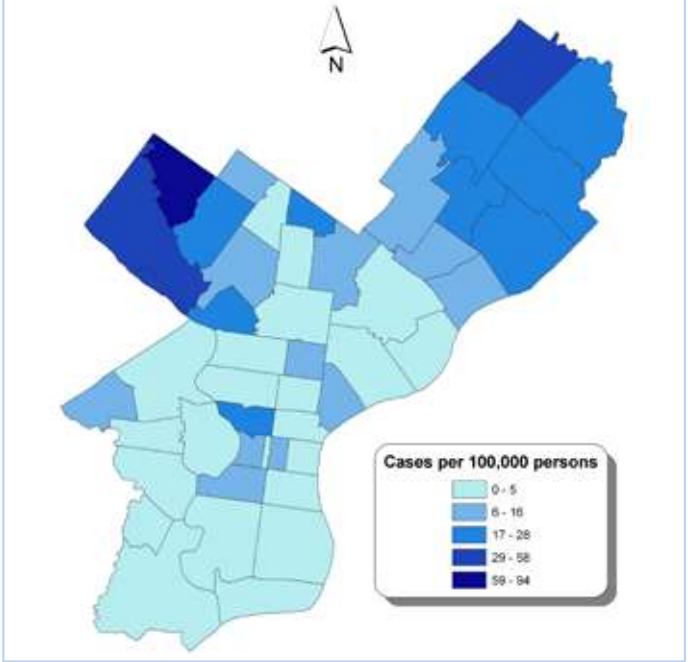
male. Among the recorded clinical manifestations of the disease, 96 cases (55.8%) reported having erythema migrans, 74 cases (43.0%) reported having arthritis, 16 cases (9.3%) reported having Bell's palsy, 6 cases (3.5%) reported having carditis, 3 cases (1.7%) reported having radiculopathy, and only 1 case reported having lymphocytic meningitis/encephalitis. Twenty-four cases (14.0%) reported having multiple symptoms. Analysis of the testing dates among cases demonstrated an increased frequency of diagnosis during the summer months (Figure18), reflecting the known seasonality of

Figure 18. Frequency of Lyme Disease Cases by Month of Test: Philadelphia, 2005



this disease. As in the past, the highest incidence of infection occurred in the northwest and northeast portions of the city, in zip codes bordering the Wissahickon river valley (around Fairmont Park) and the Pennypack Park area (Figure 19).

Figure 19. Rate of Lyme Disease by ZIP code of Residence, Philadelphia, 2005



malaria (*Plasmodium spp.*)

A confirmed case of malaria is defined as an episode of microscopically confirmed *Plasmodium spp.* parasitemia in the blood stream of any person, symptomatic or asymptomatic, diagnosed in the United States, regardless of whether the person experienced previous episodes of malaria while outside the country.

In 2005, 14 Philadelphia residents were confirmed as cases of malaria based on microscopic examination of smears of their blood. Among those 14 cases, 11 had their smears further characterized by species: 10 individuals had parasitemia of *P. falciparum* and 1 person was infected with *P. vivax*. The median age for cases was 29.5 years (range: 1-61 years). Nine cases (64%) were male.

All of the cases were located and interviewed. Of these, 11 cases appeared to have acquired their infection in Africa. Eight cases reported having taken anti-malarial prophylaxis. Thirteen cases were documented to have received treatment.

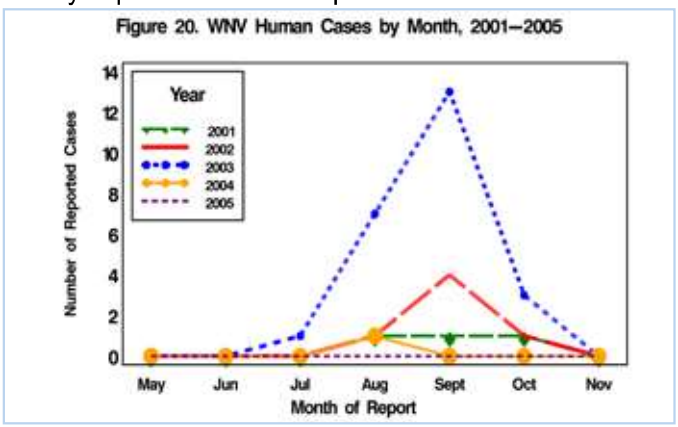
west nile virus disease

Since the emergence of West Nile Virus (WNV) in 1999 in New York City, this arthropod-borne virus has traversed efficiently across continental United States. As of 2005, all states except Alaska and Hawaii reported WNV-positive birds or mosquitoes. Humans are incidental and dead-end hosts for WNV, and are not key components in WNV amplification and transmission. In Philadelphia, surveillance of WNV necessitates collaboration between the Division of Disease Control (DDC) WNV Control Program and Environmental Health Services (EHS)-Vector Control Program. The DDC West Nile Virus Control Program also addresses human, animal and environmental factors in WNV transmission.

While typical human clinical presentation of WNV infection involves fever, headache, and fatigue, cases experiencing more severe sequelae such as WNV-associated neuroinvasive disease are more likely to be diagnosed and reported. Previous versions of the clinical case definition focused on the neuroinvasive aspects of the disease: encephalitis, meningitis, and poliomyelitis-like acute flaccid paralysis. The 2004 amendment to this case definition provides for counting the non-neuroinvasive and less severe manifestations of these diseases. Laboratory confirmation requires evidence of acute disease: isolation of the virus, virus-specific antigen or nucleic acid, 4-fold or greater change in virus-specific serum antibody titer, or the presence of virus-specific immunoglobulin (IgM) in CSF and virus-specific immunoglobulin G (IgG) in the same specimen or in a subsequent specimen. Both elements of clinical and laboratory diagnostic criteria are necessary for a laboratory-confirmed WNV case.

The Philadelphia Deparment of Public Health (PDPH) reported its first cases of WNV in the summer of 2001. Philadelphia experienced its peak in the WNV epidemic in 2003 when it reported 24 cases. In 2004, PDPH received 1 laboratory-confirmed report of WNV. By 2005, PDPH reported no cases of WNV, a dramatic decrease from the height of the epidemic. Figure 20 depicts the WNV trend in Philadelphia. Pennsylvania, and all of the neighboring states except West Virginia, experienced an increase in the number of cases in 2005 as compared with 2004. The surrounding counties of Montgomery, Delaware and Bucks reported only 5 cases in 2005. For the United States, 3,000 WNV cases were reported to the CDC in 2005 – with all but 4 states (Alaska, Hawaii, Washington, and Maine) reporting cases. The precipitous decline in WNV human cases despite the constant presence of WNV in surrounding areas and states is attributed to a multitude of factors, none of which alone clearly explains the Philadelphia-area decrease.

Figure 20. WNV Human Cases by Month, 2001–2005



Both DDC and EHS-Vector Control Program are committed to controlling WNV transmission in the community. PDPH conducts extensive WNV education campaigns for the public and health care providers. The EHS-Vector Control Program monitor WNV in the mosquito population by collecting mosquitoes for WNV testing at PA-BOL. From April to October, crews apply larvicide and adulticide in areas where mosquitoes breed, and survey for and eliminate prime mosquito habitat.

WNV surveillance, aggressive mosquito control activities, public education and health care provider outreach activities are ongoing in hopes of maintaining low levels of WNV. The lessons learned with surveillance and control of WNV will be applicable to the PDPH's response to other newly emerging arboviruses in the United States. Other arborviruses that are reportable include:
St. Louis encephalitis virus, Powassan virus, Eastern and Western equine encephalitis, and California serogroup arboviruses.

measles

Measles is a serious, vaccine-preventable viral illness, with the first dose of vaccine given to children on or after the first birthday. Complications of infection can include pneumonia, diarrhea, ear infections, blindness, and inflammation of the brain, with outcomes more severe among people who are malnourished or immunosuppressed. There were no (0) cases of measles in Philadelphia in 2005. Seven suspect case reports were received by the Division of Disease Control (DDC) but, upon investigation, 3 were found to be from asymptomatic persons receiving screenings for immunity, and 4 were from persons diagnosed with other rash illnesses (dermatitis, scarletina, etc.). Preliminary national data indicate there were 62 cases reported in the United States in 2005.

In recent history, Philadelphia had 1 measles case in 2001 (associated with exposure in Mongolia), and 1 case in 1998 (associated with exposure in Nigeria). In 1997, there were 7 cases in Philadelphia, 6 of which were associated with residence in the close quarters of a shelter facility, and 1 of which was associated with exposure to a known outbreak in Brazil. The Philadelphia public school system requires students from kindergarten through grade 12 to have 2 doses of measles vaccine, both administered after 1 year of age. Recent annual audits of Philadelphia public high school vaccination records have shown that >90% of students have 2 documented doses of MMR (measles-mumps-rubella) vaccine.

Globally, measles remains a significant cause of morbidity and mortality. The World Health Organization (WHO) states that annually there are approximately 30-40 million cases (and >600,00 deaths) attributable to measles. Clinicians seeing suspect measles cases should obtain travel histories from the patients in order to find possible epidemiologic links to regions with measles outbreaks. All suspect cases of measles must be reported to DDC promptly (within 24 hours, if not sooner). Because the virus is so contagious and the outcomes so severe, a measles diagnosis in the community elicits an immediate public health response for disease prevention and control.

mumps

Note: In response to an outbreak of mumps in the United States at the time of writing of this report, the Centers for Disease Control and Prevention (CDC) has modified its descriptions for recognition, definition, testing, and investigation of suspect mumps cases. Regularly updated materials can be found on the Internet via: http://www.cdc.gov/nip/diseases/mumps/default.htm .

