

**CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
PUBLIC HEALTH SERVICES**

Division of Disease Control



**ANNUAL SURVEILLANCE SUMMARY
JANUARY 1 – DECEMBER 31, 2002**

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CENTRAL NERVOUS SYSTEM INFECTIONS AND SEPSIS

Aseptic Meningitis

In 2002, 112 cases of aseptic meningitis were reported in Philadelphia residents. This is the third straight year that an increase in case numbers occurred. Although the surge corresponds exactly with emergence of West Nile Virus infection in the United States, it is unlikely that Philadelphia has experienced a true increase in aseptic meningitis incidence. Rather, active surveillance efforts conducted by the Division of Disease Control, combined with clinician scrutiny for West Nile Virus infection (see Section *Vector Borne Diseases*), has augmented case recognition. The true incidence of aseptic meningitis in Philadelphia is unknown. Surveillance for aseptic meningitis appears to be biased towards detecting cases with more severe clinical presentations. Among the 109 cases for whom information on hospitalization was available, 98% were admitted for at least 24 hours.

Forty-five percent of aseptic meningitis cases occurred in persons 19 years of age or younger (Figure 1), males and females were equally affected. There were two fatalities, one in a patient with AIDS and one in a nine-week old infant with enteroviral infection. *Enterovirus* was the laboratory-confirmed etiology for twenty-one cases. Because disease onset for more than

Figure 1. Aseptic Meningitis, Philadelphia 2002
Age Distribution of Cases

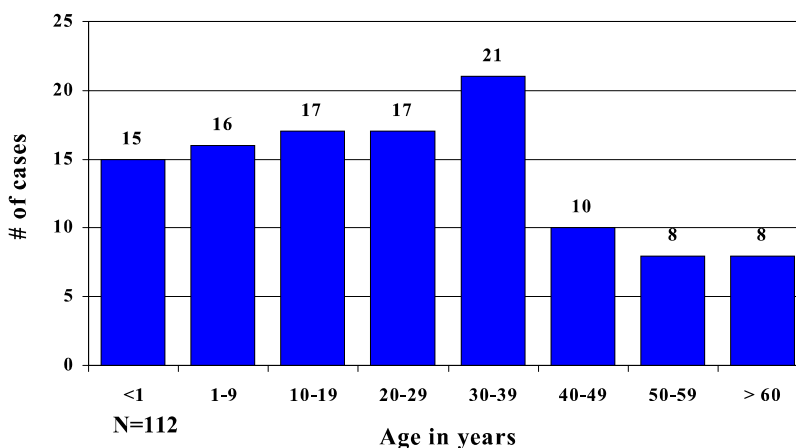
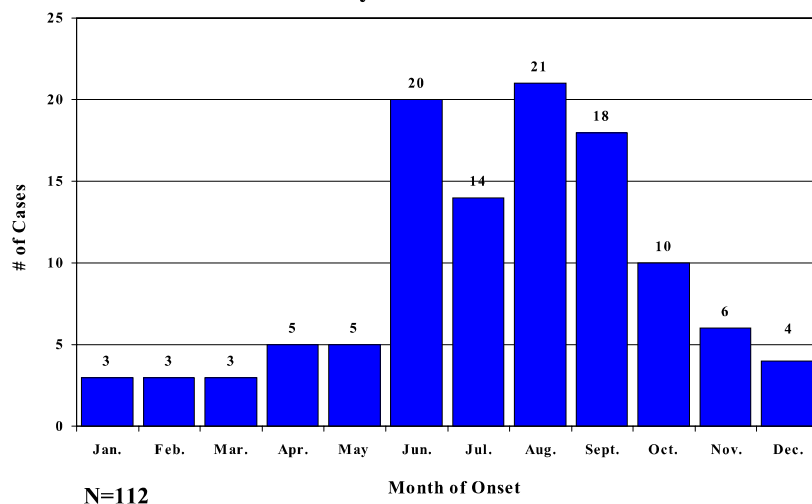


Figure 2. Aseptic Meningitis, Philadelphia 2002
Cases by Month of Onset

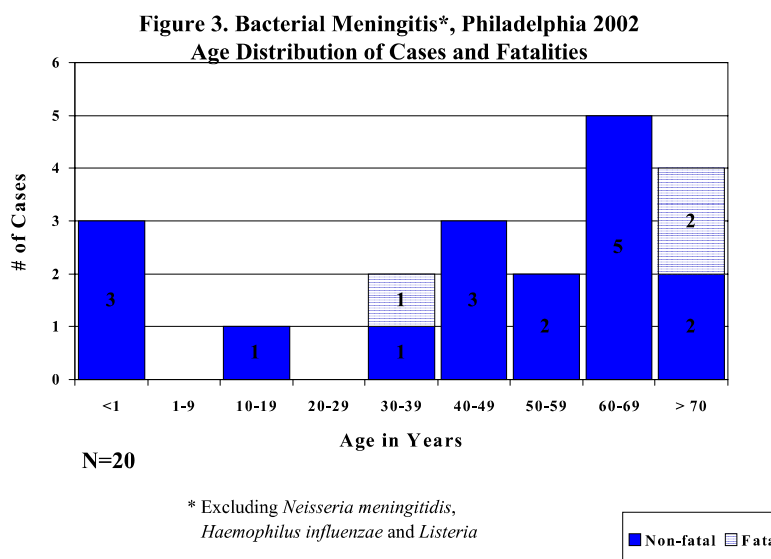


half occurred between the months of July and October (Figure 2), an enteroviral etiology was likely for many more than just those that were laboratory confirmed. There were no outbreaks of aseptic meningitis or relationships between reported cases.

Bacterial Meningitis

Twenty microbiologically confirmed cases of bacterial meningitis (excluding *Neisseria meningitidis*, *Haemophilus influenzae*, and *Listeria* which are reported as specific etiologic agents) were

identified in 2002. The age distribution of cases and fatalities are shown in Figure 3. Etiology was laboratory-confirmed as *Streptococcus pneumoniae* in 12 (60%), *Staphylococcus aureus* in three (15%), other streptococcal species in three (15%), and enteric bacilli in two (10%). Three fatalities were identified, two from *S. pneumoniae* infection and one from staphylococcal infection. However, final outcome was not established for all cases. This is the last year that CNS infections from *S. pneumoniae* will be reported under the category of bacterial meningitis. To be consistent with CDC surveillance definitions, future cases will be classified under the pathogen-specific category for *Streptococcus pneumoniae*. The 2002 cases of bacterial meningitis were distributed throughout the city and there were no unusual clusters of disease.

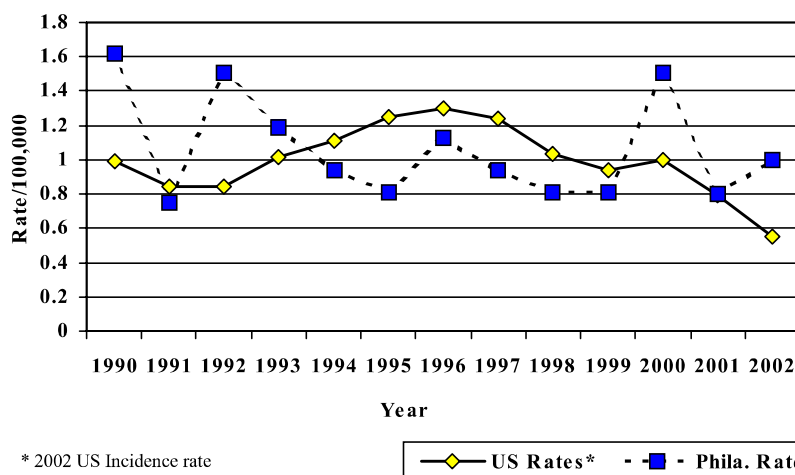


Meningococcal Infection

In 2002, fifteen cases of meningococcal infection were identified; all were microbiologically confirmed. Eleven cases (73%) presented with meningitis, while 4 cases (37%) presented with primary bacteremia. There were no fatalities. The age distribution for the fifteen cases was as follows: <1 year, 3 (20%); 1-5 years, 3 (20%); 6-10 years, 2 (13%); 11-19 years, 0 (0%); 20-29 years, 2 (13%); 30-39 years, 0 (0%); 40-49 years, 2 (13%); 50-59 years, 2 (13%); 60-69 years, 0 (0%); 70 years and older, 1 (7%). For 2002, meningococcal disease incidence in Philadelphia was 1.0 per 100,000 persons, which is slightly higher than the national disease rate (Figure 4). As in prior years, serogroup Y was most common in Philadelphia (Figure 5).

One case of meningococcal infection occurred in a two-year old who attended daycare. In accord with CDC recommendations, all children in the same daycare classroom were administered antibiotic prophylaxis. Although two infections also occurred in children attending Philadelphia elementary schools, prophylaxis was not indicated

Figure 4. Meningococcal Infections, United States and Philadelphia, 1990-2002 Rates of Infection

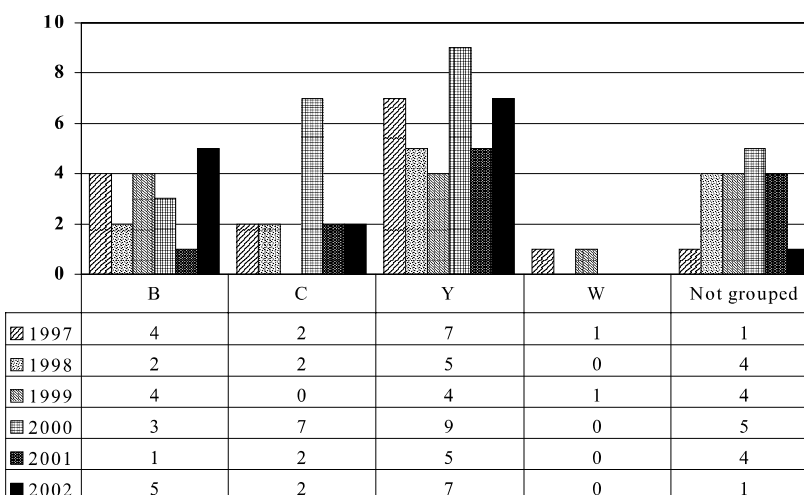


for classmates. The risk of disease transmission in a standard classroom setting is no greater than in the general population. There was also a single case of meningococcal disease in a Philadelphia college student in 2002. The case occurred in a graduate student who had no history of receiving meningococcal vaccine. Infection was due to serogroup B.

