STATE HEALTH IMPROVEMENT PLAN

HEALTHY PENNSYLVANIANS 2010 AND BEYOND

STATE OF THE STATE

CHAPTER 9
COMMUNICABLE DISEASE

Chapter 9 Communicable Disease

Communicable Disease

KEY ISSUES ADDRESSED IN THIS CHAPTER:
COMMUNICABLE DISEASE-OVERVIEW
IMMUNIZATION - GENERAL
IMMUNIZATION IN PENNSYLVANIA
IMMUNIZATION – PUBLIC HEALTH EFFORETS AND RESOURCES
RESPONSIBLE SEXUAL BEHAVIOR – GENERAL
RESPONSIBLE SEXUAL BEHAVIOR IN PENNSYLVANIA
RESPONSBLE SEXUAL BEHAVIOR-PUBLIC HEALTH EFFORTS AND RESOURCES

When people think of public health, they often think of the advances made through clean water technologies, sanitation, the discovery of antibiotics and vaccines. Reduction in mortality from many infectious diseases has been described as the single most significant public health achievement in the past century.[1]

Sustaining a strong public health infrastructure for communicable diseases is important not only for keeping longstanding endemic infectious diseases at bay, but for responding to new challenges such as West Nile virus, Severe Acute Respiratory Syndrome (SARS), drug-resistant bacteria, and a flu pandemic.[2] In order to meet public health challenges all components of the system – public and private – need to be engaged in a timely and organized manner. Highlighted below are two public health challenges in Pennsylvania that illustrate how all components of the system need to collaborate and coordinate efforts to in a timely and organized manner.

- In November 2003, a clinician in Southwestern Pennsylvania contacted the Department to report a positive hepatitis A case. The clinician noted that as many as 10 other cases of hepatitis A had been seen recently in a local Emergency Department. Over the next 36 hours 7 other hepatitis A cases were reported.[3] These events marked the beginning of the largest U.S. outbreak of hepatitis A, jointly investigated by the Pennsylvania Department of Health and Centers for Disease Control and Prevention (CDC), in which over 650 persons developed hepatitis A and approximately 9,000 persons were inoculated with immune globulin to prevent development of the disease.[4]

- As a result of a shortage of influenza vaccine in the 2004 – 2005 influenza season, Pennsylvania was challenged to ensure that available vaccine was prioritized for distribution according to the CDC's recommendations for populations at greatest risk. On October 5, 2004, when it was learned that about half of the nation's influenza vaccine would not be available for the 2004 – 2005 influenza season, approximately 1.5 million doses of vaccine had already been distributed to Pennsylvania. In partnership with the Hospital and Healthsystem Association of Pennsylvania, the Department was able to acquire and redistribute 361,000 doses of flu vaccine to meet approximately 100% percent of the identified vaccine need for long-term care facilities, hospitals, dialysis centers, Area Agency on Aging sites, and home health agencies in the state.[5]

Because the leading health indicators of immunization and responsible sexual behavior emphasize the importance of preventing infectious diseases, they fall within the Department of Health's Bureau of Communicable Diseases. The Department of Health operates disease control programs for four major kinds of infectious and communicable diseases: vaccine preventable diseases, HIV/AIDS, sexually transmitted diseases (STDs) and tuberculosis. Each of the disease control programs has a disease tracking and monitoring component, a prevention component, a clinical care component, and an evaluation component. In addition, the Division of Infectious Disease Epidemiology (IDE) within the Bureau of Epidemiology coordinates the statewide implementation of Pennsylvania's Disease Reporting Act and the reporting of 48 communicable diseases specified by state law to the CDC. Community health providers and laboratories in Pennsylvania directly enter data into the Internet-Based

National Electronic Disease Surveillance System (PA-NEDSS) to report communicable diseases. The web-based system integrates the functionality of legacy systems such as the STD Program's Management Information System (MIS) and the TB Program's Tuberculosis Information Management System (TIMS), and the data systems for Infectious Disease Epidemiology and vaccine preventable diseases, into one system. PA-NEDSS not only improves the timeliness and accuracy of disease reporting but also expands the public health infrastructure to improve response to possible bioterrorism attacks.[6]

This chapter highlights data and information for the leading health indicators of immunization and responsible sexual behavior and provides resource information for community partners.

HP2010 LEADING HEALTH INDICATOR - IMMUNIZATION

Health Issues – Immunization

Immunization is a potent weapon against the spread of vaccine preventable diseases. International travel and commerce, increased immigration, and contact with environments where these infectious diseases remain leading killers reinforce the importance of immunization coverage for communities in the United States.[7] Without immunizations, epidemics of many preventable diseases could re-emerge, resulting in unnecessary illness, disability, or death. The public health infrastructure that delivers and maintains immunization services is a crucial part of rapid response to emerging or re-emerging infectious diseases and the new threats of bioterrorism.