Mumps is a vaccine-preventable viral illness, transmitted by respiratory droplets or direct contact with infected respiratory secretions or saliva, and with an incubation period of 16 – 18 days (range 12 – 25 days) [WHO 2003; CDC 2004]. The infectious period spans approximately 12 days: from 3 days before symptoms appear to 9 days after the symptoms appear. Mumps infections are typically characterized by swelling of the parotid (salivary) glands on 1 or both sides of the head that lasts for at least 3 days, preceded by and accompanied by symptoms such as fever, headache, fatigue, muscle aches, and loss of appetite. According to the CDC, up to 20% of infected persons can be asymptomatic, and an additional 40% to 50% of infections may present with just respiratory symptoms and malaise. As described by CDC and the World Health Organization (WHO), although it is typically a mild disease of childhood, approximately 15% of mumps cases have meningeal signs. Permanent sequelae are rare with nerve deafness being most common of these. Furthermore, 20% to 50% of infected adolescent and adult males can have orchitis (testicular inflammation), which can lead to testicular atrophy and (rarely) diminished sterility. Before the vaccine era, mumps infection was the most common cause of acquired deafness. In the United States, people tend to be vaccinated against mumps with the MMR (measles, mumps, rubella) vaccine. The Philadelphia public school system requires students from kindergarten through grade 12 to have at least a single dose of mumps vaccine, administered after 1 year of age. Since 1989, most children in Philadelphia have received 2 doses of MMR vaccine, and recent annual audits of public high school vaccination records have shown that >90% of students have 2 documented doses of MMR vaccine.

It is important that clinicians recognize that the clinical presentation of mumps can be mimicked by infection with other viruses, such as Epstein-Barr virus, enteroviruses, parainfluenza viruses, and adenoviruses. Because the clinical diagnosis is not specific, the confirmatory diagnosis of mumps infections is laboratory-based. Mumps diagnosis can be made by viral culture of urine or nasopharyngeal aspirate, by positive serologic tests,

or by methods to detect mumps viral RNA (e.g., PCR).

Nineteen suspect mumps cases were reported to DDC in 2005, of which 2 met the definition of a probable case and 17 were closed as non-cases; no reports met the definition for a confirmed case. One of the probable cases was in a 2 year old girl who had not been vaccinated. This child met the clinical case definition for mumps and, although a diagnostic specimen was collected, the laboratory reported the sample was insufficient for testing. The other probable case was in a 10 year old boy who had 2 documented doses of the MMR vaccine, but met the clinical definition for mumps. The boy was seen as an outpatient in a hospital (which did not conduct laboratory testing), and his school nurse reported the case to DDC. Neither case was epidemiologically linked to another recognized case of mumps.

rubella

Rubella (also known as German measles) is a vaccine-preventable viral illness, transmitted by respiratory droplets. As described by CDC, with an average incubation period of 2 weeks, the rubella virus spreads through the body of an infected person in 5 to 7 days and up to 50% of infections are sub-clinical. According to the CDC and WHO, rubella is considered a relatively mild illness of childhood, with symptoms of rash and fever for several days; however, approximately 20% of women infected with rubella in the early stages of pregnancy will have children with congenital rubella syndrome, characterized by birth defects such as deafness, mental retardation, heart defects, etc.

Vaccination has made a tremendous difference in the history of rubella. In the United States, for example, a nation-wide epidemic in 1968 resulted in 12.5 million cases of rubella and 20,000 births of infants with congenital rubella syndrome. People are now typically immunized against rubella with the MMR vaccine, which is administered on or after 12 months of age. The vaccine has virtually eliminated the disease today.

There were no (0) cases of rubella reported in Philadelphia in 2005. DDC received 1 suspect case report for a 35-year old man, but the investigation indicated he was asymptomatic and being screened for immunity. The last 2 cases of rubella infection recorded for Philadelphia occurred in 1998 and 1996.

pertussis *(Bordetella pertussis)*

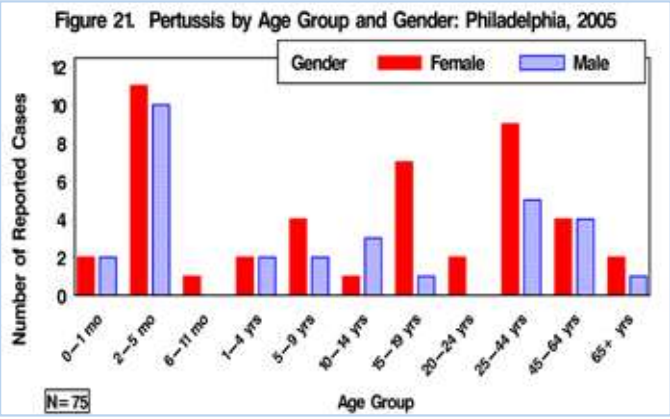
Pertussis (whooping cough) is a highly communicable and vaccine-preventable disease of the respiratory system. Caused by an infection of the upper airway with the bacteria *Bordetella pertussis*, symptoms usually occur after a 7- to 21-day incubation period, and the classic infection can include spasmodic coughing with post-tussive vomiting, apnea, and/or classic “whoop” on inspiration of breath. The pertussis-containing vaccine formulation commonly used in the United States is acellular pertussis with diphtheria and tetanus toxoids (DTaP), and has a recommended schedule of doses at 2, 4, 6, and 12-to-18 months, followed by a fifth dose at 4-to-6 years of age.

Although vaccination has markedly decreased incidence of pertussis, the disease remains endemic in the United States with 25,827 cases (8.5 cases per 100,000) reported in 2004 [CDC 2005 data]. Infants are at greatest risk for clinical disease and complications, in part because they are too young to be fully vaccinated. As a result of waning vaccine-induced immunity and also increased awareness among clinicians, adolescents and adults have accounted for a growing percentage of annual pertussis cases. In response, in 2005 the national Advisory Committee on Immunization Practices (ACIP) recommended the use of Tdap (tetanus, diphtheria, and 5-component acellular pertussis) vaccine in adolescents and adults. In early 2006, ACIP voted to recommend use of Tdap in health workers with direct patient contact in order to both protect healthcare personnel and reduce transmission of pertussis within healthcare facilities.

The current CDC clinical and laboratory case definitions for pertussis have been in use since 1997. The clinical definition is described as, “A cough illness lasting at least 2 weeks with one of the following: paroxysms of coughing, inspiratory ‘whoop,’ or post-tussive vomiting, without other apparent cause (as reported by a health professional)” [CDC 1997]. According to CDC, a case may be considered “confirmed” either when laboratory testing of specimens detects *B. pertussis* by either culture or PCR, or when a clinically compatible case is epidemiologically linked to a laboratory-confirmed case. CDC considers cases “probable” if they meet the clinical case definition but are neither laboratory-confirmed nor epidemiologically linked to a confirmed case. The Pertussis Working Group of the ACIP has recommended that the Council of State and Territorial Epidemiologists (CSTE) revisit the current case definition of pertussis used by CDC. The case definition for pertussis used

by DDC is broader than that of CDC, accepting a wider range of laboratory tests when symptoms are clinically consistent with pertussis.

In Philadelphia in 2005, 75 reports met the DDC case definition for confirmed (n=63) or probable (n=12) pertussis, yielding a rate of 4.9 cases per 100,000 population. All 12 probable cases met the clinical definition for pertussis but lacked a sufficient laboratory diagnosis. Distribution of cases by age and gender is represented in Figure 21.



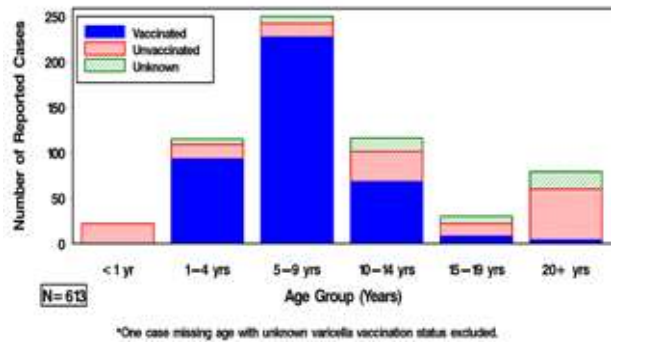
Of the 75 confirmed and probable cases, 35% of cases were in children <1 year, 13% of cases were in children aged 1 to 9 years, 16% of cases were in adolescents aged 11 to 19 years, and 36% of cases were among adults aged 20 years and older. Forty-five (60%) of Philadelphia's pertussis cases were female. Among cases in children less than 5 years of age (n=30), 25 (83%) were age-appropriately vaccinated with DTaP. Of the five children who were not age-appropriately vaccinated, two were 2 months of age, two were 4 months of age, and one was 5 months of age at illness onset. According to DDC's immunization registry, no vaccination history was available for one 2-month old, but the other four children have documentation of age-appropriate DTaP after their illness. The median number of exposed contacts for each case was 3 (range 0 to 12), and community clinicians had provided prophylaxis to a median of 2 contacts of each case (range 0 to 9 contacts). There were no community-based pertussis outbreaks detected in Philadelphia in 2005 but, of the 75 pertussis cases, 33% (n=25) were identified as part of a household cluster upon investigation. Across age categories, 27% of cases were in children <1 year, 41% of cases in children and adolescents aged 1 to 19 years, and 33% of cases in adults 20 years and older were associated with a household cluster. If adults were getting pertussis from only cases in children and adolescents, a higher proportion of cluster-associated cases would have been expected. In other words, in 2005, two-thirds of adults were infected in a community setting, without known association with an infant or child case.