Meningococcal vaccine provides protection against serogroups A, C, Y, and W-135. It does not protect against infection with serogroup B, which accounts

for at least 25% of cases in the US. In 2002, the CDC revised recommendations for use of this vaccine by adding laboratory workers who are routinely exposed to the *Neisseria meningitidis* to the eligibility list. In addition, the CDC continued to recommend that practitioners providing medical care to freshmen college students, particularly those planning to live in dormitories, discuss meningococcal disease and the potential benefits of vaccine with students and their parents. The General Assembly of the Commonwealth of Pennsylvania expanded these recommendations in 2002 by passing Senate Bill No. 955 P.N. 2102, the "College and University Student Vaccination Act". This Act requires Pennsylvania college students residing in dormitories to receive one-time meningococcal immunization unless they are exempted by signing a written waiver after receipt of appropriate written information about the disease and effectiveness of vaccine. The Act does not require institutions of higher learning to provide or pay for the meningococcal vaccine.

Figure 5. Meningococcal Disease, Philadelphia 1997-2002
Reported Serogroups



Haemophilus influenzae

Currently, all serotypes of *H. influenzae* recovered from a normally sterile body site are considered notifiable in Philadelphia. The purpose of conducting surveillance on all serotypes is to promote submission of isolates for serotype analysis, to enhance identification of vaccine-preventable *H. influenzae* type B infections, and to characterize the epidemiology on non-type B infections. Nine cases of invasive *H. influenzae* infection were reported in 2002. Typical of *H. influenzae*, most cases occurred in the age-extreme groups. Two cases occurred in infants less than 2 months of age, and three cases occurred in adults over the age of 75 years. The remaining four cases were aged: 5, 36, 46, and 54 years. There were five cases with primary bacteremia, three cases with meningitis, and one case with bacteremic pneumonia. The sole fatality occurred in an elderly person with meningitis. DDC collected all isolates for serotype analysis in the Philadelphia Public Health Laboratory. Serotype analysis of the pathogens was as follows: type E, 2 cases; type F, 1 case; type B, 1 case; and nontypeable, 5 cases. The sole occurrence of type B infection occurred in an 89-year-old person who had no known contact with young children.

Listeria

In 2002, 19 laboratory-confirmed cases of listeriosis were identified, which is a substantial increase over previous years. The increase was caused by a large outbreak of infections associated with consumption of deli turkey products. Nine of the 19 Philadelphia *Listeria* cases could be associated with the outbreak based on indistinguishable pulsed field gel electrophoresis (PFGE) isolate patterns. The remaining ten cases were sporadic. Slightly over half of the patients were male (53%). Four of 19 patients had meningitis, while the remainder had bacterial sepsis. Most listeriosis patients were aged 65 years or older (10), 8 were between 5 years and 64 years, and one was under 5 years old. Eight listeriosis patients (42%) died. Sixteen of the 17 cases for which clinical information was available had predisposing risk factors for acquisition of infection, including cancer, HIV infection, steroid therapy, end-stage renal disease, pregnancy, or miscellaneous immune suppressing conditions.

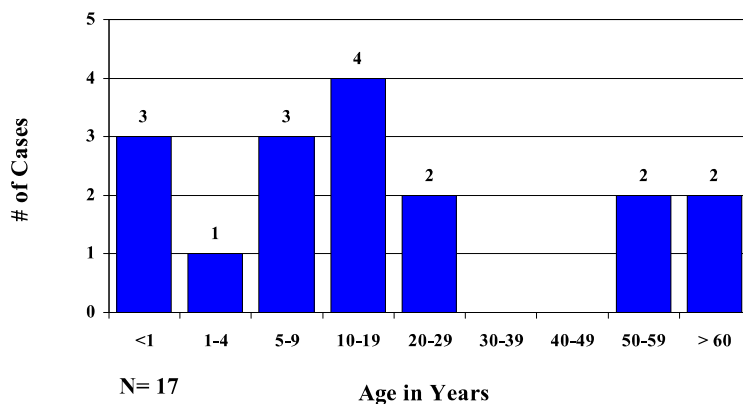
The *Listeria* outbreak associated with deli turkey was first recognized in Philadelphia, when six cases were reported during the last two weeks of August 2002. The outbreak, which lasted from July to October, was not limited to Philadelphia, but involved patients in nine states – primarily in the Northeast US. Overall, 54 patients became infected with the outbreak strain. Eight patients infected with the outbreak strain died and 3 pregnant women had septic abortions. In Philadelphia, no abortions were attributed to the outbreak, but three Philadelphia patients with outbreak-related infections died. The CDC-lead investigation included an epidemiologic (case-control) study, product traceback to turkey processing plants, and environmental plant investigations lead by the USDA. Findings from the CDC investigation of this outbreak can be found in MMWR Vol 51, No 49, 950 (Oct 25, 2002).

GASTROINTESTINAL INFECTIONS

***E. coli* O157:H7**

Seventeen cases of *E. coli* O157:H7 infection were identified in 2002, a substantial decrease compared to 2001 when a large foodborne-outbreak had occurred. Approximately 60% of cases were male (10/17) and the age distribution is shown in Figure 6. Symptoms

Figure 6. *E. coli* O157:H7 Infection, Philadelphia 2002
Age Distribution of Cases

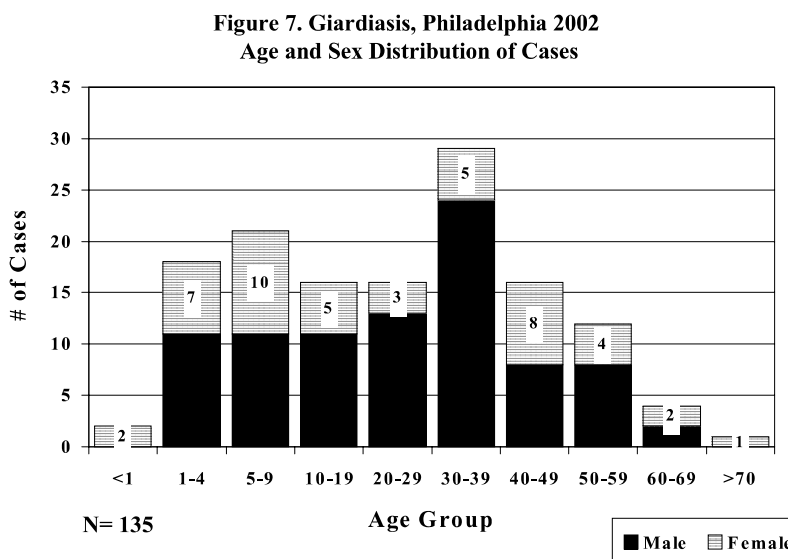


reported by cases were as follows: diarrhea 94%, abdominal cramps 47%, fever 35%, and bloody diarrhea 41%. Although there were no deaths or serious complications of infection (e.g., hemolytic-uremic syndrome), four persons were hospitalized due to the severity of symptoms. All cases of *E. coli* O157:H7 infection in 2002, appeared to be sporadic. No cases were linked to a laboratory-confirmed contaminated food product, or were associated

with secondary transmission.

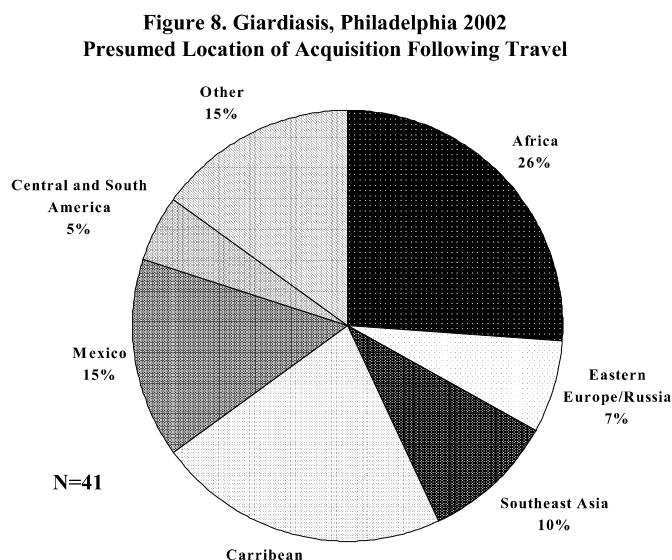
Giardiasis

One hundred and thirty-five cases of laboratory-confirmed giardiasis were reported in Philadelphia residents in 2002. The age distribution of cases is shown in Figure 7. As in other recent years, a larger percentage of cases occurred in men (65%). More than 75% occurred in persons less than 40 years of age. Symptoms reported by the cases, included diarrhea 63%, abdominal pain 35%, nausea 38%, vomiting 20%, and fever 25%. Approximately 12% of cases were hospitalized due to the severity of illness. No deaths were associated with giardiasis in 2002. Travel to a foreign country in the month prior to illness onset was reported by 42 of 135 cases (31%). Most common geographic regions for presumed disease acquisition are shown in Figure 8. Other risk factors (non-exclusive) included recreational water exposure 30 (22%) and attendance at a childcare center 5 (4%). As in previous years, more than half of the cases of giardiasis in Philadelphia had no identifiable predisposing condition or exposure.



Cryptosporidiosis

In 2002, fifteen cases of cryptosporidiosis were laboratory-confirmed in Philadelphia residents. Thirteen (87%) of the cases occurred in men. Although seven cases required hospitalization, there were no fatalities. Age distribution for the 15 cases was: ≤ 9 yrs, 1 (7%); 10-19 yrs, 0 (0%); 20-29 yrs, 2 (13%); 30-39 yrs, 9 (60%); 40-49 yrs, 1 (7%); 50-59, 1 (7%); and 60+, 1 (7%). Eight of the 15 cases reported at least one risk factor for acquisition of infection (non-exclusive), including immunocompromise (6), foreign travel (2), and male homosexual contact (1). There was no seasonal trend in occurrence of cryptosporidiosis cases and no common source outbreaks were identified.