National Observations

Several immunizations are recommended throughout a person's lifetime.[8] The growing number of vaccines and the complexity of vaccination schedules pose significant challenges to the delivery of appropriate immunizations in a timely manner to identified populations. This may be especially true for certain racial and ethnic minorities, persons of lower socioeconomic status, immigrants, rural residents, migrants and others who already experience barriers to prevention services and consistent health care.

- Infectious diseases remain the leading cause of death worldwide. If immunizations did not exist in the United States for such highly infectious diseases as diphtheria, tetanus, and pertussis, it is estimated that one in 20 people would die from diphtheria, one in 20 would die from pertussis, and three in 100 would die of tetanus.[9]

- Most vaccine preventable diseases in the United States occur among adults, with more than 36,000 deaths annually attributable to influenza. Adults at greatest risk of complications include the elderly, pregnant women, and people with certain medical conditions or other diseases such as AIDS, diabetes, emphysema, and heart disease. For populations disproportionately burdened by these conditions, particularly different racial and ethnic groups, immunizations can become a vital component of overall health care.[10]

- In 2000, the CDC's National Immunization Program's Advisory Committee on Immunization Practices recommended that administration of new pneumococcal conjugate vaccine be a priority for certain racial and ethnic groups, including African-American children.[11] Incidence rates of pneumonia were lower for all populations under surveillance after introduction of the vaccination. Children under age 5 from all racial and ethnic groups met the Healthy People 2010 target for incidence by 2002. There was also reduced incidence of pneumonia among adults following the vaccination of the children,[12] an observation explained by "herd immunity." Herd immunity is the

resistance of a group to the invasion and spread of an infectious disease based on the resistance to infection by a high proportion of individual members of the group.[13]

- In keeping with the outcomes of the administration of the pneumococcal vaccine described above, recent studies suggest that widening the number of populations recommended to receive flu shots, for example school-age children who can readily spread the flu, might protect more vulnerable populations such as the elderly and the community as a whole.[14] In addition, broadening vaccination guidelines could assist in assuring a more stable supply of vaccine.[15]

- A secondary analysis of the National Health Interview Survey for 1993 to 2001, showed there were no substantial differences between the up-to-date immunization status of children living in metropolitan areas compared to those living in rural areas. There did appear to be a delay in introducing new vaccines into rural areas compared to metropolitan areas during the first 2 years of the vaccine recommendation, but there were no overall significant difference in immunization status between White, Black, and Hispanic children living in metropolitan and rural areas.[16]

- Although vaccination coverage rates for children aged 19 to 35 months in the United States have reached record-high levels, substantial vaccination delays occur among children prior to becoming fully vaccinated. During the first 24 months of life, 37 percent of children were undervaccinated for more than 6 months and more than half of children were delayed with multiple vaccinations. Factors associated with the delay of vaccinations included having a mother who did not have a college degree or was unmarried, living in a household with two or more children, being non-Hispanic black, having two or more vaccination providers, and using public vaccination providers.[17]

- A study in four selected underserved areas found that the immunization histories of some children were fragmented between the parents and health care providers, thus limiting the ability of the provider to vaccinate the children appropriately.[18]

- Parental beliefs about the severity of the side effects of immunizations can influence late immunizations.[19]

- Adults of lower socioeconomic status, Black adults, and Hispanic adults are less likely to have recommended immunizations for influenza and pneumococcal disease.[20]

- Among Medicare beneficiaries, 66.6 percent of White beneficiaries self-reported having received an influenza vaccination as compared to 52.5 percent of Hispanics and 43.3 percent of African Americans. A resistant attitude toward vaccination had a role in low vaccination rates for African Americans, but not Hispanics. White beneficiaries were more likely to initiate a health care encounter for the purpose of vaccination than other groups, and although minority patients did not show disparities in access to care, health care providers appeared to miss standard medical encounters with them as an opportunity to provide vaccination.[21]

- In an examination of the health status of Cambodians and Vietnamese living in selected communities in the United States, approximately 18.8 percent of Cambodians and 40.0 percent of Vietnamese aged 65 and over reported ever having a pneumococcal vaccination, compared to 63.4 percent of aggregate Asians and 61.8 percent of the general U.S. population.[22]

Visit the Pennsylvania Department of Health web site for links to additional resources
www.health.state.pa.us

Economic Considerations - Immunization

One-fourth of visits to physicians are related to infectious diseases with annual costs over $120 billion.[23]

The cost-effectiveness of routine childhood immunizations has been well documented, with one estimate suggesting that for each dollar spent now on immunizations, $10-$14 will be saved by preventing diseases in the future. [24]

Immunization in Pennsylvania – Trends and Disparities

PENNSYLVANIA HEALTHY PEOPLE 2010 DATA – TRACKING PROGRESS

Progress on the leading health indicator of immunization is measured by two Healthy People 2010 objectives:

- **HP2010 Objective 14-24a**. Increase the proportion of young children who receive all vaccines that have been recommended for universal administration for at least 5 years.
    - According to 2003 data collected for Pennsylvania for this objective, no disparities exist. The data for all children in Pennsylvania indicate that the Healthy People 2010 goal of having 80 percent of children fully immunized has been reached. However, differences among children of different socioeconomic status, race, or ethnicity are not noted because there is limited data available.