In suspected outbreaks, DDC can help facilitate diagnostic testing and assist with infection control and disease management. To report a case or speak with a medical specialist about a suspected outbreak of pertussis, please call 215-685-6748.

varicella (chickenpox)

In January 2005, varicella became a reportable condition nationwide as recommended by the Council for State and Territorial Epidemiologists (CSTE) and the Centers for Disease Control and Prevention (CDC). Varicella and herpes zoster (HZ) have been reportable conditions in the City of Philadelphia since 1995, so the nationwide changes did not affect current varicella zoster virus (VZV) disease reporting policies in the city. During morbidity year 2005, 614 confirmed and probable varicella cases from Philadelphia were reported to the PDPH Varicella Active Surveillance Project (VASP). The majority of the year 2005 varicella case reports (500, 81%) resided outside the West Philadelphia active surveillance area. Median age for the varicella case reports was 8 years (Range: 3 months to 70 years). Most of the reported varicella cases (400, 65%) were vaccinated, while 25% were unvaccinated and the remaining 9% were unsure of their varicella vaccination status. Among the vaccinated cases, 376 (94%) were breakthrough infections occurring more than 42 days from varicella vaccination, 20 (5%) were vaccinated within 42 days of rash onset, and 4 (1%) had an unknown vaccination date. Varicella vaccination status varied by age group (Figure 22) with higher proportions of vaccinated cases occurring among those age groups where use of varicella vaccine has been more widespread (1-4 years, 5-9 years, and 10-14 years).

Figure 22. Citywide Varicella Reports by Age Group and Varicella Vaccination Status: Philadelphia, 2005*



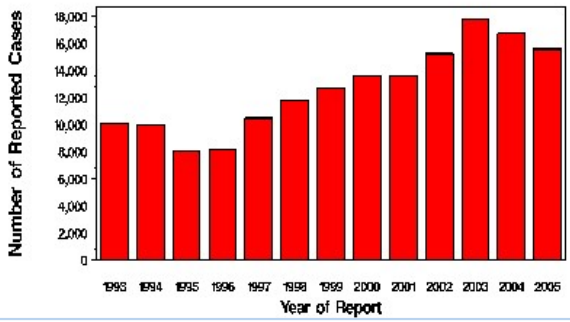
*One case missing age with unknown varicella vaccination status excluded.

Fifteen varicella cases were hospitalized city-wide in 2005: 11 unvaccinated adults, 2 infants < 1 year of age not eligible for vaccination, and 2 previously vaccinated children with breakthrough varicella. None of the hospitalizations resulted in death. For more information on VASP activities, please see the Special Projects section of this report.

Chlamydia trachomatis

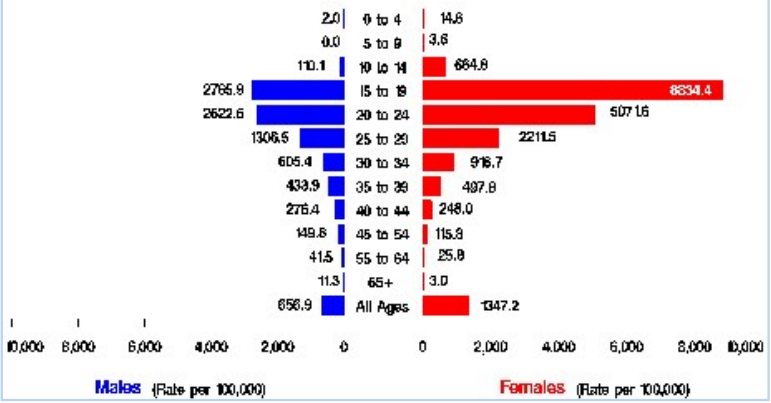
Chlamydia is among the most frequently reported infectious diseases in the United States. Although 929,462 cases were reported in the United States in 2004, an estimated 3 million cases occur annually. In Philadelphia, 15,577 cases were reported in 2005, a decrease of 6.9% (-1,146 cases) compared to 2004 and a net decrease of 12.2% (-2170 cases) compared to the peak of 17,747 cases reported in 2003 (see Figure 23). This decrease is attributed to the impact of sustained, increased screening activities, especially among adolescent males and females in 2003 and 2004 which resulted in the identification and treatment of 9,138 persons in 2003, 8,623 persons in 2004 and 8,387 persons in 2005 through our citywide screening program. The number identified and treated includes 1,112 high school students in 2003, 960 in 2004 and 812 students in 2005. (See below for more details on high school screening.) The elimination of these individuals from the reservoir of predominantly asymptomatic, infected persons during these 3 years combined with ongoing screening and treatment efforts is credited with the progress we have made in reducing reported morbidity.

Figure 23. Reported Cases of Chlamydia: Philadelphia, 1993–2005



Rates of reported chlamydia infection are consistently much higher in women than in men (Figure 24) and are highest in the 15-19 age group. In 2005, there continued to be a disproportionate number of female cases reported, resulting in a female/male ratio of 2.36:1; this is down, however, from F/M ratios of 3.87:1 in 2001, 2.40:1 in 2002 and 2.60:1 in 2003 and nearly the same as the 2.33:1 ratio in 2004. Overall, the number of male cases of chlamydia reported in 2005 increased 112.2% (+2,449 cases) compared to 1999, before targeted male screening began. The identification and treatment of males is critical to reduce both the high reinfection rates of women (25% within 5 years) and the continued spread of infection in the community.

Figure 24. Chlamydia Rates per 100,000 Population by Age and Gender: Philadelphia, 2005



Note: Screening of asymptomatic men and women in both traditional and nontraditional venues has become feasible and is now widely available with noninvasive, urine-based tests using nucleic acid amplification methods. Urine-based screening of young men and women was initiated at the end of 1999 primarily in the Youth Study Center of the Philadelphia Corrections System. Screening efforts expanded during the period 2001-2005 to include District Health Care Center clinics, Adult Prisons, Philadelphia Public High Schools and Family Court. In total, in 2005, 158,378 tests for chlamydia were performed through the citywide screening program with 9,342 (5.9%) positives identified. In 2004, 154,612 tests were performed with 9,763 (6.3%) positives; in 2003, 153,324 tests were performed with 10,541 (6.9%) positives; and, in 2002 108,893 tests were performed with 8,246 (7.6%) positives identified. This trend of decreasing positivity rates from 2002 through 2005 is certainly encouraging.

lymphogranuloma venereum (LGV)

LGV is a systemic sexually transmitted disease (STD) caused by invasive strains of *Chlamydia trachomatis* (serovars L1, L2, L3). The primary lesion of LGV is a small genital or rectal papule, ulcer or erosion that appears at the site of inoculation and may or may not be painful. These lesions may be clinically similar to the lesions of genital herpes, primary syphilis, or chancroid. In men who have sex with men (MSM), lesions may be anorectal and therefore not easily observed. The incubation period from exposure to developing a lesion is 3-30 days. A secondary stage of LGV infection (the anogenitorectal, or inguinal syndromes) may occur several months after exposure. The anogenitorectal syndrome is characterized by hemorrhagic or non-hemorrhagic proc-

titis/proctocolitis, with purulent, mucoid, or bloody anal discharge, rectal pain/spasms, tenesmus, or constipation. The inguinal syndrome is characterized by inguinal or femoral adenopathy that may go on to suppurate and ulcerate (buboes). Untreated, the secondary stage manifestations of LGV may progress to genitorectal fistulae, strictures, or genital elephantiasis.

While there have been no cases of LGV reported in Philadelphia in many years, there have been recent cases of LGV reported in the United States (specifically San Francisco, Atlanta and New York). Those patients identified have been MSM with high rates of HIV co-infection and multiple sexual partners. They also report unprotected anal intercourse and have presented with hemorrhagic proctitis/proctocolitis.

There is both serologic testing and local site testing available for LGV. Rectal specimens can be collected using the collection swabs and tubes for standard DNA hybridization (GenProbe) or DNA amplification tests (BD, GenProbe, TMA, Roche). If test kits are not available, then a sterile dry swab can be used. For serologic testing 5 cc of blood in a red topped tube should be collected. The Philadelphia Department of Public Health (PDPH) is working with the Centers for Disease Control and Prevention (CDC) to provide specific testing. Contact the STD Control Program (215-685-6741) with suspected cases to discuss specimen collection and arrange for testing.

gonorrhea (*Neisseria gonorrhoeae*)

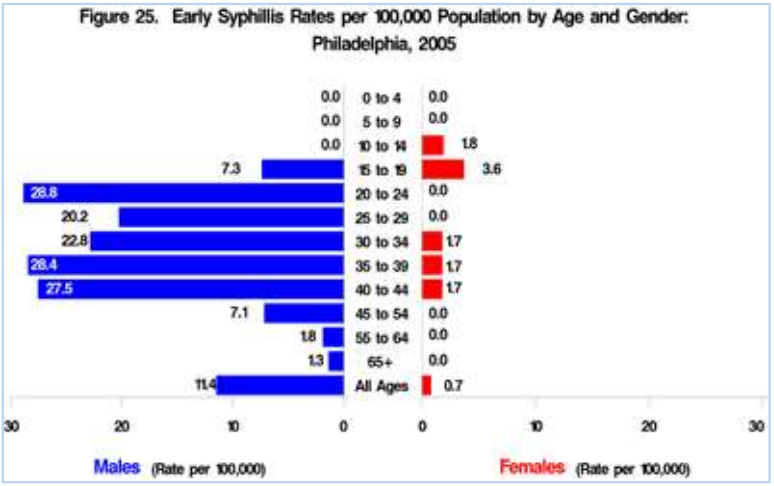
In 2005, 5,053 cases of gonorrhea were reported in Philadelphia, a 2.9% decrease (-153 cases) from 2004. This was the fifth annual decrease in reported cases of gonorrhea. Teenagers and young adults remain disproportionately affected with 56.9% of the cases (2,875) occurring among 15-24 year-olds.