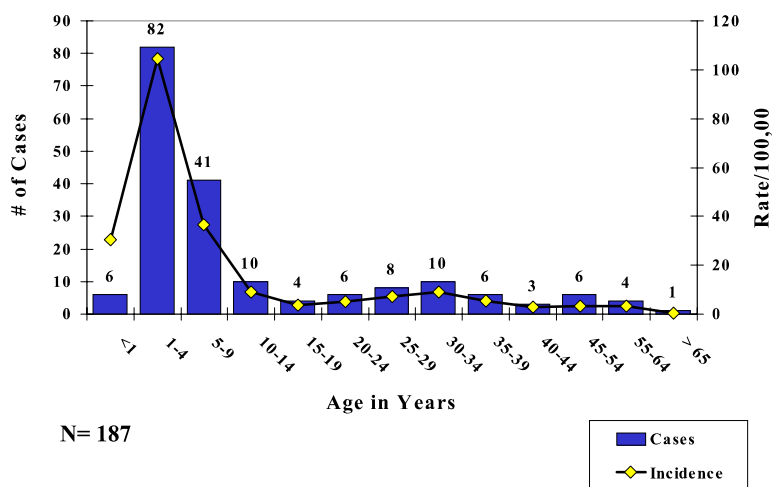


Shigella

One hundred ninety-one reported cases of shigellosis met the CDC case definition in 2002. Of these, 161 cases were culture confirmed.

Thirty cases did not have a confirmatory stool culture but were epidemiologically linked to a culture-confirmed shigellosis case. *S. sonnei* was the most common serotype (74 cases, 46%). In addition there were five *S. flexneri* (3%), and 82 (51%) with missing serotyping results. The majority of shigella cases were among children aged 1 to 4 years (Figure 9). Nineteen shigellosis cases were associated with three outbreaks, the largest of which included 13 *S. sonnei* cases associated with a single daycare facility.

Figure 9. Shigellosis, Philadelphia 2002
Reported Cases and Incidence By Age Group



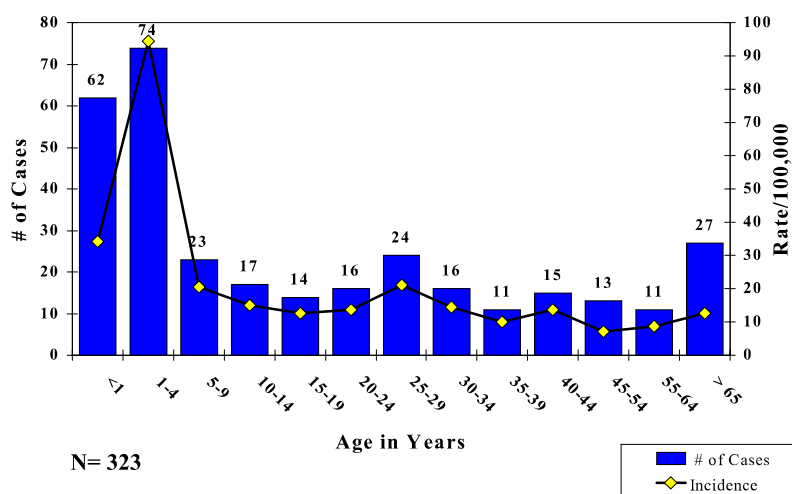
Campylobacter

Ninety-seven cases of *Campylobacter* were reported among Philadelphia residents in 2002. Serotype data was confirmed for 37 reported cases, all of which were identified as *C. jejuni*. Common reported risk factors during the incubation period for disease include: animal contact (34%) and travel (10%). No case clusters were identified. Symptoms reported by the cases included diarrhea (88%), abdominal pain (63%), nausea (22%), vomiting (26%) and fever (60%). Sixteen cases required hospitalization.

Salmonella

Three hundred twenty-four reports met the CDC case definition for salmonellosis in

Figure 10. Salmonellosis, Philadelphia 2002
Reported Cases and Incidence By Age Group



2002. Of these, 306 were culture confirmed, whereas, 18 lacked stool cultures but were epidemiologically linked to a laboratory-confirmed case. Incidence was highest among children aged four years and under (Figure 10). Children 4 years and younger comprised 42% of total salmonella cases in 2002. Disease incidence was slightly higher in women than in men, 57% vs. 43%, respectively. There was one known salmonella-associated

fatality during 2002, which occurred in an elderly man.

Of the 263 cases with serotype information, the majority were *S. enteritidis* or *S. typhimurium*, although 41 other serotypes were also identified (Table 1). More than 80% of cases had no specific identifiable risk factor for acquisition of salmonellosis. Risk factors that were reported to have occurred during the incubation period for disease included close contact with a salmonellosis case (N=18), daycare attendance (n=14), ingestion of raw meat (9), ingestion of raw eggs (5), foreign travel (3), and reptile contact (3).

There were two outbreaks caused by *Salmonella* during 2002. The first, caused by *S. enteritidis*, was associated with eating lasagna in a South Philadelphia restaurant. The second, caused by *S. braenderup*, was associated with deli sandwiches made at various different sites of a chain of convenience stores. The pathogen was ultimately recovered from dried herbs that were sprinkled on the sandwiches. Both outbreaks were terminated by correction of food preparation problems.

Table 1. Salmonella Serotypes
Philadelphia, 2002

Serotype	#Isolates (N=263)	Percent
<i>S. enteritidis</i>	105	39.9%
<i>S. typhimurium</i>	57	21.7%
<i>S. heidelberg</i>	19	7.2%
<i>S. newport</i>	13	4.9%
<i>S. montevideo</i>	6	2.3%
<i>S. saint-paul</i>	5	1.9%
<i>S. braenderup</i>	5	1.9%
<i>S. oranienburg</i>	4	1.6%
<i>S. poona</i>	4	1.6%
<i>S. thompson</i>	3	1.1%
<i>S. hadar</i>	3	1.1%
<i>S. infantis</i>	3	1.1%
Others	36	13.6%

Typhoid

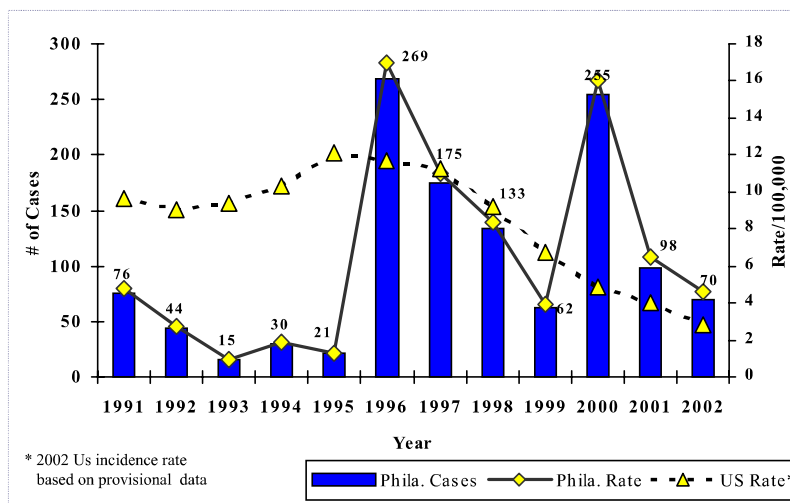
One case of typhoid fever was reported among Philadelphia residents in 2002. The case involved a 21 year-old college student who acquired *S. typhi* during summer travel in India. The student did not receive typhoid immunization prior to travel. Symptoms developed after return to the US, but were promptly recognized as being consistent with typhoid. The student had a full recovery following treatment with ciprofloxacin.

HEPATITIS INFECTIONS

Hepatitis A

One hundred thirty-eight suspected cases of hepatitis A were reported to the Division of Disease Control in 2002 (Figure 11). Seventy met the Centers for Disease Control and Prevention (CDC) case definition for acute viral hepatitis A: 1) discrete onset of symptoms, 2) jaundice or elevated serum aminotransferase (LFT) levels, and 3) laboratory evidence of Immunoglobulin M (IgM) antibody to hepatitis A virus (anti-HAV) or an epidemiologic link to a lab-confirmed case. Temporally, cases were distributed equally throughout the year. Sixty-one confirmed cases (91%) reportedly had jaundice, 16 (23.9%) had known elevated serum aminotransferase (LFT) levels, and 12 (18%) had both. Of note, during case investigation, if a history of jaundice is obtained during case interview, an effort to locate elevated LFTs is not made. All confirmed cases had a positive anti-HAV IgM.

Figure 11. Hepatitis A, Philadelphia 1991-2002
Cases and Rates



Seven cases reported epidemiological links to a confirmed or suspected hepatitis A case: 2 (3%) via household contact and 5 (7.5%) via sexual contact. Ten (15%) cases were hospitalized and no deaths were reported.

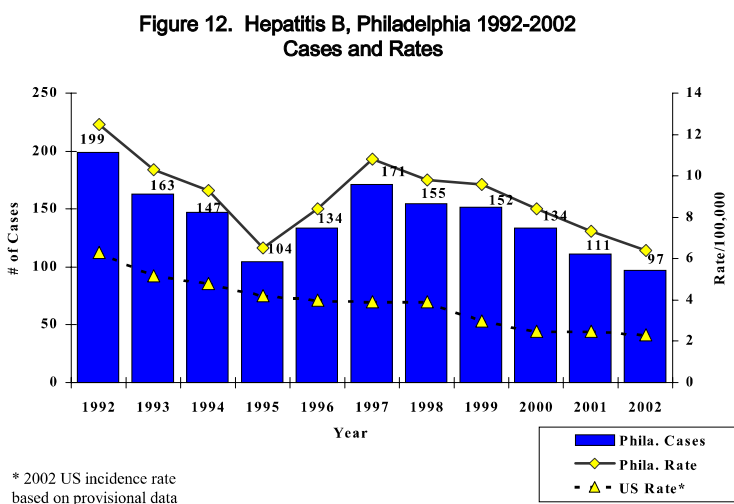
Cases ranged in age from 5-75 years (mean 34.4, median 33), were predominantly male (n=59, 88%; female n=8, 12%), white (white 54%, Asian 3%, black 14.9%, other 4.5%, unknown 24%), and of nonhispanic ethnicity (Hispanic n=7, 10.4%). Cases of Hispanic ethnicity were predominantly male (86%) and younger (median age 18, range 5-33). Zip codes 19146 and 19147 (6 cases each) had the largest number of cases, followed by 19130 (5 cases). Thirty seven percent of cases lived in health districts 1 and 10.