- **HP2010 Objective 14-29a,b**. Increase the proportion of noninstitutionalized adults who are vaccinated annually against influenza and ever vaccinated against pneumococcal disease.

Pennsylvania data and observations are presented below.

Pennsylvania's Healthy People 2010 data for adult immunizations show that no single population group has reached the Healthy People 2010 goal.

- 68 percent of male adults in 2004 aged 65 and over had had a flu shot in 2004, which was significantly higher than the percentage for females (60%).

- The percentage of adults aged 65-74 with a flu shot in the past year (60%) was significantly lower than the percentage for those aged 75-84 (67%).

- Flu shots significantly increase as education levels increased amongst adults 65 and older. For example, Pennsylvania adults age 65 and older with less than a high school education had significantly lower percentage of flue shots (57%) than those who were high school graduates (67%) and those with some college education (63%).

Table 9-1

Objective 14-29a % Adults 65+ With Flu Shot in Past Year[25]					
(age-adjusted to 2000 std population)	2010 Goal	PA 2004	PA 2003	PA 2002	PA 2001
Persons 65+	90	64± 3	70± 3	71± 2	64± 4
Males 65+	90	68± 4	77± 5	73± 3	66± 6
Females 65+	90	60± 3	65± 4	70± 3	63± 5
Non-Hispanic Whites 65+	90	64± 3	71± 3	72± 2	65± 4
Non-Hispanic Blacks 65+	90	DSU	DSU	69±11	DSU
Hispanics 65+	90	DSU	DSU	DSU	DSU
< HS Education	90	57± 7	60± 9	69± 5	56± 8
HS grad	90	67± 4	72± 5	72± 3	62± 6
Some college	90	63± 5	73± 6	71± 3	72± 6
Ages 65-74*	NA	60± 4	65± 5	68± 3	62± 5
Ages 75-84*	NA	67± 4	77± 5	75± 3	66± 6
Ages 85+*	NA	68± 9	DSU	67± 8	DSU
65+ and diabetic*	NA	72± 6	75± 8	75± 5	67± 9

*not age-adjusted DSU – Data statistically unreliable (small numbers)
NOTE: All data above for Objective 14-29a exclude institutionalized persons.
Source: PA DOH, Bureau of Health Statistics and Research, Healthy People 2010 Statistics, 2001-2004.

The health disparities identified here are gender, age and education. As mentioned previously, differences among ethnic/racial groups were statistically unreliable.

In Table 9-2, the percentage of adults in 2004 aged 65-74 who were ever vaccinated against pneumococcal disease (55%) was significantly lower than the percentage of adults aged 75-84 (73%). While there is much work that needs to be done to reach HP2010 goal of 90%, the population that suffers disproportionately is persons aged 65-74.

Table 9-2

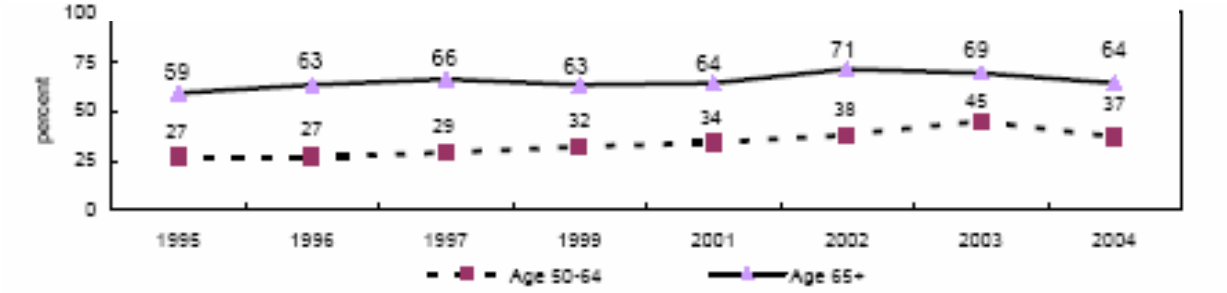
Objective 14-29b % Adults 65+ Ever Vaccinated Against Pneumococcal Disease[26]					
(age-adjusted to 2000 std population)	2010 Goal	PA 2004	PA 2003	PA 2002	PA 2001
Persons 65+	90	63± 3	67± 4	64± 2	60± 4
Males 65+	90	62± 4	66± 6	64± 4	61± 7
Females 65+	90	64± 3	68± 4	65± 3	60± 5
Non-Hispanic Whites 65+	90	64± 3	69± 4	65± 2	61± 4
Non-Hispanic Blacks 65+	90	DSU	DSU	61±11	DSU
Hispanics 65+	90	DSU	DSU	DSU	DSU
< HS Education	90	61± 7	55± 9	63± 5	56± 8
HS grad	90	65± 4	70± 5	64± 3	56± 6
Some college	90	64± 5	70± 6	64± 4	68± 6
Ages 65-74*	NA	55± 4	61± 5	60± 3	55± 5
Ages 75-84*	NA	73± 4	74± 5	71± 3	67± 6
Ages 85+*	NA	65± 10	DSU	59± 9	DSU
65+ and diabetic*	NA	72± 7	70± 9	69± 5	69± 9