The number of PDPH-supported routine gonorrhea screening tests for asymptomatic men has increased dramatically from in 1,991 tests (25 positives) in 2002 to 55,849 screened (1,496 positive) in 2005. The increase was made possible by enhanced screening efforts that made use of a laboratory test that could detect both *Neisseria gonorrhoeae* and *Chlamydia trachomatis*. While a large proportion of men infected with gonorrhea will be symptomatic and seek medical care, routine screening in women remains necessary as women are likely to have subtle or no symptoms. In 2005, PDPH provided or supported 99,237 screening tests for gonorrhea among females resulting in the identification of 1,146 (1.2%) infected women; these cases accounted for more than 43.7% of the total reported in women (2,622). As with chlamydia, women with gonorrhea who are untreated are at risk of developing complications including pelvic inflammatory disease (PID) that may lead to infertility and increase the chance of ectopic pregnancy. Increased screening and educational efforts targeted at young, asymptomatic men and women will be needed to have a continued impact on this disease.

early syphilis (*Treponema pallidum*)

The 86 cases of reported primary and secondary (P&S) syphilis morbidity in 2005 represent a 19.4% increase (+14 cases) from the 72 cases reported in 2004. Since 1990, the peak year of our most recent syphilis epidemic, there has been a 96.3% overall decrease in reported P&S syphilis from the 2,361 cases reported in that year. This overall decrease may be attributed to many factors including saturation of the at-risk population, increased use of condoms and reductions in unprotected sexual activity resulting from educational messages targeting HIV and STD prevention, and the disease intervention activities of the Philadelphia STD Control Program which aggressively provided testing and preventive treatment to contacts of early syphilis cases. Reported rates of P&S syphilis were higher among men than women in 2005 (Figure 25).

Figure 25. Early Syphillis Rates per 100,000 Population by Age and Gender: Philadelphia, 2005



The cause may be multifactorial, including an increase in the percent of male P&S cases attributable to men who have sex with men, from 0.9% in 1995 to 76.3% (61 of 80 males) in 2005, and an increased likelihood that a male will notice a lesion on his genitalia and be diagnosed. In 2005, 122 cases of early latent syphilis

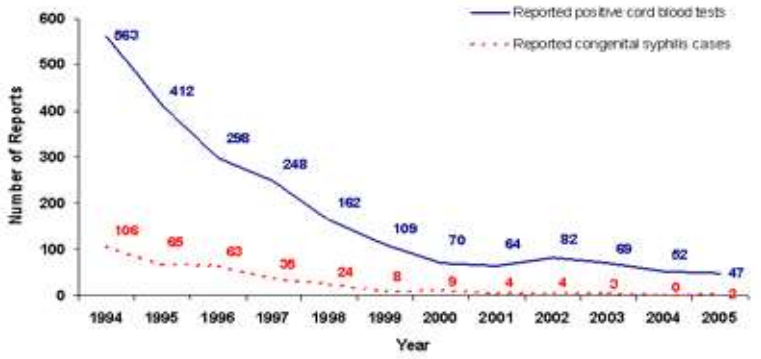
were reported; this represents a decrease of 19.2% (-29 cases) when compared to 2004. Reported early latent syphilis cases have declined 99.1% (-3,785 cases) since the peak of the epidemic in 1990 when 3,907 cases were reported. The rates of syphilis remain higher among blacks than whites and hispanics, although this racial disparity is narrowing.

With rates of infectious syphilis at an all time low in the United States, CDC launched a National Plan to Eliminate Syphilis by 2005. The Philadelphia STD Control Program, in conjunction with this effort, initiated a weekly syphilis outbreak surveillance report and established thresholds for reported morbidity above which outbreak control activities are initiated. In addition, liaisons with community-based organizations have been established and intensified syphilis case management activities have been maintained.

congenital syphilis

In 2005, 2 cases of congenital syphilis were reported; this compares to no cases reported in 2004 and 3 cases reported in 2003. For 2005, this represents a 99.3% (-299 cases) decrease when compared to the 301 cases reported in 1991, the peak year since the reporting definition changed in 1990. Of particular note is the number of reactive cord blood/maternal serologic tests for syphilis detected at delivery (Figure 26). Recently, this number decreased from 82 in 2002 to 47 cases in 2005 (-43%). Since 1992, we have seen an overall 94.5% decrease (-817 reports). The occurrence of congenital syphilis is directly linked to the incidence of early syphilis in the city, especially among heterosexual men and women. Adequate prenatal care, with routine screening and treatment of syphilis in pregnant women clearly plays a major role in preventing congenital syphilis. The shift in cases from the heterosexual to the male homosexual community has also played a role in reducing congenital syphilis morbidity.

Figure 26. Reported Cases of Congenital Syphilis and Positive Cord Blood Tests: Philadelphia, 1994 to 2005



Special notes on syphilis reports: When the Division of Disease Control (DDC) receives a report of infectious syphilis, and the laboratory report precedes the physician case reports, the physicians are contacted to confirm diagnosis, stage of infection and treatment. Patients diagnosed with infectious or early syphilis are then contacted confidentially by trained DDC staff and offered voluntary disease prevention and partner notification services. These efforts are designed to help patients avoid reinfection and to stop the spread of infection in the community. Case reports also allow DDC to maintain historical diagnostic and treatment information, which is often critical for proper patient management. For example, patients treated for syphilis may remain seropositive for decades after adequate treatment. Only through a comparison of quantitative serology results at time of initial treatment with subsequent test results can the current status of a patient with a history of syphilis be properly evaluated. DDC maintains these records and routinely assists health care providers and their patients to obtain this critical information, even when the patient has seen many different providers over the years.

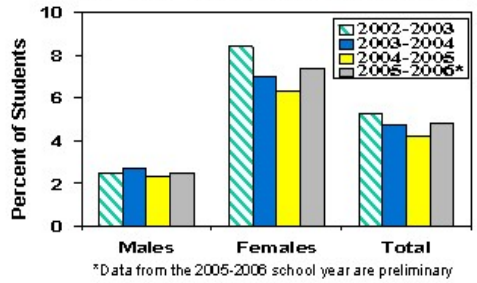
STD screening in philadelphia public high schools

Reported morbidity for *Chlamydia trachomatis* in Philadelphia continues to disproportionately affect adolescents in the 15-19 age group. (see figure 24, above). In 2005 the rate of chlamydia infection in girls and boys between the ages of 15-19 years was 8,834 and 2,765 per 100,000 population, respectively. While reported rates among boys remain lower than among girls, they have increased as screening programs reach them. In general, lower rates among adolescent males may be attributed to a number of factors including limited availability of routine screening, behavioral traits, and physiological/anatomic differences between males and females that may affect susceptibility, duration of infection and sensitivity of testing.

Because the CDC's 2001 Youth Risk Behavior Survey of High School Students indicated that 62% of Philadelphia students had been sexually active, PDPH determined that diagnosis and treatment of STDs in adolescents should be a priority. Continued advances in testing

technology, such as non-invasive urine-based testing for chlamydia and gonorrhea, made large-scale screening of adolescents feasible. Thus, in January 2003, PDPH and the School District collaborated to initiate a city-wide voluntary screening effort including all public high schools. Between January and June of 2003, 19,713 students were screened in 53 Philadelphia public high schools. The program continued to screen large numbers of students each year with 17,019 students tested in the 2003 –2004 school year and 16,378 tested in the 2004-2005 school year. In the most recent school year 15,920 students being tested between October 2005 and June 2006. Of the 7,513 females screened, 559 (7.4%) tested positive for chlamydia alone (487), gonorrhea alone (36) or both STDs (36); of the 8,407 males screened, 206 (2.5%) were found to be infected with chlamydia alone (196), gonorrhea alone (3) or both STDs (7). Each year, treatment has been confirmed for at least 98% of those who tested positive. As an addition to the program in the public high schools, the STD Control Program initiated a similar program in four of the City's charter high schools towards the end of the 2005-2006 school year (with plans to expand to additional charter schools in the upcoming school year). Five hundred and sixty (560) students were tested through this charter school initiative. Of the 298 females tested, 21 (7.0%) were positive for chlamydia (14), gonorrhea (3), or both infections (4). Of the 262 males tested, 10 (3.8%) were positive for chlamydia (none were positive for gonorrhea or both STDs). In total, the STD Control Program provided testing to 16,480 students during the 2005-2006 school year.

Figure 27. Percent of Students Testing Positive for CT and/or GC by Sex and School Year



*Data from the 2005-2006 school year are preliminary

Since the 2002-2003 school year, ongoing testing has been provided at high schools with Health Resource Centers (HRC). These centers offer counseling and referral services for STD, HIV and family planning. They also provide condoms to students whose parents have not opted them out of the program. During the 2005-2006 school year, the 4 HRCs tested 1,899 students for gonorrhea and chlamydia. Of the 1,069 females tested, 11.4% (122) were found to be infected with chlamydia (105), gonorrhea (9) or both (8) STDs. Of the 830 male students tested, 4.2% (35) were found to be positive for chlamydia (31), gonorrhea (1), or both STDs (1). Of those who tested positive, 89.8% have been treated to date.