Examination of risk factors for cases revealed that 9 (13.4%) had eaten raw shellfish (5 reported consumption of clams), 27 (40.3%) ate at fast food and 23 (34.3%) at fine dining restaurants, 10 (15%) had traveled outside of the U.S. within the incubation period of their illness, none of the cases reported having acupuncture, getting tattoos, attending daycare or being a household contact of a child in daycare. When asked about sexual preference during the year prior to interview, 34.3% (n=23) reported only heterosexual contacts, 20 cases (30%) were men who have sex with men (MSM), 2 (3%) reported bisexual contact, and the sexual preference for 22 (32.8%) cases is unknown. Of the heterosexual cases, 2 persons reported having contact (1 sexual and 1 household) with a known hepatitis A case. Of the MSM population (n=20), 4 (20%) reported sexual contact with a known hepatitis A case within 6 weeks prior to illness. Most cases reported being in a monogamous relationship for the six weeks prior to infection onset (n=26, 39%) and 11 (16.4%) persons reported having two or more

sexual partners during that timeframe. Among the 11 persons reporting 2 or more sexual partners, 3 (27.3%) reported only heterosexual contacts and 8 (72.7%) reported only MSM contacts. In the 3 weeks before illness onset, 14 (21%) persons reported using street drugs; heroin was the most commonly used drug reported (9/14 or 64% heroin, 1 cocaine).

Hepatitis B

Ninety-seven (8.3%) of the 1,170 reports of patients with a positive hepatitis B serology met the Centers for Disease Control and Prevention case definition for acute hepatitis B infection: (a) discrete onset of symptoms, b) jaundice or elevated serum aminotransferase levels, and c) IgM antibody to hepatitis B core or positive hepatitis B surface antigen).



overall acute hepatitis B case rate for 2002 was 6.4 per 100,000 persons compared with 7.3 per 100,000 persons in 2001 (rates based on 2000 Philadelphia census data) (Figure 12). The provisional 2002 acute hepatitis B rate in the United States is 2.3 per 100,000 persons. The median age for confirmed cases was 36.4 years (range: 20.8 to 82.8 years). Over half of the cases were black (58.8%), 27.8% were white, 1% Asian, with the remaining 12% of other or unknown race. Ten percent of cases identified as Hispanic. Thirty-

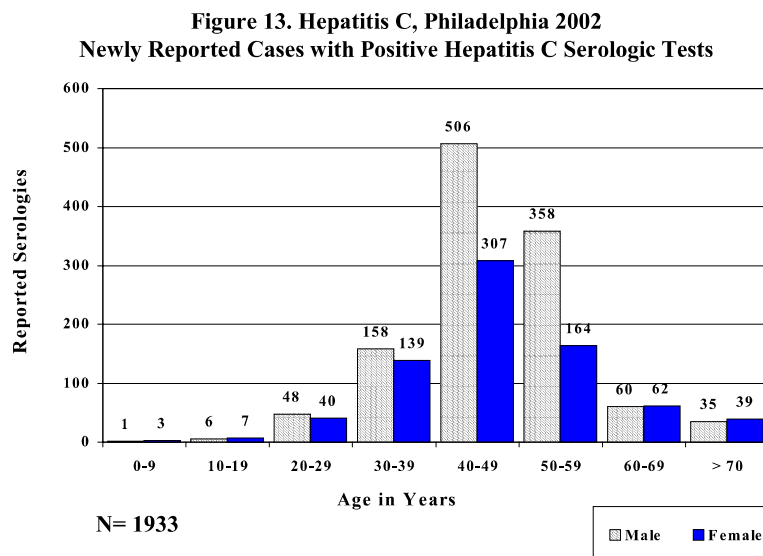
five (36.1%) of the cases were hospitalized, with one hepatitis B-associated fatality. One case reported a history of receiving hepatitis B vaccine within the previous two years.

Possible risk exposures during the six months prior to illness included drug use (9.3%), tattoo (6.2%), dental visit (2.1%) and greater than two sexual partners (20.6%). Eight cases were contacts of known cases, including 3 household contacts, 4 sexual contacts, and one with unknown contact status. Of the 49 (80%) male cases, 33 (67.4%) reported exclusively heterosexual contact, 3 (6.1%) reported bisexual contact, 3 (6.1%) homosexual contact, and 10 (20.4%) were unknown. No cases reported acupuncture, surgery, needlestick injury, dialysis, or transfusion in the six months prior to diagnosis. Risk factor information was missing or thought to be inaccurate in many of the cases of acute hepatitis B.

Hepatitis C

Clinical laboratories are required to report all patients with serologic evidence of hepatitis C infection (HCV), regardless of whether infection is acute or chronic. In addition, physicians and other health care providers are required to report cases of acute hepatitis C. The Division of Disease Control has established a registry of persons with positive HCV laboratory results in order to facilitate counseling, education, and follow-up of infected persons. The HCV registry consists of Philadelphia residents reported since January 1998 who have serologic evidence of HCV infection, including any positive test by EIA, RIBA, and/or nucleic acid amplification. Reports may not include confirmatory test results and therefore DDC is unable to assure that all

reported morbidity indicates true infection. In 2002, DDC added 1,998 new patients to the hepatitis C registry. Of these, only four could be identified as acute HCV infection based on accompanying clinical information. The age and sex distribution of new cases first reported in 2002 with positive HCV serologies is shown in Figure 13.

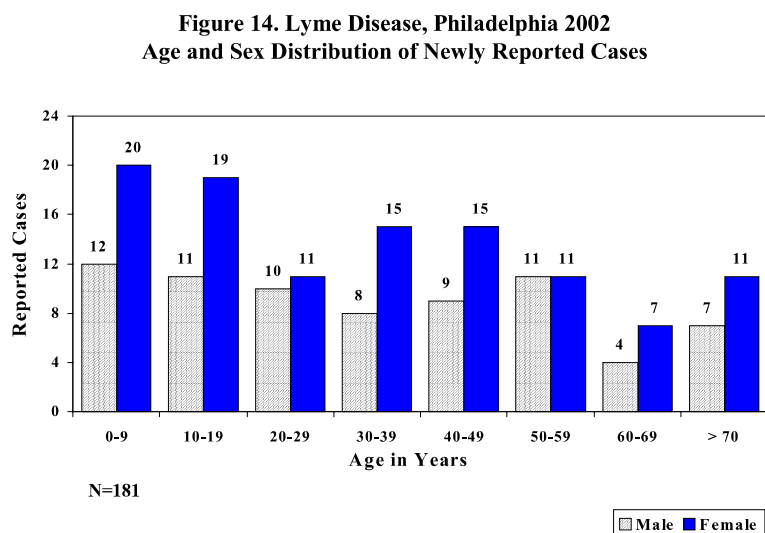


VECTOR BORNE DISEASES

Lyme Disease

In 2002, 182 persons were confirmed as new cases of Lyme Disease, an increase of 80% compared to the 99 cases recognized in 2001. This is the highest number of reported cases since 1999. Clinical laboratories reported positive serologic studies (enzyme immunoassay, Western blot, immunoblot, etc.) for 605 unique patients. Of these patients, 423 (70%) could not be confirmed as Lyme cases, as defined by CDC criteria, for the following reasons: no clinical information obtained from the health care provider 255 (60%), clinical surveillance criteria not fulfilled 103 (24%), or case out of Philadelphia jurisdiction 67 (16%). For surveillance purposes, CDC defined confirmation of Lyme Disease requires that a case have either (a) physician-diagnosed erythema migrans or (b) at least one late manifestation of disease with positive laboratory criteria for disease. Medical providers reported the following

clinical findings (non-unique) in the 182 Philadelphia cases: erythema migrans, 57%; arthritis, 53%; facial palsy, 6%; radiculoneuropathy, 6%; and carditis, 1%. Age and sex distribution of cases is shown in Figure 14. According to the reporting health care providers, cases were most likely exposed in the following geographic areas: Philadelphia County, 66%; other counties in Pennsylvania, 11%; out-of-state, 4%, and unknown or unreported, 19%.



West Nile Virus

In 2002, WNV was responsible for the largest arboviral outbreak ever recorded in the United States. More than 4000 human WNV infections were reported in the United States during the 2002 season. The vast majority of these infections were acquired by mosquito vector transmission; however, a handful of WNV infections were documented to have been acquired from transfusion of WNV-infected blood or blood products or following receipt of an organ from a recently infected donor. In addition, in the United States, there was one documented case of neonatal WNV infection acquired from breast milk and one documented case of *in utero* WNV transmission.

In Philadelphia, six people were confirmed as having infection with WNV. This compares to three during the previous year. Investigation of all Philadelphia WNV cases supported mosquito vector transmission as the mode of infection. Two deaths were attributed to WNV in 2002. Peak activity occurred between late August and early October. Because colder temperatures arrived in Pennsylvania early, WNV season officially ended on November 1st, 2002.

During 2002, 112 cases of aseptic meningitis, 5 cases of encephalitis and 2 cases of Guillian-Barre were reported to the Division of Disease Control. Each case was investigated to determine if WNV testing was appropriate and was ordered. Specimens from 95 patients (64 CSF and 31 sera without corresponding CSF) were tested for WNV. By contrast, 45 clinical specimens were tested in 2001, and 12 in 2000. Thus, surveillance efforts, including physician and laboratory reporting of suspect cases, continues to improve yearly.