*not age-adjusted DSU – Data statistically unreliable (small numbers)
NOTE: All data above for Objective 14-29b exclude institutionalized persons.
Source: PA DOH, Bureau of Health Statistics and Research, Healthy People 2010 Statistics, 2001-2004.

According to non-age adjusted data from the Pennsylvania BRFSS,[27] the proportion of Pennsylvanians ages 50 to 64 receiving a flu vaccination increased from approximately 27 percent in 1995 to approximately 45 percent but declined for the first time in 2004 to 37 percent.

Figure 9-1

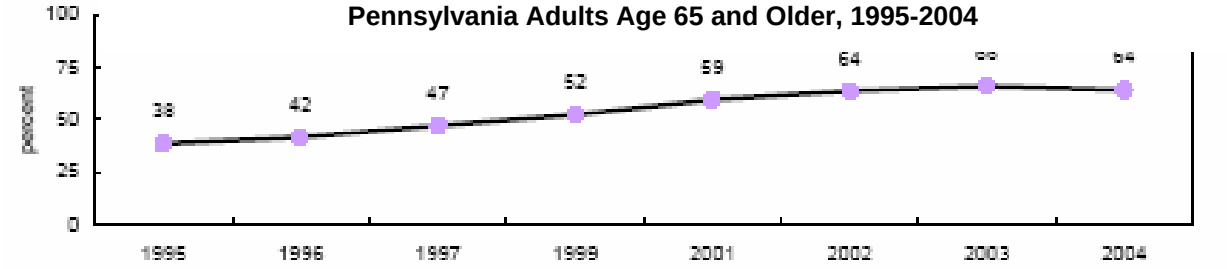
*** Percent Who Had Flu Shots in the Past Year**
Pennsylvania Adults Ages 50 – 64 and 65 and Older, 1995-2004



Additionally, the data between 1995 and 2004 show a steady increase in the percent of Pennsylvania adults age 65 and older who ever had a pneumonia vaccination. However, Table 9-2 illustrates a decline in 2004 with Pennsylvania adults age 65 – 74.

Figure 9-2

*** Percent Who Ever Had Pneumonia Vaccination**
Pennsylvania Adults Age 65 and Older, 1995-2004



* Source of figures: PA DOH, Bureau of Health Statistics and Research, Behavioral Health Risk Data, 1995-2004.

Regional data from the Pennsylvania Behavioral Health Risk Factor Surveillance System Surveys for years 2002, 2003 and 2004 show statistically significant differences for a few geographical areas compared to statewide percentages: [28]

- Fifty-three percent of all Pennsylvania adults aged 50 and over had had a flu shot in the past year. In Cumberland and Perry Counties, 64 percent of adults aged 50 and over had a flu shot, which was *significantly higher* compared to the state; 43 percent of Westmoreland County adults had a flu shot, which was *significantly lower* compared to the state.

- The Pennsylvania BRFSS for 2002-2004 also showed that 64 percent of Pennsylvania adults age 65 and over ever had a pneumonia vaccination. The percentage of Delaware County adults age 65 and over that ever had a pneumonia vaccination was *significantly lower* at 50 percent.

RESOURCES

Pennsylvania Public Health Efforts – Immunization

The primary goal of the **Department of Health's Immunization Program** is to achieve maximum immunization coverage in order to eliminate or reduce the occurrence of vaccine preventable diseases.[29] In addition to providing vaccines, the Department takes a comprehensive, multifaceted approach to immunization coverage that includes assessment of immunization coverage, immunization registry and tracking systems, disease surveillance, disease investigations and outbreak control interventions, enforcement of school and childcare group settings immunization regulatory reporting, coalition building, and outreach/education. Information on the Department's immunization programs can be found at
www.health.state.pa.us/immunizations

To stay apprised of seasonal flu activity in the state and obtain information on pandemic flu, choose "flu" under "Health Topics A – Z" on the Department of Health's website at www.health.state.pa.us.