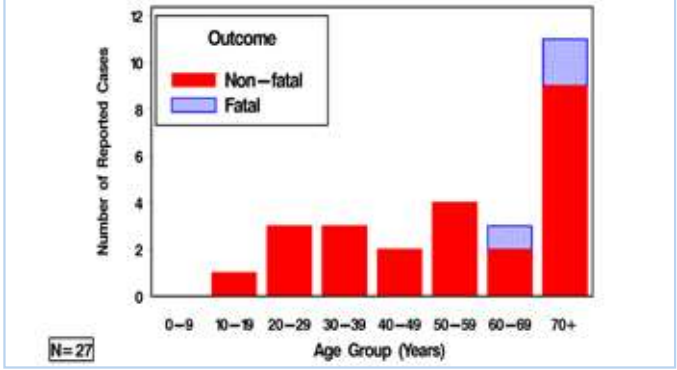
During this most recent school year, the 3 screening programs (public school, charter school and HRC school) combined identified more than 950 students infected with chlamydia, gonorrhea or both STDs. The treatment of these students prevented hundreds of cases of PID and prevented the transmission of these infections to hundreds more. The STD Control Program continues to search for new venues and innovative programs to reach adolescents, who are disproportionately affected by these diseases.

group A *Streptococcus*, invasive

Group A *Streptococcus* (GAS) causes a spectrum of human infections, from pharyngitis and mild soft-tissue infections to life-threatening toxic shock. GAS is typically spread through direct contact with infected pharyngeal secretions, skin, or wounds. Invasive GAS infection is a reportable condition in Philadelphia; a confirmed case of GAS infection is defined by the Centers for Disease Control and Prevention (CDC) as any infection where the organism is isolated from a normally sterile site, including cerebrospinal fluid, blood, or joint, pleural or pericardial fluid. Cases of Streptococcal Toxic Shock Syndrome (STSS) are also considered to be invasive GAS infections.

In 2005, there were 27 reported cases of invasive GAS, with a citywide incidence of 1.8 per 100,000 persons. This incidence is slightly higher than the national incidence of the disease in 2005 (1.4/100,000 persons). GAS was isolated from blood in 26 (96%) of Philadelphia cases. Seventeen (63%) of cases were in females. There were 3 known fatalities. The age and death distribution of cases is shown in Figure 28.

Figure 28. Group A Strep by Age Group and Outcome: Philadelphia, 2005



In 2005, the Division of Disease Control (DDC) investigated a GAS outbreak occurring in a long-term acute care facility. The cases included 2 cases of invasive infection (bacteremia), 2 cases of infected wounds, and 2 cases of positive tracheal aspirate. All 6 of the case patients had open wounds at the time of their infection and shared a common exposure to the wound cart and/or wound care nurse. The 3 isolates sent to CDC were all type 11, *emm* 89. DDC is available to help identify and investigate GAS clusters, facilitate collection and transport of clinical specimens for molecular typing, and offer guidelines for the management of institutional GAS outbreaks.

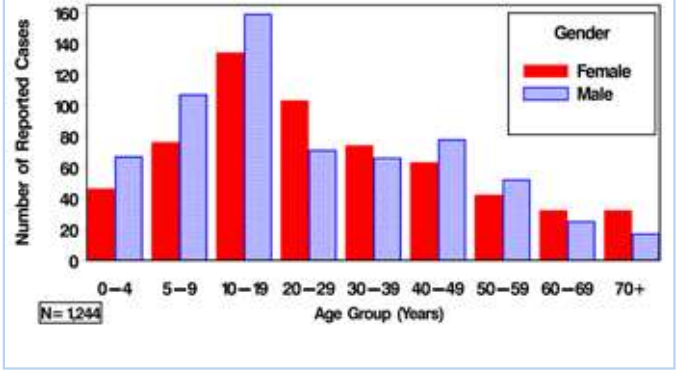
animal exposures and animal rabies testing

In Philadelphia, animal bites are reportable to DDC. In addition, DDC maintains records of other reported animal exposures, such as scratches or contact with bodily fluids, in which there was a risk of rabies exposure. In 2005, DDC received reports of 1,418 animal exposures (including bites). Reported exposure types included 1,365 bites (96.3%), 24 scratches (1.7%) and 29 other exposures (2.0%).

Dogs and cats accounted for 77.9% and 18.8% of all reported exposures, respectively. The other species of animals with reported exposures included bats (15), mice (9), rats (4), raccoons (3), and hamsters (3). An owner of the animal involved was identified for 61.1% of incidents. In 193 bite incidents (13.6 %), it is known that victims were bitten by a pet from their own household.

Age of the bite victim was available in 1,244 (87.7%) of the exposure incidents. Among these, the median age was 22 years. For children, reported bites were more frequent among boys than among girls. The age and sex distribution of cases is in Figure 29.

Figure 29. Animal Exposures by Age Group and Gender: Philadelphia, 2005



In 2005, the Philadelphia Public Health Laboratory tested 60 animals for rabies by direct fluorescent antibody staining of brain tissue. The animals tested included 30 cats, 20 dogs, 7 bats, 2 foxes, and a monkey. Among all Philadelphia animals tested for rabies, 5 were positive: 2 adult cats, an 8-week old puppy, and 2 wild bats. One of the cats had recently been adopted from a feral cat colony; the other was a stray cat that had scratched and bitten neighborhood residents who attempted to handle it. The infected puppy had been adopted from a shelter in central Pennsylvania, and some of its littermates were also tested and found to be negative for rabies. Rabies post exposure prophylaxis

was given to all potential contacts of these animals.

The most recent complete United States rabies surveillance data are from 2004, when 6,836 cases of rabies animals were reported to CDC. The most commonly reported species were raccoons (37.5%), skunks (27.1%), bats (19.9%), and foxes (5.7%). Among US states, Pennsylvania ranked fifth in the number of reported rabies cases in animals in 2004 (415 positive animals). These 415 animals included 237 raccoons, 63 skunks, 39 domestic cats, 37 bats, and 22 foxes.

In 2004, 8 United States cases of rabies in humans were reported to CDC, including 4 people infected through organ transplantation. In 2004, a teenage girl in Wisconsin became the first known unvaccinated person to survive rabies infection after the onset of symptoms. Two of the human cases were infected outside the US.

In recent years, most human cases of rabies in the United States have been associated with exposure to bats carrying the rabies virus. Therefore, in the event that a person is exposed to a bat and the bat is not available for testing, rabies post exposure prophylaxis (PEP) is indicated. To arrange for rabies fluorescent antibody testing of animals, or for medical consultation on the management of animal exposure incidents, contact DDC at (215) 685-6748. General PEP guidelines are also available at: http://www.phila.gov/health/units/ddc/DDC_Newsletters.html.

pandemic influenza

The Philadelphia Department of Public Health (PDPH) has worked with key partners to develop a Public Health Emergency Response Plan. The emergency plan outlines how PDPH and partners work to detect disease-causing agents and case patients and respond to public health emergencies. The plan is broad-based, and lays out actions that are applicable to most situations, whether the exposure is terrorist-related or naturally occurring.

As an annex to the Public Health Emergency Response Plan, PDPH has developed a supplemental plan addressing influenza-specific issues. The Pandemic Influenza Preparedness Plan was built using information provided by partners including the Centers for Disease Control and Prevention (CDC) and the World Health Organization. The Pandemic Influenza Preparedness Plan is being reviewed and revised to include the most recent guidance provided by the United States government. For updates on the plan, please visit the emergency preparedness website: www.phila.gov/ready.

PDPH's guidance for pandemic influenza is organized into 5 main actions to ensure that disease is detected early and that interventions are rapidly put into place to limit the spread of the disease. In particular, PDPH places an emphasis on ensuring special population groups are included in the plan. The PDPH action items and guidance for pandemic influenza are summarized below. Following a summary of the plan are some additional activities PDPH is working on to further prepare for an influenza pandemic.

ACTION ONE
Enhance disease surveillance to ensure early detection of the first cases of pandemic influenza in Philadelphia

PDPH must ensure that systems are in place to identify cases of avian influenza in the city. Human avian influenza cases must be rapidly identified so that actions can be undertaken to prevent and stop the spread of avian influenza. The control of avian influenza transmission in humans requires a partnership between the medical community and public health. PDPH will work with Philadelphia's hospitals and healthcare providers to ensure early recognition and control of avian influenza A (H5N1), or any other possible new viral strain that might emerge with pandemic potential.

1. Surveillance

PDPH conducts surveillance for influenza and other respiratory viruses using several methods including: PDPH collects reports from clinical laboratories throughout the city during respiratory virus season (in the fall and winter). Through this system, PDPH monitors positive influenza A and B laboratory tests, as well as parainfluenza viruses, adenovirus and RSV (respiratory syncytial virus).

PDPH collects reports of influenza-like illness from sentinel (selected) health care providers in the city. PDPH monitors trends in respiratory illness in the community through surveillance of Emergency Department visits and calls to the Philadelphia 911 Call Center. These syndromic systems provide the ability to recognize significant outbreaks of influenza-related illness in the population; they also allow measurement of the impact of influenza-related illness on the utilization of healthcare services.

PDPH also monitors deaths due to influenza, as reported to the Medical Examiner's Office or as recorded on death certificates.

Most importantly, PDPH relies on reports from individual physicians. Physicians should immediately report any case of suspected influenza A (H5N1) to the PDPH Division of Disease Control (DDC).

2. Laboratory Diagnosis

Many clinical settings offer rapid and confirmatory testing for seasonal influenza A and B. The Pennsylvania Department of Health Bureau of Laboratories (BOL) also performs viral isolation and PCR assays for influenza A that can identify seasonal influenza A (H1 and H3) or avian types of influenza (H5 and H7). The BOL tests a proportion of all isolates identified in clinical laboratories throughout the state each year to monitor trends in subtype transmission. This laboratory also serves as a reference laboratory, and can perform test on specimens that test negative for influenza A with the PCR assay, and on any human cases suspected to be avian influenza or another novel strain. Health care providers are requested to notify PDPH of all suspected avian type influenza patients so that PDPH can provide clinical consultation and facilitate laboratory testing. The BOL will ensure that specimens from these patients are processed as a priority, which is important as the volume of specimens submitted to this laboratory for diagnostic testing increases during the usual influenza season.