In conjunction with other City and State Agencies, the Division of Environmental Health Services managed a very aggressive mosquito control program. All of the city's approximately 70,000 storm catch basins were treated with larvacide during the season. Nightly mosquito trapping and testing was done at approximately twenty locations throughout the city. When surveillance results revealed a significant increase in the mosquito population and WNV test results were positive, selective application of adulticide was done under the supervision of the Pennsylvania State Department of Environmental Protection (DEP). There were no adverse human effects of adulticide application reported via an established reporting protocol with the Poison Control Center. During the 2002 mosquito season, 33 mosquito samples tested positive for WNV. The Division of Environmental Health Services also responded to reports of dead birds. During the 2002 WNV season, there were 74 birds (primarily American Crows) that tested positive for WNV.

The DDC is available to coordinate and assist providers in ordering the appropriate diagnostic tests to evaluate persons suspected of having WNV infection. The following tests are available free of charge. Testing can be arranged by contacting DDC.

**Table 2. Demographics of Human WNV Cases
Philadelphia 2002**

<i>Event Date</i>	<i>Presentation</i>	<i>Gender</i>	<i>Age</i>	<i>Diagnostic Test</i>	<i>Outcome</i>
August 26	encephalitis	F	73	CSF IgM	Expired
Sept. 8	aseptic meningitis*	F	66	CSF & Serum IgM	Recovered
Sept. 23	encephalitis	F	72	CSF & Serum IgM	Recovered
Sept. 23	encephalitis	F	59	CSF & Serum IgM	Recovered
Sept. 26	encephalitis	F	88	Serum IgM	Expired
Oct. 4	encephalitis	M	79	CSF & Serum IgM	Recovered

* West Nile Virus, aseptic meningitis

Table 3. West Nile Virus Tests

Serum: WNV Specific IgM and IgG Antibodies by ELISA
(on paired acute and convalescent samples)

CSF: IgM antibody
Viral Culture
RT-PCR

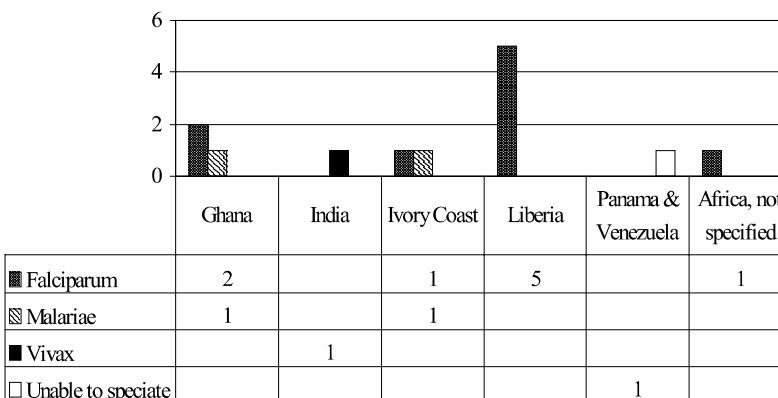
Tissue: Viral Isolation

Malaria

In 2002, sixteen Philadelphians were diagnosed with malaria based on microscopic examination of a peripheral blood smear. Etiology by species was *P. falciparum* (11), *P. malariae* (2), *P. vivax* (1), *P. falciparum* plus *P. vivax* (1), and unable to speciate (1). The

median age of cases was 22 years (range 1-54 years), and males were disproportionately affected (14). Four cases were hospitalized for 24 hours or more. All cases were treated successfully for malaria with appropriate agents. Three of the cases were unable to be located for disease investigation. Of the 13 who were investigated, malaria by presumed country of acquisition and species is shown in Figure 15. Only five of the 13 had taken malaria prophylaxis during their foreign travel, accounting for four *P.*

Figure 15. Malaria, Philadelphia 2002
Presumed Location of Acquisition and Species



N=13

falciparum infections and one *P. malariae* infection. Two cases reported a previous history of malarial disease.

OTHER REPORTABLE DISEASES AND CONDITIONS

Legionnaire's Disease

Ten cases met the CDC surveillance definition for Legionnaire's disease in 2002. Because the CDC's case definition for legionellosis requires laboratory confirmation of diagnosis, surveillance data likely under-represents true disease burden. The ten reported cases occurred in adults over the age of 30 years, five of whom were smokers and two of whom had predisposing medical conditions. All presented with a clinical syndrome of community-acquired pneumonia; one case was fatal. Urine *Legionella* antigen testing was used to establish the diagnosis in nine of the ten cases. The tenth (the sole fatality) was confirmed by DFA smear of respiratory tract secretions. There were no nosocomial or institution-related clusters of *Legionella* infection.

Animal Bites

In 2002, PDPH received reports of 1,992 animal bites, a 1.5% increase when compared to reported bites in 2001. 1,833 or 95.4% of the reported bites were inflicted by domestic animals (dogs, cats, hamsters, ferrets, gerbils), with dogs accounting for 71% of all bites reported. An owner of the biting animal was identified for 70% of biting incidents (1,284 events) involving domestic animals. In 412 instances (22.5%), it is known that the victims were bitten by their own pets. Of bites inflicted by animals other than dogs or cats, the most common were rat bites (17), followed by mouse (12), squirrel (8), hamster (7), rabbit (4), raccoon (3) and snake (3) bites. Age of the bite victim was available in most of the reported incidents. Young children in Philadelphia suffer disproportionately more bites than older Philadelphia residents. Forty percent of reported animal bite incidents occurred to children less than 15 years of age.

In 2002, the Philadelphia Public Health Laboratory tested 148 suspect animals for rabies. The tested animals included 73 raccoons, 34 cats, 17 dogs, 16 bats, 5 groundhogs, 1 skunk, 1 wallaby, and 1 fox. Four raccoons and one bat tested positive for rabies antigen by direct fluorescent antibody staining of brain tissue. In the 14-year period, 1989 through 2002, DDC has confirmed 43 rabid animals in Philadelphia, 24 raccoons, 6 cats, 5 bats, 4 skunks, 2 woodchucks and 2 foxes. The last rabid dog in Philadelphia occurred more than 50 years ago (although neighboring counties periodically have identified rabid dogs).

Nationally, most human cases of rabies are caused by the bat variant strain of virus. In most such cases, the victims and their families do not recall an exposure to bats. This is, in part, because victims of bat bites are frequently not aware of the bite or are unconcerned about the exposure. Therefore, rabies prophylaxis is indicated for any person exposed to a bat who cannot state with certainty that he/she was not bitten by the bat, and the bat is not available for testing. For example, a person awakening at night to find a bat in the bedroom, even in the absence of a visible bite wound, should receive rabies prophylaxis, unless the bat can be captured and tested. Also, if a bat is found in the bedroom of an unattended child and the bat escapes, the child should receive rabies prophylaxis.

To arrange for Rabies Fluorescent Antibody Testing of a captured bat, or other animal involved in a bite, contact the Division of Disease Control, 215-685-6740 (215-686-5665 after normal business hours, on weekends and holidays).

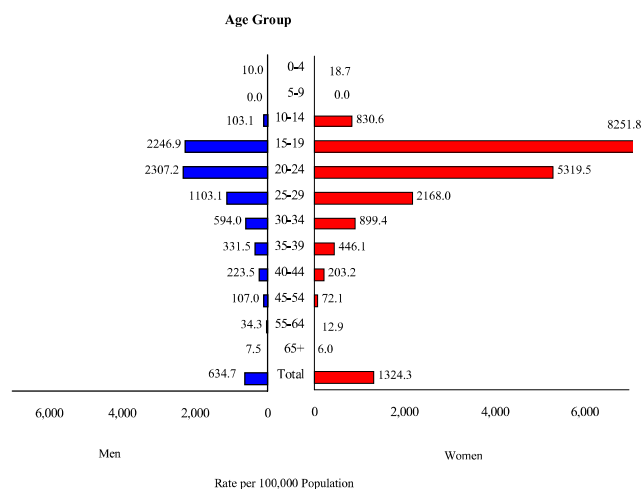
SEXUALLY TRANSMITTED DISEASES

Chlamydia trachomatis

Chlamydia is the most frequently reported infectious disease in the United States. Although more than 835,000 cases were reported in the US in 2002, an estimated 3 million cases occur annually. In Philadelphia, 15,234 cases of *Chlamydia trachomatis* were reported, representing an increase of 12.1% when compared to calendar year (CY) 2001. Annual reported *Chlamydia* morbidity has nearly doubled (+7,155 cases) since 8,079 cases were reported in 1995. Most probably, the increase is primarily attributable to increased screening activities and changes in laboratory methodologies.

Rates of reported *Chlamydia* infections in women are consistently much higher than in men (Figure 16). In women 15-19 years old the rate was 8,251.8/100,000 compared to men at 2,246.9. In men the highest rate was in 20-24 year old at 2,307. In CY 2002, there were a disproportionate number of females reported resulting in a F/M ratio of 2.4:1; however, this is down from a M/F ratio of 3.9:1 in 2001. Overall, the number of male cases of *Chlamydia* identified in 2002 increased by 60% compared to 2001, due primarily to increased screening among asymptomatic males.

Figure 16. Rate of Chlamydial Infections per 100,000 Population by Age and Gender: Philadelphia, 2002.



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. Much of the increase in testing and reporting in men is due to an enhanced effort by the PDPH to screen asymptomatic adolescent males. Urine based screening of young men was initiated at the end of 1999 primarily in the Youth Study Center of the Philadelphia Corrections System. These screening efforts found a *Chlamydia* infection rate of 5.5% among asymptomatic males in 2002. Screening efforts in males were expanded during 2001 and 2002 to include District Health Care Center clinics, Recreation Centers and Health Resource Centers in selected high schools (see below).