Pennsylvania's Role in Influenza Prevention and Control, September 2004
http://jsg.legis.state.pa.us/Flu%20Report.PDF
This report describes the threats posed by influenza viruses and the public health infrastructure designed to prevent and control outbreaks, which includes programs within the Departments of Health, Aging, and Welfare. It offers recommendations to improve Pennsylvania's capacity to protect the public from future influenza epidemics.

Other State Agency and National Resources – Immunization

CDC's National Immunization Program
CDC's National Immunization Program website provides direct access to immunization recommendations of the Advisory Committee on Immunization Practices (ACIP), vaccination schedules, vaccine safety information, publications, provider education and training, and links to other immunization-related websites. The CDC facilitates federal funding for infrastructure and vaccines to 64 state, city and territories. Pennsylvania is one of those grantees that receives more than 1,000,000 doses of vaccines annually for those individuals who have no private provider access to immunizations. CDC's website is located at http://www.cdc.gov/nip

National Partnership for Immunization
This national organization encourages greater acceptance and use of vaccinations for all ages through partnerships with public and private organizations. Their Internet address is
http://www.partnersforimmunization.org

Immunization Action Coalition
This source provides extensive free provider and patient information, including translations of Vaccine Information Statements into multiple languages. Available at http://www.immunize.org

American Academy of Pediatrics (AAP)
Every 3 years, AAP issues the *Red Book: Report of the Committee on Infectious Diseases*, which contains a composite summary of AAP recommendations concerning infectious diseases and immunizations for infants, children, and adolescents. http://www.aap.org

National Network for Immunization Information
This information source is provided by the Infectious Diseases Society of America, Pediatric Infectious Diseases Society, AAP, American Nurses Association, and other professional organizations. It provides objective, science-based information regarding vaccines for the public and providers. The Internet site is http://www.immunizationinfo.org

Vaccine Education Center
Located at the Children's Hospital of Philadelphia, this source provides patient and provider information. The Internet address is http://www.vaccine.chop.edu

Institute for Vaccine Safety
Located at Johns Hopkins University School of Public Health, this source provides information regarding vaccine safety concerns and objective and timely information to health-care providers and parents. It is available at www.vaccinesafety.edu.

Partnership Activities – Immunization

SHIP partnerships have proved to be very effective in mobilizing community distribution of vaccines. In 2003, 32,000 doses of influenza vaccine and 1,300 doses of pneumococcal vaccine were delivered, through a collaboration with Pennsylvania's Immunization Program, to 20 SHIP partners for persons 65 years of age and older that were underserved due to racial, ethnic or geographic factors. SHIP partners used their relationships with churches, Meal on Wheels programs, diabetes support groups, hospitals, county medical societies, YMCAs and others to reach the target population. The project received a 2004 Excellence in Immunization Award from the National Partnership for Immunization.

Due to the influenza vaccine shortage during the 2004 – 2005 season, the SHIP/Immunization partnership could not provide flu vaccine and immunization outreach information as planned. However, 15 SHIP partners continued their efforts through education about the influenza disease and focused on social and respiratory methods of prevention.

Community health representatives who helped to develop *SHIP 2006-2010* voiced several challenges related to the promotion of responsible sexual behavior. These challenges included:
- A growing complacency among people to the continued importance of prevention
- Value of testing for STDs, including HIV, among all sexually active individuals
- Sexual activity among anonymous partners who meet via the Internet
- Patient adherence to drug and treatment regimens
- Emergence of more virulent viruses and drug resistant bacteria
- Resistance of infections to available medications

HP2010

Leading Health Indicator - Responsible Sexual Behavior

Health Issues – Responsible Sexual Behavior

The Centers for Disease Control and Prevention estimates that 19 million sexually transmitted disease (STD) infections occur annually.[30] In addition, the human immunodeficiency virus (HIV) that causes acquired immunodeficiency syndrome (AIDS) is spread most commonly by having unprotected sex with an infected partner.[31] Although abstinence from all forms of sexual activity is the only method of complete protection from STD and HIV infections, correct and consistent condom use can help to prevent transmission of these infections.

Untreated STDs cause serious reproductive health problems, health complications in newborns, and cancer.[32] When other STDs are present, HIV transmission is at least two to five times greater than when other STDs are not present.[33] HIV infection complicates the treatment of co-morbid conditions, such as tuberculosis, and can lead to premature death if left untreated.

Despite the serious consequences of STDs, several new technologies and developments are improving prevention, screening, and treatment options:

- The OraQuick HIV rapid test is a simple, rapid test that provides results in 20 minutes and can be administered outside of clinical settings in such places as homeless shelters, prisons, and other community settings.[34] It was approved for use by the Food and Drug Administration in 2002.