ACTION TWO

Distribute public stocks of antiviral drugs and vaccines and provide local physicians and hospital administrators with updated guidance on clinical management and infection control

3. Healthcare Planning

PDPH has been working with health care partners, such as hospitals and physicians, to ensure that plans are in place to respond to an influenza outbreak or other mass casualty event. Hospitals are revising and evaluating plans to triage a large number of patients as well as to dramatically expand their number of acute care beds. Rapid expansion of medical care capacity for epidemic-related patients will take priority within hospital operations. Situation permitting, additional medical staff may be recruited among volunteers from elsewhere in the region.

PDPH will issue routine health alerts to health care providers to ensure rapid dissemination of information on the situation as well as to provide updated treatment protocols.

4. Infection Control

The primary strategies for preventing pandemic influenza are the same as those for seasonal influenza: vaccination, early detection and treatment with antiviral medications, and use of infection control measures to prevent transmission during patient care. All patients who present to a health-care setting with fever and respiratory symptoms should be managed according to current Centers for Disease Control and Prevention (CDC) recommendations for respiratory hygiene and cough etiquette, and questioned regarding their recent travel history.

Human influenza is thought to transmit primarily via large respiratory droplets. Pandemic influenza infection control procedures are common to the prevention of other infectious agents spread by respiratory droplets; therefore, Standard Precautions and Droplet Precautions are recommended for care of these patients. These procedures include limiting contact between infected and non-infected persons, protecting persons caring for influenza patients in health care settings from contact with the virus by wearing of surgical masks for close contact with infectious patients, wearing gloves, washing hands after contact with infectious patients, and ensuring proper disposal of contaminated solid wastes (such as gloves, and soiled linen). Healthcare workers should be vaccinated with the most recent seasonal human influenza vaccine.

5. Clinical Guidelines

Healthcare providers play an essential role in the detection of the first cases of pandemic influenza, should this virus occur in Philadelphia. If implemented early, rapid identification and isolation of cases may help slow the spread of influenza in the city. Clinicians must know what to look for and how to test patients.

PDPH routinely issues health alerts to physicians reporting influenza activity. These alerts describe the current public health situation, surveillance activity, clinical diagnostic criteria, and appropriate use of laboratory testing. Physicians are specifically asked to report cases to the PDPH, and to consider the possibility of influenza in all patients with severe respiratory illness who are returning from travel to countries or territories with known avian influenza.

6. and 7. Vaccines and Antiviral Medications

Currently, the avian influenza virus is primarily an infection of birds. The virus does not spread easily from birds to humans, and is even less likely to spread from human to human. In this setting, PDPH recommends that the usual influenza vaccine be provided in the fall and winter to high-risk groups such as the elderly or people with chronic diseases. Pneumococcal vaccine should also be provided following usual recommendations.

It is possible that the avian influenza virus will change its characteristics to spread easily from human to human. If available, vaccine and antiviral medication will be used to protect humans in the event that the avian influenza virus can spread easily from human to human and is able to cause significant illness. The initial response to an influenza pandemic will include medical care, community containment, and targeted use of antiviral drugs primarily to persons who are ill.

Vaccine

Currently, there is no commercially available flu vaccine to protect against avian influenza. However, avian influenza vaccines have been undergoing safety and efficacy testing with promising results. Like annual flu vaccine, pandemic influenza vaccine is grown in chicken eggs and takes several months to produce. The Department of Health and Human Services (HHS) recently ordered 20 million vaccine doses to provide a stockpile in the event of a pandemic influenza situation. In the event of a pandemic influenza situation, Philadelphia would receive

avian influenza vaccines from the HHS supply.

Antiviral Medication
PDPH is working to develop a local cache of the antiviral medication, oseltamivir (Tamiflu ™), and is working with area hospitals to identify additional supply needs and the optimal ways to pre-position critical supplies. The CDC has included oseltamivir in the Strategic National Stockpile. Usage guidelines for the antiviral oseltamivir in the context of pandemic influenza have not yet been issued, although the drug is likely to be reserved for treatment of individuals with influenza, and for post-exposure prophylaxis following high-risk exposures in critical personnel such as healthcare workers.

Vaccine and Antiviral Distribution
During a pandemic influenza situation, PDPH will work with partners to determine how influenza vaccine and antiviral medications will be offered. During 2005, PDPH developed and tested methods to mass distribute vaccines and oral medications using Points of Dispensing. Depending on the situation, PDPH plans to establish up to 40 Points of Dispensing across the City to deliver vaccines or medications to the entire 1.5 million population of Philadelphia. Another possible scenario is that only high-risk population groups would be selected to receive vaccine or medications. Optimal vaccine or medication distribution will be determined based on the epidemiology of the outbreak and the supply availability. During a pandemic influenza situation, PDPH will work with partners including the CDC and State of Pennsylvania to prioritize distribution of resources in accord with the best scientific evidence, while assuring fair and equitable access for all citizens.

Special Populations
PDPH recognizes that special procedures need to be put in place to ensure that vaccine and antiviral medication are distributed to persons belonging to special population groups. These groups include:

- People with disabilities
- Frail elderly
- Detention center residents and staff
- Homeless
- Hospital patients and staff
- Mentally impaired / mentally retarded and drug abuse populations
- Nursing home residents and staff

PDPH is working with a variety of partners, including community based organizations, to ensure that persons belonging to these special groups receive medication or vaccine.

ACTION THREE
Prevent local disease transmission using a range of containment strategies

8. Community Disease Control and Prevention
The spread of an infectious agent, such as influenza, in a community can be slowed in several ways. Containment strategies include measures that affect individuals (e.g., isolation of patients and monitoring their contacts), and measures that affect groups or entire communities (e.g., cancellation of public gatherings).

Using data gathered through surveillance systems, PDPH, state and federal authorities will implement the most appropriate strategies to slow the spread of the disease. PDPH is working with partners to ensure that: Traditional partners (e.g., public health and health care workers) and non-traditional partners (e.g., police) are identified and engaged in the planning process as well is in training drills; Mechanisms for solation and quarantine are identified; and Medication evaluation and isolation procedures are distributed to health care providers and other appropriate groups.

9. Reduce Travel Related Risk of Disease
To date, avian influenza cases have not been reported in the United States. The World Health Organization and Centers for Disease Control and Prevention websites provide information on which countries have reported avian influenza cases. People who are planning to travel to countries that have reported cases of avian influenza can take several actions to minimize their risk of getting ill from avian flu. Travelers should:

- Avoid all direct contact with poultry, including chickens, ducks, or geese that appear to be well, and farms or live-animal markets with poultry, and should avoid touching surfaces contaminated with poultry feces or secretions.

- Reduce possible exposure by (a) practicing good hand hygiene with frequent hand washing or use of alcohol gels and (b) not ingesting undercooked eggs or food made from poultry.

- Avoid handling raw poultry (e.g., during cooking classes).

- Be vaccinated against routine influenza strains if traveling to areas with avian influenza activity, preferably at least two weeks before travel.

- Consult with a health care provider if travelers become ill with fever and respiratory symptoms within 10 days of returning from an affected area.

If an influenza pandemic begins outside the United States, inbound travelers will need to be screened to decrease disease importation into Philadelphia. PDPH and partners such as airport personnel, police, and others will develop protocols to screen travelers and to treat and transport ill persons who arrive at city airports, ports, or other areas.

ACTION FOUR

Provide ongoing communication with the public (about the response effort, including the purpose and duration of containment measures)

10. Public Health Communications

The responsibilities of public information personnel during a pandemic influenza situation are to ensure rapid and accurate dissemination of information to the public with the main goal of informing the public to take the appropriate precautionary actions. PDPH will develop and disseminate routine updates to the media and other outlets of public information.

ACTION FIVE

Provide psychological and social support services to emergency field workers and other responders

11. Workforce Support

The response to an influenza pandemic will pose substantial physical, personal, social, and emotional challenges to healthcare providers, public health officials, and other emergency responders and essential service workers. Medical and public health responders and their families will be at personal risk. PDPH will work with partners to secure psychosocial support services for these at risk individuals.

The entire Pandemic Influenza Preparedness Plan is posted on the Emergency Preparedness and Response website at www.phila.gov/ready. Additional materials on pandemic influenza and avian influenza are available on the website, including facts, frequently asked questions, and other resources.

In addition to developing a comprehensive Pandemic Influenza Preparedness Plan, PDPH is working on many other activities to enhance readiness for a potential pandemic.

PDPH has expanded on the WHO classification system, which was proposed in February 2005 and organizes a pandemic into the time periods *Interpandemic Period*, the *Pandemic Alert Period*, and the *Pandemic Period*. PDPH has subdivided the periods to further define the level of disease spread that will trigger particular activities over the course of the pandemic. Triggers and strategic actions have been identified for PDPH activities at each level. However, PDPH also will identify triggers and strategic actions as they apply to different groups such as businesses, schools and universities, hospitals and healthcare facilities, police, fire and city agencies, community groups, and individuals and families. The increased specificity and trigger points will help PDPH provide guidance to each group on planning for a potential pandemic.