Gonorrhea

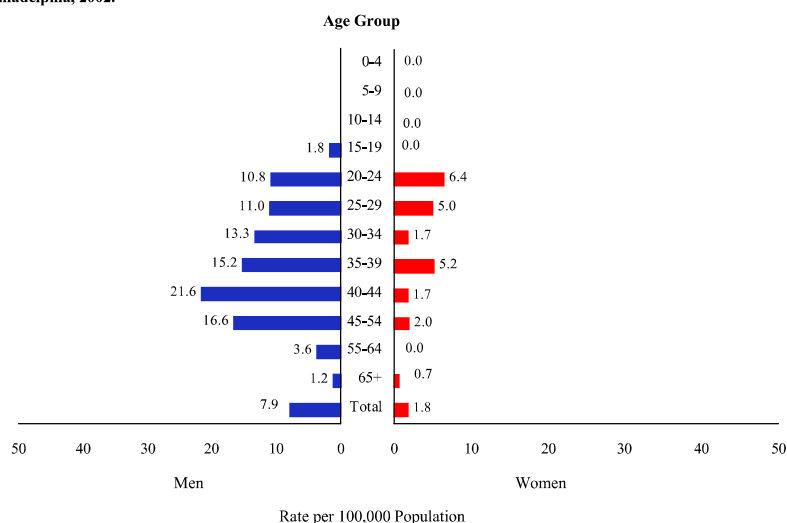
In 2002, there were 7,277 cases of Gonorrhea reported in Philadelphia. This is a 9.7% decrease [-784] from 2001. This is the second annual decrease in reported cases of gonorrhea. Teenagers and young adults remain disproportionately affected with 57.8% (4,207/7277) of the cases among 15-24 year-olds.

While there was little PDPH-supported routine screening of asymptomatic men for gonorrhea in 2002 (1,991 tests; 25+) when compared to *Chlamydia* (6,647; 345+), 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 2002, the PDPH provided/ supported 83,375 screening tests for gonorrhea resulting in the identification of 2,118 (2.5%) infected women; this accounted for more than 48%(2118/4397) of the total cases of gonorrhea reported in women. As with *Chlamydia*, women with Gonorrhea who are untreated are at risk of developing complications including Pelvic Inflammatory Disease 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 favorable impact on this disease.

Early Syphilis

Reported primary and secondary (P&S) syphilis morbidity in 2002 decreased 7.8%, from 77 to 71 cases, when compared to 2001. Since 1990, the peak year of our most recent syphilis epidemic, there has been a 97% 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 early latent

Figure 17. Rate of Primary & Secondary Syphilis per 100,000 Population by Age and Gender: Philadelphia, 2002.



syphilis cases have also declined 94.3% (-3,686 cases) since the peak of the epidemic in 1990 when 3,907 cases were reported, to the current annual level of 221 cases.

Reported rates of P&S and early latent syphilis were higher among men than women in 2002 (Figure 17). The cause may be multifactorial, including an increase in the percent of male cases attributable to men who have sex with men, from 0.9% in 1995 to 57.1% (32/56) in 2002, and an increased likelihood that a male will notice a lesion on his genitalia and be diagnosed. The rates of syphilis remain higher among Blacks than Whites and Hispanics, although this racial disparity is narrowing.

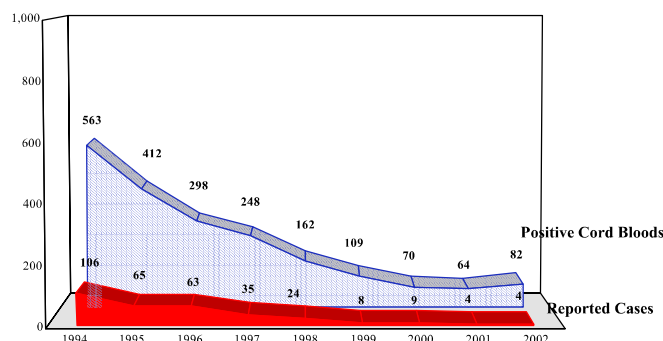
With rates of infectious syphilis being at an all time low in the United States, the Centers for Disease Control and Prevention has launched a National Plan to Eliminate Syphilis by 2005. The Philadelphia STD Control Program, in conjunction with this effort, initiated a weekly syphilis outbreak surveillance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

Congenital Syphilis

In 2002, 4 cases of syphilis in Philadelphia newborns met the current Centers for Disease Control and Prevention surveillance definition for congenital syphilis. The same number of cases were reported in 2001. This represents a 98.7% (-297 cases) decrease when compared to 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 18). In 2002, this number increased from 64 in 2001 to 82 (28.1%) in 2002. Since 1992, when 864 were reported, we have seen an overall 90.5% (-782 reports) decrease. The occurrence of congenital syphilis is directly linked to the incidence of early syphilis occurring in the city. Adequate prenatal care, with routine screening and treatment of syphilis in pregnant women clearly plays a major role in preventing congenital syphilis.

Figure 18. Reported Cases of Congenital Syphilis and Number of Positive Cord Blood Tests: Philadelphia, 1994-2002



VACCINE PREVENTABLE DISEASES

Measles

Eleven suspected measles cases were reported to DDC in 2002; all 11 were ruled out based on a negative serologic test (IgM) and/or a clinical case presentation that was incompatible with measles. In six of the 11 an alternate diagnosis was established, including scarletina, ringworm, viral exanthem, and pityriasis rosea. Five persons were reported for positive measles serologic tests that were done solely for screening of immunity. Nationally, there were a total of 44 confirmed cases of measles in 2002, 26 indigenously-acquired and 18 imported.

Mumps

Nine suspected mumps cases were reported to DDC in 2002. Of these, only one was confirmed according to CDC case definitions. This case occurred in a 81-year-old unimmunized woman living in a nursing home who presented with bilateral parotid swelling. Her mumps IgM titer at the time of presentation was positive. Since other viral illnesses, such as coxsackie virus and parainfluenza, may also present with parotitis, a diagnosis of mumps can only be confirmed by viral culture of urine or nasopharyngeal aspirate, or by positive serologic tests (IgM).

Rubella

A rubella epidemic in the United States in 1964 resulted in 12.5 million cases of rubella infection; 2,000 cases of encephalitis; 11,250 abortions (surgical/spontaneous) and 2,100 neonatal deaths. During the epidemic, about 20,000 infants were born with congenital rubella syndrome (a pattern of fetal abnormalities that includes cataracts, hearing impairment, cardiac disease and mental retardation). Since that era, rubella has been virtually eliminated in the US by rubella immunization. In 2002, there were 18 acute rubella cases reported in the US, and one infant born with congenital rubella syndrome. No cases occurred in Philadelphia.

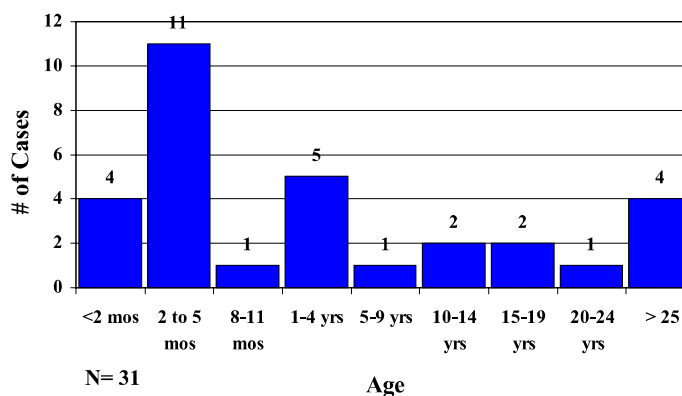
Pertussis

In 2002, 31 reported cases of pertussis met the CDC surveillance definition. Of these, 28 were considered confirmed because the cases had positive laboratory tests (PCR = 17, culture = 1) or because the cases were epidemiologically linked to a laboratory-confirmed case (N = 10). Three persons were considered probable cases. These met the CDC clinical case definition, but no laboratory testing or epidemiologic link could be established.

Sixteen (52%) of the cases were less than one year of age, five (16%) were between 1 and 4 years of age, one (3%) was between 5 and 9 years of age, and 5 (16%) cases ranged from 10 to 24 years. The remaining 4 cases were 25 years and older. Of the children less than one year of age, five (31.3%) had 1 dose, one (6.3%) had 2 doses and one (6.3%) had 3 doses of pertussis-containing vaccine. The remaining 9 (56.3%) infants had no documentation of receiving vaccine. The child in the 5 to 9 year age group had received 5 doses of pertussis-containing vaccine. Age distribution of confirmed and probable cases of pertussis is shown in Figure 19.

Nineteen (61%) of the cases were male and twelve were (39%) female. Fourteen (45%) of the cases required hospitalization, ranging from two to 25 days (mean = 8.3 days). There were no deaths. Symptoms consisted of cough in 100% of cases, with duration of cough ranging from 4 to 66 days (median = 29 days). Other reported symptoms included whoop (61%), apnea (39%), post-tussive vomiting (55%), and paroxysms (52%). Ninety percent (28/31) were prescribed antibiotics. Of these, 87% received erythromycin or another macrolide. The 2002 annual pertussis incidence per 100,000 persons for Philadelphia was 2.2 and for the United States was 2.7.

Figure 19. Pertussis, Philadelphia 2002
Age Distribution of Cases



SPECIAL PROJECTS**STD SCREENING IN PHILADELPHIA PUBLIC HIGH SCHOOLS**

Reported morbidity for *Chlamydia* in Philadelphia continues to increase, especially among adolescents. The rate of *Chlamydia* infection in women age 15-19 in 2002 was 8,251.8 per 100,000 population. Reported rates in young men are much lower (2,246.9) presumably because of a lack of routine screening for this frequently asymptomatic disease. Continued advances in testing technology available for *Chlamydia* and Gonorrhea make large scale screening of adolescents using non-invasive urine-based testing feasible. In addition, data from the CDC-funded Youth Risk Behavior Survey of High School students conducted in 2001 indicated that 62% of Philadelphia's students had been sexually active. Based on these observations, the Philadelphia DPH initiated a pilot program to offer confidential *Chlamydia* testing in Philadelphia Public High Schools.