- A contraceptive gel that prevents most sexually transmitted diseases, including AIDS is currently under development. Final human testing is occurring in the United States, Ghana, and Nigeria, and the gel is expected to be available in about two years.[35]

- Vaccines are available for the prevention of the hepatitis A virus (HAV) and hepatitis B virus (HBV), both of which can be transmitted sexually. Vaccines are under development for other STDs, including the human immunodeficiency virus (HIV), human papillomavirus virus (HPV), and herpes simplex virus (HSV). Current emphasis is on the integration of STD prevention and treatment activities to include vaccination.[36]

National Observations

An examination of sexual behavior reveals many differences across population groups. For example, differences by age, gender and race have been noted for condom use among young people.[37]

- National data on the consistency of condom use for young people age 15 – 24, indicate that 31 percent of females and 47.5 percent of males had used condoms every time they had sex in the past four weeks. Consistency of use was lower over the longer term of the previous 12 months, however, with 21.1 percent of females and 32.9 percent of males reporting they had used condoms consistently.

- For never-married females and males, a larger percentage of the 15-19 year olds consistently used condoms than those in the 20 – 24 age group.

- Never married Non-Hispanic Black males age 15 – 24 reported the most consistent condom use, with 72.2 reporting they used a condom with every act of sexual intercourse in the past four weeks, and 47.2 percent reporting consistent condom use in the previous 12 months.

Other disparate disease burdens result from sexual behavior:

Age

- Half of the 18.9 million new STD infections that occur each year in the United States occur in persons younger than 25 years of age.[38]

- Research has suggested that adolescent sexual networks are structured differently than adult networks. Whereas adult networks typically have a core group or “hub” of very sexually active people, the sexual network of adolescents in an unidentified Midwestern high school was spread out along long chains in the community. One part of the network linked 288 students in one long chain, where student A had relations with student B, who had relations with student C and so forth.

Because there was no small core or target group that supported the network, the researchers concluded that broad-based preventive interventions that reached across the student population might be more effective.[39]

Gender

- STDs frequently are transmitted more easily from a man to a woman and women suffer more frequent and more serious STD complications than men, including pelvic inflammatory disease (PID), ectopic pregnancy, infertility, and chronic pelvic pain. STDs in pregnant women can cause serious health problems or death to the fetus or newborn. Young women are particularly vulnerable to STD infection because of changes to the cervix during puberty.[40]

Education

- The AIDS death rate for people with less than a high school education is five times the rate for people with a college education.[41]

Income

- A direct relationship has been found between higher AIDS rates and lower income levels.[42]

Sexual Orientation

- In 2002, Men Who Have Sex with Men (MSM) accounted for over 80 percent of primary and secondary syphilis cases in men in San Francisco and Los Angeles. Although syphilis infection facilitates the transmission of HIV, as of 2002, the syphilis outbreaks had not had a large impact on HIV incidence among MSM in the two cities. Continued increases in syphilis cases in MSM, however, strengthens the need for integrated HIV and STD prevention strategies.[43]

- A retrospective review of all men aged 18 – 30 years in North Carolina with HIV diagnosed during January 2000 to May 2003 showed an increase in HIV among male college students from 2 cases to 56 cases. Of the 56 male college students, 49 (88 percent) were black and nearly all were MSM, including some men who had sex with both men and women. An epidemiological study found that the most common reasons why MSM and young black people in general continue to engage in high-risk sexual behavior were: lack of sustained prevention messages targeting young blacks; feeling personally disconnected from the reality that they might contract HIV; and believing that physical characteristics and appearance can inform one about their partner's HIV status. The majority of black MSM college students reported meeting partners either at nightclubs or over the Internet, suggesting prevention and testing activities might be targeted to these environments. Nearly 20 percent of the study participants also reported having female sex partners, an observation that supports continued prevention efforts aimed at young women.[44]

- While MSM have had greater health disparities in STD and HIV infection documented than other groups, it should be noted that myths persist regarding lesbians' risks of STD infection. Researchers at the University of Washington in Seattle found that 13 percent of 258 women who reported having sex with women (WSW) were infected with HPV. Despite the occurrence of genital HPV, many of the WSW did not receive adequate Pap test screening because they did not believe Pap tests were necessary.[45]

Geography and Location

- Because of the nature of adult sexual networks and sexual behavior, STD outbreaks may occur in isolated or marginalized neighborhoods and communities. Other locations and settings are also more vulnerable to the spread of communicable diseases simply because of the close proximity of people. One setting or location where communicable diseases, including STDs and HIV disease, are of concern are correctional facilities. In a given year, approximately 17 percent of people with AIDS pass

through a correctional facility and the prevalence of AIDS among inmates is five times greater than among the general U.S. population. The rate of transmission for sexually transmitted diseases in correctional facilities is about 10 times that in the community.[46]

Race and Ethnicity

The data collected on STDs and HIV/AIDS reveal some of the greatest health disparities among different racial and ethnic groups. Sexual norms and acceptable sexual behaviors vary by culture and sexually transmitted diseases, including HIV/AIDS, have a significant impact on the sexual health of racial and ethnic groups.