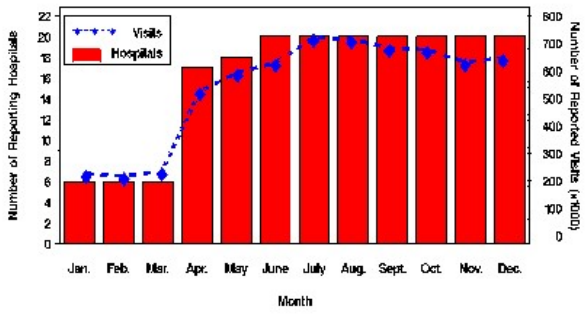
syndromic surveillance

As part of the effort to detect bioterrorist attacks or significant naturally-occurring disease events, the Philadelphia Department of Public Health, in conjunction with area health partners, constructed an active surveillance system that monitors emergency department (ED) visits and 911 emergency medical calls. De-identified data from hospital triage logs and 911 calls are received daily, cleaned and subsequently analyzed. More specifically, each visit or call is assigned a syndrome of public health interest. The collective daily syndromic proportions are then monitored over time and statistical algorithms are used to detect significant changes in trends established from previous days. Aberrations are carefully scrutinized and if unusual, via person, place or time, then they are investigated.

ED surveillance

In 2005, a significant expansion of the emergency department portion of syndromic surveillance occurred. At the start of the year, 6 hospitals participated with a daily total census averaging 700 visits. In April, 11 hospitals were added, followed by the addition of 1 hospital in May, and 2 in June – bringing the total to 20 hospitals and vastly increasing the number of ED visits analyzed, demonstrated by monthly census counts in Figure 30.

Figure 30. Reported ED Visits from Participating Hospitals by Month, Philadelphia, 2005



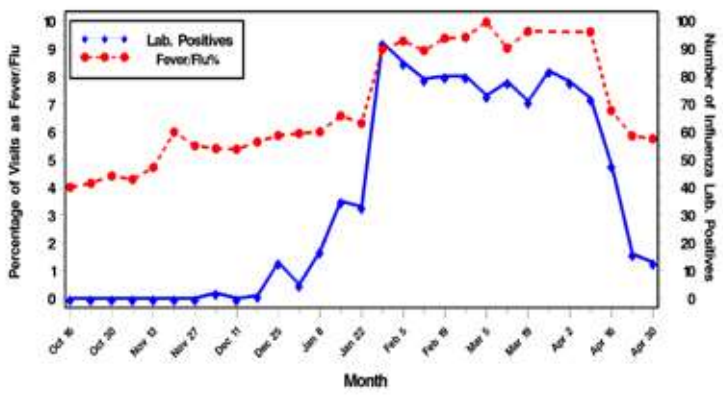
By year's end, 650,122 ED visits had been analyzed for syndromic categorization.

Due to the nature of the data, how it was collected by convenience sample, and the statistical methods employed for analysis (i.e., CUSUM algorithm), hospital-specific and spatio-temporal aberrations were somewhat frequent. From the nearly 1,000 statistically significant increases in the proportion of presenting syndromes, 36 were determined to warrant investigation. Of these 36, none were found to be outbreak-related.

An additional component of the ED surveillance involves the mining of ED visit chief complaints for verbiage that may represent a reportable disease. For 2005, this portion of our system detected 37 cases of reportable infectious disease that were not previously reported to PDPH. As a result of the follow-up of these diseases, relationships with key staff at each participating hospitals medical records department were established.

Another example of the utility of the data became apparent in preparation for the influenza season of 2005-2006. In late November, greater than expected increases in the proportion of visits that were flu-like were detected several weeks prior to the significant rise in laboratory positive specimens for influenza. This increase is demonstrated in Figure 31. As a result, PDPH prepared the first of four "respiratory disease" newsletters for the medical community that described this increase as well as other pertinent influenza-related news.

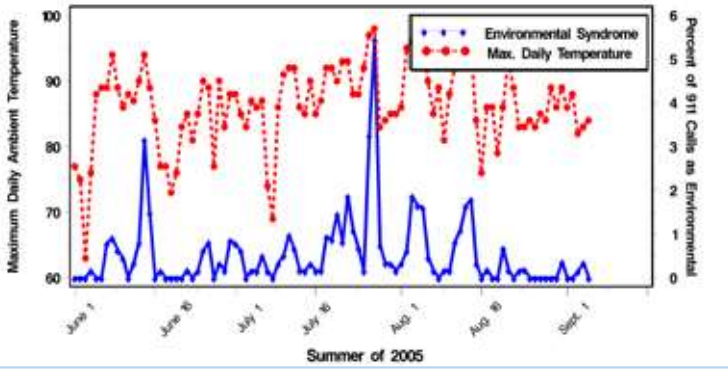
Figure 31. Time–Series Comparison of Fever/Flu Syndrome and Positive Influenza Specimens (Flu A & B), 2005–2006



911 emergency call data

The year 2005 marked the first complete year of surveillance of 911 medical calls. In sum, we received information on approximately 209, 994 calls from the Emergency Operations Center in Philadelphia. Of note, this additional data source appeared to support ED evidence of the budding flu season prior to positive isolates and also was instrumental in providing an estimate of the morbidity surrounding summertime ambient temperature increases in the city (Figure 32).

Figure 32. Time–Series Comparison of 911 Emergency Environmental Calls and Maximum Daily Ambient Temperature, 2005



future directions

PDPH plans to continually evaluate this system and seek ways to improve it and the relationships with participating hospitals. Currently, PDPH staff conduct presentations of the syndromic surveillance system at emergency department grand rounds in an effort to share the information and help those key health partners understand the value and utility of our combined efforts. Other ways to improve the analysis will also be researched, as the CUSUM algorithm will likely be supplemented by regression analyses in the future.

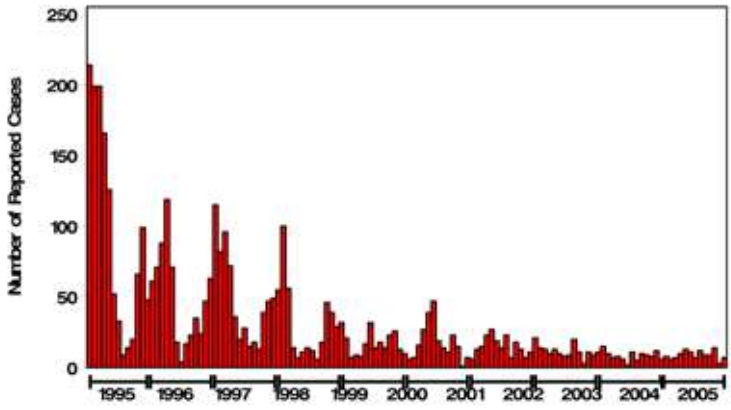
varicella active surveillance project

The Philadelphia Department of Public Health's Varicella Active Surveillance Project (VASP) completed its 11th year monitoring the occurrence and epidemiology of varicella in the target area of West Philadelphia during 2005. VASP has continued to work with community-based sites to conduct active disease surveillance of varicella and herpes zoster (shingles) in individuals less than 20 years of age from West Philadelphia as well as varicella-related studies. For more information on citywide varicella surveillance, please see the Vaccine Preventable Disease section of this report.

varicella active surveillance

In 2005, a total of 108 confirmed cases of varicella were reported from the VASP surveillance area of West Philadelphia. Varicella morbidity has remained much lower than 1995 (Figure 26) when the varicella vaccine was licensed for use in the United States. A slight increase in reported cases occurred in 2005 from 2004 (108 vs. 92), which may reflect leveling varicella vaccine coverage rates and yearly variations in reporting completeness. Since 1995, varicella vaccine coverage rates among children 19 to 35 months in Philadelphia have increased from 43% in 1997 to 90% in 2003 and remained somewhat level at 89% in 2004 according to the National Immunization Survey.

Figure 26. Varicella, Cases by Month of Onset: West Philadelphia, 1995–2005



Primary care facilities/physicians were the greatest source of varicella case reports received by the Division of Disease Control (DDC) in 2005, accounting for 31% of all reported cases during the year. Emergency room departments/hospitals reported 28% of the vari-

cella cases, while schools reported 17% of the cases. In 2005, the number of cases in all age groups remained dramatically lower than 1995 when varicella vaccine was licensed for use in the United States (Table 5, page 40). Over one-half of the year 2005 cases (54%) were 1 to 9 years; however, the vast majority (92%) of these cases were vaccinated against varicella. It must be noted that school entry regulations for varicella immunity covered grades Kindergarten through Tenth in Fall 2005. VASP data including cases by age and vaccination status were presented to the Advisory Committee on Immunization Practices (ACIP) as part of evidence to support the recommendation for a 2nd dose of varicella vaccine for previously vaccinated persons aged 4 to 12 years approved in June 2006.

Five varicella cases (3 unvaccinated adults, 1 unvaccinated infant and 1 previously vaccinated child) were hospitalized as a result of their illness in 2005. No varicella-related deaths in Philadelphia residents were reported to VASP in 2005. Only one varicella-related death from West Philadelphia has occurred since the start of the project.

herpes zoster active surveillance

Twenty-nine confirmed zoster cases in individuals <20 years of age from West Philadelphia were reported to VASP in 2005. Hospital emergency departments were the most frequent reporting source of the zoster cases (10 cases, 35%). Ages of the zoster cases ranged from 2 to 19 years with a median age of 13 years. The annual number of confirmed zoster cases <20 years of age from West Philadelphia reported to VASP has remained somewhat level for the <1, 1-4, 5-9, and 10-14 year old age groups since 2000. However, increases in zoster cases 15-19 years of age have occurred since 2000 and may be attributed to improvements in the reporting of this disease by VASP surveillance sites and the receipt of electronic billing reports for varicella and herpes zoster from hospital systems within the city of Philadelphia. Of the 29 zoster cases from year 2005, 19 (66%) reported only a history of varicella; 4 (14%) reported only varicella vaccination; 4 (14%) had a history of both disease and vaccination; and 2 (7%) were unvaccinated with uncertain disease histories. Two 2005 West Philadelphia zoster case <20 years of age were hospitalized.

validity of reported varicella history as a marker for varicella zoster virus (VZV) immunity study

During 2005, VASP, in collaboration with the Centers for Disease Control and Prevention (CDC) and the Children's Hospital of Philadelphia (CHOP), continued enrollment for a study examining the validity of a reported varicella history as a measure of varicella zoster virus (VZV) immunity among unvaccinated persons aged 1 year to 29 years. The study's findings will examine current guidelines for use of the varicella vaccine and direct modifications to current policies to assure susceptible persons are offered the varicella vaccine.