Urine based screening of adolescents in two Philadelphia High Schools began on October 1, 2001 and November 1, 2001, respectively. These schools were selected because they supported Health Resource Centers (HRC) – a room in each school staffed by a counselor who provides family planning and disease prevention counseling and referral services, plus condoms. Staff in the HRC's was augmented and service expanded to include urine-based screening. In addition, classroom presentations were used to stimulate student participation and educate them about the risks of unprotected sex. Through the end of the 2001 – 2002 school year (June, 2002), 1,219 students were tested. Of the 683 girls tested, 16.1% (110/683) were found to be infected with *Chlamydia* (87), gonorrhea (10) or both STD's (13); of the 536 boys tested, 5.2% (28/536) were infected with *Chlamydia* (26) or both *Chlamydia* and gonorrhea (2). Treatment was confirmed for all who tested positive. This program was expanded to three additional schools in the fall of 2002.

Chlamydia case rates in the 15-19 age group clearly demand additional attention. In Philadelphia, the collaborative effort between the School District, the Family Planning Council and the Department of Public Health demonstrated our ability to successfully reach this population. In January 2003 a citywide screening effort including all Public High Schools including those which do not currently have HRC's was initiated.

BIOTERRORISM PREPAREDNESS

In 2002, the Division of Disease Control (DDC) bioterrorism preparedness activities encompassed two major initiatives. The first was the piloting of enhanced surveillance systems to monitor the occurrence of disease syndromes. The second involved planning and response activities within the City and with regional partners.

Enhanced Surveillance. This year, DDC piloted syndromic surveillance systems to augment notifiable disease surveillance and other programs. Our syndromic systems extract information obtained from data sets that health systems already have in place, and attempt to identify syndrome categories based on identification of patient symptoms. In 2002, we began to monitor triage data from several hospital Emergency Departments, located in different areas of the city. The objective is to obtain "real-time" data from sentinel institutions throughout the City, in a fashion that minimizes the work of data collection and transfer to the DDC.

Philadelphia's syndromic surveillance system uses chief complaint data collected from patients during emergency department visits. Data is coded into one of five syndromic

categories as a tool to monitor infectious disease trends (resulting from natural or intentional transmission, as in a bioterrorist event), and analyzed daily. Categories consist of Respiratory, Gastrointestinal, Neurological, Fever, and Rash events, with statistical analysis to determine if the number of events exceeded an expected number, based on previous 60 consecutive days of data. Epidemiological investigation occurs when that threshold is exceeded. In 2003, new and more sophisticated algorithms will be tested to detect early unusual events, syndrome categories will be re-defined based on coding experience, and we will better define algorithms for public health response to identified aberrancies in the occurrence of specific syndromes. In addition, we look forward to adding additional Emergency Departments to this system, so that the data is more representative of the City's population.

Late in 2002, the Division of Disease Control began working with the University of Pittsburgh Medical Center/Center for Biomedical Informatics to conduct surveillance using sales of "over-the-counter" drugs from retail pharmacies in Philadelphia. Having two or more systems is critical; early detection of outbreaks and bioterrorism will likely require the synthesis and integration of multiple different types of evidence. In 2003, we also hope to add 911 Center Dispatch data and school absenteeism to the data sources for syndromic surveillance programs.

Planning Initiatives and Inter-agency Coordination. In 2001, DDC developed a Biological Response Plan for the City of Philadelphia that outlined response activities for an infectious disease epidemic resulting in mass casualties, from either biological terrorism or naturally occurring epidemics. This plan defines a concept of operations and incident management structure for outbreak identification and management, including expanding services necessary for mass patient care and mass distribution of antibiotics or vaccination. This year, planning activities have focused on receipt and distribution of supplies from the National Pharmaceutical Stockpile (now called the Strategic National Stockpile), and for smallpox vaccination and outbreak response, including a plan for mass vaccination of the general public, if warranted. The Centers for Disease Control and Prevention issued several federal plans and guidelines for state and local government responses throughout 2002. DDC has developed and modified its own plans in response to these documents and this work will continue during 2003.

To ensure that the City's response to terrorism is a well coordinated effort with other City public safety agencies, DDC and other PDPH staff meet monthly with representatives from Philadelphia Police and Fire Departments (including Emergency Medical Services (EMS) and Hazmat) and Office of Emergency Management, as well FBI staff located in Philadelphia. In addition to this municipal group, a number of regional task forces and planning committees to respond to terrorism were created both before and after September 11, 2001. While there is considerable overlap with respect to membership and purpose of many of these groups, each brings a slightly different focus and perspective to the challenge of bioterrorism preparedness, and the Philadelphia Department of Public Health participates all of them.

The Pennsylvania Emergency Management Agency (PEMA) has established Regional Counter-terrorism Task Forces throughout the entire state. In late December 2001, the Governor signed legislation that provided legal authority to these task forces, with responsibilities and powers for responding to terrorism at a regional level. The Southeastern PA Counter-terrorism Task Force is chaired by the directors of the Emergency Management Offices in each of the 5 SE PA counties and includes representation from Fire Departments (including Hazmat), EMS, public health, the Delaware Valley Healthcare Council and area hospitals. This group sponsored a major regional bioterrorism tabletop exercise with hospital and county, state and federal government participation in June 2002.

The Division of Disease Control has convened a Southeastern Pennsylvania Regional Bioterrorism Preparedness Working Group that includes representatives from public health

agencies in the 5 counties in southeastern Pennsylvania, counties in southern New Jersey, and state health departments in Pennsylvania, New Jersey and Delaware. This group focuses on epidemiological and public health response issues related to bioterrorism, and also includes representatives from the hospital and emergency management community. In 2002, the group met quarterly, and developed a regional communications protocol that identified capacity standards for public health communications, and consensus guidelines on information sharing that will facilitate the recognition of regional outbreaks and improve inter-agency response coordination. At present, this group also functions as the public health subcommittee for the SE PA Regional Counter-terrorism Task Force.

Immediately following September 11, 2001, the Delaware Valley Healthcare Council convened a Disaster Preparedness Task Force that continues to meet to address the emergency response capacity of hospitals. The United States District Attorney's Office in Philadelphia has convened an Anti-terrorism Task Force that focuses on terrorism prevention and the crisis management function of law enforcement. Finally, the Pennsylvania Department of Health (PA DOH) convenes statewide meetings of public health agency staff and hospitals as part of the state's bioterrorism response program. The PA DOH is working with PEMA and the state's regional task forces to develop regional response plans for terrorism preparedness and the care of mass casualties.

VARICELLA ACTIVE SURVEILLANCE PROJECT

The Philadelphia Department of Public Health's Varicella Active Surveillance Project (VASP) completed its 8th year monitoring the occurrence and epidemiology of varicella in the target area of West Philadelphia during 2002. 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 to conduct other varicella-related studies.

Varicella Surveillance. In 2002, a total of 170 confirmed cases of varicella were reported from the VASP surveillance area of West Philadelphia, similar to year 2001 (174 vs.170) and the lowest number of reported cases since 1995 (1197), the first full year of active varicella surveillance. Primary care facilities/physicians were the greatest source of varicella case reports received by the DDC, accounting for 31.8% of all reported cases during the year. Schools reported 21.2% of the varicella cases, while emergency room departments/hospitals reported 16.5% of the cases. In 2002, the number cases by age group remained dramatically lower than 1995 when varicella vaccine was licensed for use in the United States. Over half of the 2002 cases (54.7%) were aged 1 to 9 years; approximately two thirds of which were breakthrough varicella cases vaccinated more than 42 days before onset of disease. Only the 5 to 9 year old age group experienced a decline in the number of varicella cases from year 2001, which may be reflective of school entry regulations for varicella immunity covering Kindergarten through 2nd grade in the City of Philadelphia (Figure 20).

Six of the confirmed varicella cases for 2002 from West Philadelphia were hospitalized, compared with five hospitalizations in 2001. One of the hospitalizations resulted in death for a 29 year old African American male who was HIV positive and had varicella complicated by dehydration and aggravated Thrombotic Thrombocytopenic Purpura. No other varicella-related deaths in Philadelphia residents were reported to VASP in 2002.

Herpes Zoster Surveillance. Twenty-eight confirmed zoster cases in individuals under 20 years of age from West Philadelphia were reported to VASP in 2002. Private physicians reported the majority of the cases (11 cases, 39.3%). Ages of the zoster cases ranged from 4 months to 19 years with a median age of 11 years. Two of the 2002 zoster cases both aged 12 years were hospitalized for meningitis and rule out meningitis, respectively.

Breakthrough Varicella Study (*infection in person with prior varicella immunization*). In October 2001, VASP and CDC implemented a study to determine the proportion of suspected breakthrough varicella reports that are true varicella infections according to VZV specific laboratory testing. Detailed clinical and epidemiologic data was collected during the investigation of suspected breakthrough cases. Lesion and serologic specimens were collected during healthcare provider visits or by VASP staff when available at the time of rash illness. Attempts were made to obtain convalescent serologic specimens taken 4 weeks after rash onset for those reports with acute serologic specimens obtained.

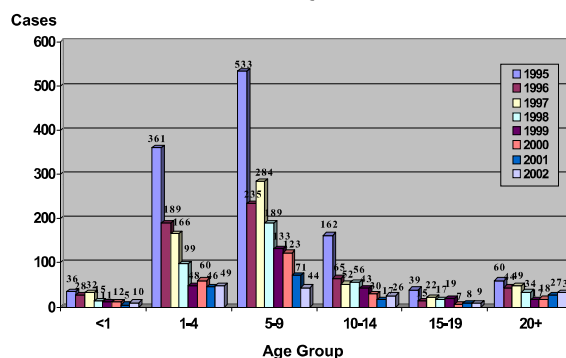
From October 2001 through December 2002, VASP received 120 suspected breakthrough varicella case reports that were investigated with VZV specific laboratory testing performed. The suspected breakthrough cases were 1 to 20 years of age (Median: 5 years). The proportion of males was slightly higher than females (56.7% vs. 43.3%). Slightly over half of the breakthrough reports were African American/Black (55.0%) and 34.2% were White, while 8.3% of the cases were Hispanic. Time from receipt of vaccine to varicella rash onset ranged from 48 to 2676 days or approximately seven and one-third years. Four breakthrough cases received vaccine 4 to 89 days before their first birthday, while the remaining cases were 1 to 16 years of age at time of vaccination.