- When compared to Whites, African Americans and Hispanic populations frequently have higher rates of STDs.[47]
- Although antiviral therapy and new medications have made HIV disease manageable for many people, African Americans continue to die at rates greater than those for whites.[48]
- Although Asians/Pacific Islanders have the lowest rates of AIDS diagnosis (4.0 per 100,000) among racial and ethnic groups in the United States, AIDS incidence in this group has increased 38 percent between 1998 and 2002, compared with a 2.4 percent increase among African Americans and a 12 percent decrease among Whites. [49]
- In an ongoing survey conducted by the Kaiser Family Foundation, perceptions of HIV/AIDS issues vary across racial and ethnic groups[50]

The Kaiser Family Foundation survey found:

- 87.9 percent of students had HIV/AIDS education in school, with a larger percentage of White students (90.3%) than Black (85.1%) or Hispanic (83.4%) students reporting they had been taught in school about HIV/AIDS
- While 41 percent of Latinos and 42 percent of Whites had personally known someone who tested positive for HIV, had AIDS, or had died of AIDS, 64 percent of African Americans had personally known someone with these characteristics

Beliefs resulting from personal and cultural experiences can influence sexual behaviors. A survey of a sample of African Americans by the Rand Corporation found that 53 percent agreed with the statement, “there is a cure for AIDS, but it is being withheld from the poor.” About 16 percent agreed that AIDS was created by the government to control the black population. African American men who agreed with conspiracy beliefs were significantly less likely to report using condoms regularly. This finding did not hold true for African American women.[51]

Economic Considerations – Responsible Sexual Behavior

Of the nearly 19 million cases of STDs that occurred in the U.S. in the year 2000, almost one half were among persons aged 15 –24 years. The direct medical costs of these STDs among the age group were at least $6.5 billion in 2000 alone.[52]

Responsible Sexual Behavior in Pennsylvania – Trends and Disparities

PENNSYLVANIA HEALTHY PEOPLE 2010 DATA – TRACKING PROGRESS

Healthy People 2010 uses the following two objectives to monitor responsible sexual behavior. Pennsylvania currently has selective data for adult age groups, but not for youth.

- **HP2010 Objective 13-6a and 13-6b**: Increase the proportion of sexually active persons who use condoms.

Pennsylvania collects data only on *condom use to prevent pregnancy* for unmarried sexually active females and males, ages 18 to 44 and 18 to 49, respectively. Data are collected via the Behavioral Risk Factor Surveillance System Survey. In order to reach the Healthy People 2010 goal of at least 50 percent of sexually active females using condoms, current Pennsylvania percentages will have to roughly double. However, there are no significant disparities presented in the data; therefore other data need to be examined to determine what, if any, disparities exist.

- **HP2010 Objective 25-11:** Increase the proportion of adolescents who abstain from sexual intercourse or use condoms if currently sexually active, is also recommended to monitor responsible sexual behavior,

Pennsylvania does not currently collect data for this objective. The Pennsylvania Department of Education's 2004 School Health Profiles Report provides some general, related information on HIV and STD prevention education. For example, among schools that require a health education course, 97 to 100 percent teach HIV prevention and 92 to 97 percent teach STD prevention. Additionally, 93 to 98 percent teach abstinence as the most effective method to avoid HIV infection and 38 to 48 percent teach how to correctly use a condom.[53]

A look at Pennsylvania's Healthy People 2010 data on the incidence of sexually transmitted diseases, including HIV disease, show large disparities, at times, between men and women, and different racial and ethnic groups. On the following pages data for Chlamydia, gonorrhea, syphilis, and HIV/AIDS are presented.

Chlamydia

- Among females and males, age 15 – 24 who attended STD clinics in 2004, the smallest percentage that tested positive were Hispanic females at 8.5 percent and the largest percentage that tested positive were black males at 26.0 percent.

- Of all racial and ethnic groups, Hispanic males and black males had the highest percentages testing positive.

Table 9-3

Objective 25-01b % females (ages 15-24) attending STD clinics who test positive for chlamydia trachomatis infections[54]					
	2010 Goal	PA 2004	PA 2003	PA 2002	PA 2001
Females 15-24	3.0	9.0	5.1	5.6	6.9
White Females 15-24	3.0	9.5	3.9	4.3	5.3
Black Females 15-24	3.0	13.4	11.5	15.6	14.7
Hispanic Females 15-24**	3.0	8.5	8.5	9.6	11.2

**Hispanics can be of any race
Source: PA DOH, Bureau of Health Statistics and Research, Healthy People 2010 Statistics, 2001-2004.