Since recruitment began in June 2004 through December 2005, study staff enrolled 1470 unvaccinated participants aged 1 to 29 years. VZV susceptibility rates by age group were 95% (1-4 years), 36% (5-9 years), 12% (10-14 years), 5% (15-19 years), and 5% (20-29 years). Preliminary analyses continue to suggest that reported varicella history is no longer a strong indicator of VZV immunity among unvaccinated children and younger adolescents in Philadelphia. Screening for varicella vaccine using disease history among older teens (15-19 years) appears to still be warranted at lower susceptibility levels as with the study population, but may be less useful when susceptibility levels are >25%. Self-reported varicella history among young adults (20-29 years) remains an accurate indicator of VZV immunity when susceptibility levels among this age group do not exceed 50%.

Table 5. Varicella, Cases by Age Group: West Philadelphia, 1995-2005*

	Age Group (Years)							
	<1 (%)	1-4 (%)	5-9 (%)	10-14 (%)	15-19 (%)	≥20 (%)	Missing	Total
Year								
2005	7 (6)	30 (28)	29 (27)	13 (12)	6 (6)	23 (21)	0	108
2004	7 (8)	31 (34)	29 (32)	4 (4)	10 (11)	11 (12)	0	92
2003	11 (9)	34 (26)	34 (26)	22 (17)	5 (4)	24 (19)	0	130
2002	10 (6)	49 (29)	44 (26)	26 (15)	9 (5)	32 (19)	0	170
2001	5 (3)	46 (26)	71 (41)	17 (10)	8 (5)	27 (16)	0	174
2000	12 (5)	60 (24)	123 (49)	30 (12)	7 (3)	18 (7)	0	250
1999	11 (4)	48 (18)	133 (49)	43 (16)	19 (7)	17 (6)	0	271
1998	15 (4)	99 (24)	189 (46)	56 (14)	17 (4)	34 (8)	0	410
1997	32 (5)	166 (27)	284 (47)	52 (9)	22 (4)	49 (8)	0	605
1996	28 (5)	189 (33)	235 (41)	65 (11)	15 (3)	44 (8)	3	579
1995	36 (3)	361 (30)	533 (45)	162 (14)	39 (3)	60 (5)	6	1,197

*Removal of stratified sampling of child-care sites after year 1999. All West Philadelphia child-care centers with 15 or more attendees were included as surveillance sites starting in year 2000.

antibiotic resistance of selected enteric pathogens: philadelphia, 2005

Pathogen	Antibiotics Tested	Resistant n *(%)*	Intermediate n *(%)*	Total Tested n
Campylobacter				
	Ciprofloxacin	9 *(35)*	0 *(0)*	26
	Erythromycin	0 *(0)*	0 *(0)*	25
Salmonella				
	Ampicillin	20 *(11)*	0 *(0)*	181
	Ceftriaxone	0 *(0)*	3 *(6)*	52
	Ciprofloxacin	0 *(0)*	0 *(0)*	157
	Trimethoprim-Sulfamethoxazole	0 *(0)*	0 *(0)*	181
Shigella				
	Ampicillin	10 *(43)*	0 *(0)*	23
	Ciprofloxacin	2 *(10)*	0 *(0)*	21
	Trimethoprim-Sulfamethoxazole	10 *(43)*	0 *(0)*	23

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

Report: 215-685-6748 **Fax: 215-545-8362**

For after hours immediate reporting & consultation: 215-686-1776 – 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

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

[redacted]

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.

APPENDIX C: ANNUAL COMMUNICABLE DISEASE TOTALS
Philadelphia Department of Public Health
DIVISION OF DISEASE CONTROL

(**NR** = Not reportable, **NA** = Not available)	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
ACQUIRED IMMUNODEFICIENCY SYNDROME	1,268	1,173	1,001	891	1,224	947	893	914	848	760	508
AMEBIASIS	4	9	27	4	15	31	30	20	18	9	6
ANIMAL BITES/EXPOSURES	1,911	2,184	2,120	2,345	2,130	2,096	1,894	1,922	1,612	1,353	1,418
ANTHRAX	0	0	0	0	0	0	0	0	0	0	0
BOTULISM	0	0	0	0	1	1	1	3	3	0	1
BRUCELLOSIS	0	0	0	0	0	0	0	1	0	0	0
CAMPYLOBACTERIOSIS	138	193	157	142	132	148	90	97	114	96	74
CHLAMYDIA TRACHOMATIS	8,079	8,118	10,480	11,763	12,660	13,593	13,586	15,234	17,747	16,723	15,577
CHOLERA	0	0	0	0	0	0	0	0	0	0	0
CRYPTOSPORIDIOSIS	24	20	14	14	24	22	13	15	19	19	27
CYCLOSPORIASIS	NR	NR	NR	NR	NR	NR	1	0	2	0	3
DIPHTHERIA	0	0	0	0	0	0	0	0	0	0	0
ENCEPHALITIS , excluding West Nile Virus	0	1	5	0	1	1	5	6	9	6	0
ESCHERICHIA COLI, shiga-toxin producing	7	5	3	6	7	6	42	17	14	11	7
GIARDIASIS	182	180	179	130	105	132	120	135	113	104	93
GONORRHEA	6,565	6,415	6,504	7,271	7,776	8,170	8,061	7,277	5,731	5,206	5,053
GUILLIAN-BARRE SYNDROME	2	1	1	0	2	3	2	2	0	0	1
HAEMOPHILUS INFLUENZAE [# type b]	NR [5]	NR [4]	NR [2]	NR [0]	NR [0]	NR [0]	7 [1]	8 [1]	14 [1]	9 [0]	14 [0]
HEPATITIS A	22	269	176	133	62	255	98	70	179	39	17
HEPATITIS B, ACUTE	104	134	171	155	152	134	111	97	51	60	27
HEPATITIS C, ACUTE, (Non-A, Non-B until 1998)	1	0	7	0	3	1	1	4	3	0	2
HISTOPLASMOSIS	0	0	1	0	0	2	1	2	2	2	0
LEGIONELLOSIS	4	8	9	15	15	19	3	10	23	31	19
LEPTOSPIROSIS	0	0	0	0	0	0	1	1	0	0	0
LISTERIOSIS	NR	3	6	5	10	12	8	19	11	11	2
LYME DISEASE	206	225	184	179	220	165	99	179	164	182	172
MALARIA	4	8	10	11	10	11	16	16	19	13	14
MEASLES	0	1	7	1	0	0	1	0	0	0	0
MENINGITIS, aseptic	16	11	39	26	25	68	71	112	120	87	95
MENINGITIS, bacterial	20	10	32	12	15	23	15	21	7*	4*	4*
MENINGOCOCCAL INFECTIONS	13	18	15	13	13	24	12	15	15	14	8
MUMPS	7	9	5	1	5	2	1	1	2	1	2
PERTUSSIS	29	100	46	31	44	61	34	31	98	109	75
PLAGUE	0	0	0	0	0	0	0	0	0	0	0
POLIOMYELITIS	0	0	0	0	0	0	0	0	0	0	0
RABIES (Human)	0	0	0	0	0	0	0	0	0	0	0
RICKETTSIAL DISEASES, including RMSF	0	1	1	1	4	0	2	4	0	7	3
RUBELLA, including congenital rubella syndrome	0	1	0	1	0	0	0	0	0	0	0
SALMONELLOSIS, excluding typhoid	472	424	395	319	346	328	287	324	316	261	305
SHIGELLOSIS	293	412	361	123	129	115	139	191	696	31	31
STREP PNEUMONIAE, INVASIVE	NR	NR	NR	NR	NR	NR	NR	NR	101	94	151
STREPTOCOCCUS, INVASIVE Gp. A[# with TSS]	NR	NR	NR	NR	NR	NR	14 [7]	16 [1]	43 [3]	24 [3]	27 [0]
SYPHILIS - PRIMARY & SECONDARY	199	141	108	89	69	67	77	71	98	72	86
SYPHILIS - CONGENITAL	65	63	35	24	8	9	4	4	3	0	2
SYPHILIS - TOTAL	1,299	1,298	1,091	796	826	622	639	589	587	470	417
TETANUS	0	0	1	0	0	0	0	0	0	0	0
TOXIC SHOCK SYNDROME, staphylococcal	0	0	2	1	0	0	0	1	0	0	0
TUBERCULOSIS	309	250	233	179	184	169	144	147	120	129	116
TULAREMIA	1	1	0	0	0	0	0	0	0	0	0
TYPHOID FEVER	6	2	1	4	1	2	2	1	1	2	1
VARICELLA	N/A**	N/A**	N/A**	N/A**	N/A**	N/A**	N/A**	N/A**	N/A**	N/A**	614
WEST NILE VIRUS	NR	NR	NR	NR	NR	0	2	6	24	1	0
YELLOW FEVER	0	0	0	0	0	0	0	0	0	0	0

* excluding *Neisseria meningitidis*, *Haemophilus influenzae, Listeria,* and invasive *Streptococcus pneumoniae.* Beginning in 2003, *S. pneumoniae* meningitis was counted with other *S. pneumoniae* cases.

**Citywide varicella data not available for these years.