VZV IgM antibody results were positive or equivocal for 15 of the 90 (16.7%) suspected cases having the test performed. The median time of collection from rash onset was significantly different (p value = 0.003) for those with positive/equivocal IgM results (5 days) as compared to those with negative results (2 days). Of the 102 reports with lesion specimens collected for PCR testing, 27 (22.5%) cases were positive for wildtype VZV, 40 (39.2%) were negative for VZV, and 35 (34.3%) cases specimens were inadequate for PCR testing. The median time of lesion specimen collection from rash onset was 2 days for both suspected cases with positive and non-positive results; however, all specimens that were PCR positive were collected within 9 days of rash onset. An acute to convalescent VZV IgG titer rise of 0.200 or higher was seen in 11 of the 33 (33.3%) reports with specimens collected at both time points and having both tests completed on the same VZV IgG ELISA assay. One of 2 reports with VZV DFA testing performed had a positive result. Overall, 40 of the 120 breakthrough reports (33.3%) were confirmed as true cases with positive PCR, positive/equivocal VZV IgM, acute to convalescent VZV IgG rise of 0.200 or higher, and/or a positive VZV DFA.

Antenatal Varicella Susceptibility Study.

Since December 2001, VASP in collaboration with CDC has been conducting a study to assess varicella susceptibility among women of childbearing age at six prenatal clinics in Philadelphia. A total of 524 women were enrolled in the Antenatal Varicella Susceptibility Study from December 2001 through December 2002. Ages of the women enrolled ranged from 13 years to 43 years (Median: 23 years). The majority of the participants were African American (65.1%), while 16.0% were White, 6.9% were Asian/Pacific Islander (API), 6.1% were Hispanic, and 5.9% represented other racial backgrounds. Serology results were positive for VZV IgG antibody, indicating varicella

Figure 20. West Philadelphia Varicella Cases by Age Group, 1995 through 2002*



*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.

immunity, for 489 of the 524 participants (93.3%), while 35 (6.7%) were susceptible with negative or indeterminate VZV IgG antibody results.

PERINATAL HEPATITIS B PREVENTION PROGRAM

In 1994, the Philadelphia Board of Health passed a regulation requiring all pregnant women to be screened for hepatitis B surface antigen (HBsAg) and positive test results reported to the PDPH. On receipt of a positive test result, a public health nurse initiates case management of the pregnant woman and her family. This involves identifying contacts who are susceptible to disease, screening for presence of antibodies, and facilitating administration of hepatitis B vaccine series as indicated. The pregnant woman is then followed to assure that her infant receives hepatitis B immune globulin (HBIG) after delivery, and that the hepatitis B vaccine series is initiated. The infant is also followed until he/she completes hepatitis B immunization and post-vaccination screening. This process often takes up to two years. In the ten-year history of the program 1216 cases have been successfully completed. Since 1997, a total of 14 infants (1%) have been found to be HBsAg positive on post-vaccination screening, despite adherence to the protocol for management of infants of HBsAg positive mothers. In 2001/2002 four of the 87 infants tested (a number of these children were born in the latter part of 2001) were found to be HBsAg positive to date. Most of the serologic follow-up for infants born in 2001 is still pending (85 of 158 infants).

Of the 140 positive perinatal HBsAg tests reported in 2001, 65 (50%) were foreign-born. There were 127 live births to these HBsAg-positive women. All infants (100%) were given the first dose of vaccine and HBIG at birth or within 2-7 days of birth. One hundred and two of the 127 live births received HBIG at birth and completed the three-dose series of hepatitis B vaccine to date. Twenty infants have moved out of jurisdiction. To date, 4 (5%) infants born in 2001 and who received 3 doses of HBV at appropriate intervals and had serologic testing at 9-15 months of age are positive for the hepatitis B surface antigen. Of the 76 infants tested in follow-up during calendar year 2001, 63 (83%) have seroconverted, and 13 (17%) have not seroconverted upon post vaccination serologic screening. These children are receiving additional doses of vaccine. One hundred and sixty nine household/sexual contacts were identified, 14 refused services, 130 received serologic screening, 5 were HbsAg positive, 52 were immune, 79 received one dose of HBV vaccine, 77 received 2 doses and 73 received 3 doses.

Preliminary data for 2002 are as follows. There were 158 live births of which 158 (100%) received a first dose of hepatitis B vaccine and HBIG within the appropriate interval, and 67 of 158 (42%) have completed three doses of hepatitis B vaccine within 8 months. Seventy completed by 12 months. Fifteen infants have moved out of jurisdiction. Post vaccination serologies are pending on 2002 births. One hundred forty-four household/sexual contacts were identified: 8 refused services, 89 received serologic screening, 6 were HbsAg positive, 41 were immune, and 60 have received at least one dose of HBV vaccine to date.

LIST OF REPORTABLE COMMUNICABLE DISEASES

**Philadelphia Department of Public Health
DIVISION OF DISEASE CONTROL
PHILADELPHIA, PA**

**ANNUAL COMMUNICABLE DISEASE TOTALS
1992 - 2002**

(NR = Not reportable, NA = Not available)	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
ACQUIRED IMMUNODEFICIENCY SYNDROME	737	1,825	1,413	1,294	1,297	1,223	909	1,383	1,077	1,127	1,138
AMEBIASIS	13	21	10	4	9	27	4	15	31	30	20
ANIMAL BITES	1,626	2,012	2,210	1,911	2,184	2,120	2,345	2,130	2,096	1,894	1,922
ANTHRAX	0	0	0	0	0	0	0	0	0	0	0
BOTULISM	0	0	0	0	0	0	0	1	1	1	3
BRUCELLOSIS	0	0	0	0	0	0	0	0	0	0	1
CAMPYLOBACTERIOSIS	178	220	211	138	193	157	142	132	148	90	97
CHLAMYDIA TRACHOMATIS	8,716	10,053	9,956	8,079	8,118	10,480	11,763	12,660	13,593	13,586	15,234
CHOLERA	0	0	0	0	0	0	0	0	0	0	0
CRYPTOSPORIDIOSIS	NR	NR	NR	24	20	14	14	24	22	13	15
CYCLOSPORIASIS	NR	NR	NR	NR	NR	NR	NR	NR	NR	1	0
DIPHtheria	0	0	0	0	0	0	0	0	0	0	0
ENCEPHALITIS [DUE TO WEST NILE VIRUS]	1 [0]	2 [0]	0 [0]	0 [0]	1 [0]	5 [0]	0 [0]	1 [0]	1 [0]	7 [2]	12 [6]
ESCHERICHIA COLI O157:H7	NR	NR	NR	7	5	3	6	7	6	42	17
GIARDIASIS	164	172	165	182	180	179	130	105	132	120	135
GONORRHEA	11,914	10,580	8,026	6,565	6,415	6,504	7,271	7,776	8,170	8,061	7,277
GUILLIAN-BARRE SYNDROME	1	1	1	2	1	1	0	2	3	2	2
HAEMOPHILUS INFLUENZAE [type b]	NR [0]	NR [1]	NR [1]	NR [1]	NR [5]	NR [4]	NR [2]	NR [0]	NR [0]	7 [1]	9 [1]
HEPATITIS A	44	15	30	22	269	176	133	62	255	98	70
HEPATITIS B	199	163	147	104	134	171	155	152	134	111	97
HEPATITIS (Non-A and Non-B) [C as of 1999]	3	1	4	1	0	7	0	3	1	1	4
HISTOPLASMOSIS	0	0	0	0	0	1	0	0	2	1	2
LEGIONELLOSIS	13	4	4	4	8	9	15	15	19	3	10
LEPTOSPIROSIS	0	0	0	0	0	0	0	0	0	1	1
LISTERIOSIS	NR	NR	NR	NR	3	6	5	10	12	8	19
LYME DISEASE	118	115	152	206	225	184	179	220	165	99	182
MALARIA	7	8	11	4	8	10	11	10	11	16	16
MEASLES	4	0	2	0	1	7	1	0	0	1	0
MENINGITIS, aseptic	15	11	10	16	11	39	26	25	68	71	112
MENINGITIS, bacterial	30	19	23	20	10	32	12	15	23	15	20
MENINGOCOCCAL INFECTIONS	24	19	15	13	18	15	13	13	24	12	15
MUMPS	8	8	4	7	9	5	1	5	2	1	1
PERTUSSIS	21	130	58	29	100	46	31	44	61	34	31
PLAGUE	0	0	0	0	0	0	0	0	0	0	0
POLIOMYELITIS	0	0	0	0	0	0	0	0	0	0	0
PSITTACOSIS	5	0	0	1	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	0	0	0	1	1	1	4	0	2	4
RUBELLA, including congenital rubella syndrome	0	2	0	0	1	0	1	0	0	0	0
SALMONELLOSIS	438	388	332	472	424	395	319	346	328	287	324
SHIGELLOSIS	240	196	91	293	412	361	123	129	115	139	191
STREPTOCOCCUS, INVASIVE Gp. A [# with TSS]	NR	NR	NR	NR	NR	NR	NR	NR	NR	14 [7]	16 [1]
SYPHILIS - PRIMARY & SECONDARY	907	515	298	199	141	108	89	69	67	77	71
SYPHILIS - CONGENITAL	271	153	106	65	63	35	24	8	9	4	4
SYPHILIS - TOTAL	4,811	3,752	2,006	1,299	1,298	1,091	796	826	622	639	589
TETANUS	0	0	0	0	0	1	0	0	0	0	0
TOXIC SHOCK SYNDROME	1	1	0	0	0	2	1	0	0	0	1
TOXOPLASMOSIS	0	0	0	0	0	1	2	3	2	3	0
TUBERCULOSIS	345	333	276	309	250	233	179	184	169	144	147
TULAREMIA	0	0	0	1	1	0	0	0	0	0	0
TYPHOID & PARATYPHOID FEVER	5	1	0	6	2	1	4	1	2	2	1
YELLOW FEVER	0	0	0	0	0	0	0	0	0	0	0