Compared to all Pennsylvania females and males age 15-24, black females and black males had the highest percentages testing positive for chlamydia at STD clinics.

Table 9-4

Objective 25-01c % males (ages 15-24) attending STD clinics who test positive for chlamydia trachomatis infections[55]					
	2010 Goal	PA 2004	PA 2003	PA 2002	PA 2001
Males 15-24	3.0	15.6	15.0	17.7	17.0
White Males 15-24	3.0	14.5	12.0	12.1	9.0
Black Males 15-24	3.0	26.0	24.0	24.6	28.6
Hispanic Males 15-24**	3.0	15.0	19.4	19.5	21.7

**Hispanics can be of any race
Source: PA DOH, Bureau of Health Statistics and Research, Healthy People 2010 Statistics. 2001-2004.

Gonorrhea

- The 2002 incidence rate of gonorrhea among females age 15 to 24 was the highest rate of all population groups and 28 times the Healthy People 2010 target.
- White males, white females, and whites in general are the only population groups that reached the Healthy People 2010 target in 2002.

- The data for gonorrhea reflect many of the common disparities seen for STDs: Blacks and Hispanics have significantly higher rates than Whites, rates drop with increasing age, and in the case of this STD, females have higher rates than males. A higher female rate may be due, in part, to more sensitive screening tests and methods, and because of the asymptomatic nature of many gonorrhea infections in females.

Table 9-5

Objective 25-02 Gonorrhea incidence rate per 100,000 population[56]						
	2010 Goal	**PA 2002**	**PA 2001**	**PA 2000**	**PA 1999**	**PA 1998**
All Persons	19	96.2	112.6	109.1	108.5	94.2
Whites	19	14.6	13.3	11.8	12.0	9.8
Blacks	19	488.8	665.9	668.2	648.7	581.5
Hispanics*	19	105.1	125.5	118.5	137.0	105.2
Persons 15 to 24	19	413.3	503.5	500.4	471.2	412.9
Persons 25 to 34	19	190.0	208.2	199.6	193.0	162.3
Persons 35 to 44	19	63.0	70.7	68.8	71.8	64.7
Males	19	87.4	103.9	103.6	100.3	87.6
White Males	19	10.0	8.7	7.8	7.8	6.4
Black Males	19	524.4	715.4	732.2	679.0	611.7
Hispanic* Males	19	93.5	113.2	108.0	124.5	99.2
Males 15 to 24	19	290.7	352.5	357.6	323.8	283.4
Males 25 to 34	19	192.4	225.7	226.2	207.9	179.3
Males 35 to 44	19	84.6	99.7	100.4	101.6	93.8
Females	19	104.3	120.6	114.3	116.1	100.4
White Females	19	18.9	17.6	15.6	16.0	12.9
Black Females	19	456.8	621.5	611.1	621.0	554.0
Hispanic* Females	19	117.3	138.5	129.5	150.0	111.6
Females 15 to 24	19	538.9	658.2	646.2	620.9	544.7
Females 25 to 34	19	187.6	190.8	173.3	177.8	145.0
Females 35 to 44	19	42.0	42.6	38.1	42.7	36.3

*Hispanics can be of any race
Source: PA DOH, Bureau of Health Statistics and Research, Healthy People 2010 Statistics, 1998-2002.

The greatest disparities for gonorrhea incidence rate occur by age and race. While the 2002 rate for all persons is 96.2 per 100,000 population, the rate for persons age 15 to 24 is 413.3 and the rate for blacks is 488.8.

Syphilis

- The 2002 syphilis rates for all Blacks, Black males, and Black females in Pennsylvania are higher than the rates for other groups.

- In 2003, Philadelphia ranked 17 out of the 25 cities with the highest reported rates of primary and secondary syphilis. With 98 total cases in 2003, Philadelphia had a case rate of 6.6 per 100,000 population in 2003 compared to 4.6 in 2002. However, in 2004, the number of primary and secondary syphilis cases in Philadelphia dropped to 72, resulting in a case rate of 4.9 per 100,000 population.[57]

- As noted in the health disparities chapter, Pennsylvania saw a 47 percent increase in the number of primary and secondary syphilis cases, from 108 cases in calendar year 2002 to 159 cases in 2003.

Sixty-nine of the 159 cases or 43 percent were linked to MSM, with use of the Internet to pick up male sex partners identified as a key risk factor.[58]

- Primary and secondary syphilis in Pennsylvania (exclusive of Philadelphia County) decreased from 61 cases in calendar year 2003 to 48 cases in calendar year 2004. Thirty-one of the 48 cases (65 percent) were reported in only two counties, Montgomery (21 cases) and Allegheny (10 cases). Montgomery County is adjacent to Philadelphia and Allegheny County contains Pittsburgh – the two major population centers of the state.[59]

- In October 2001, the Department of Health investigated an outbreak of early syphilis in the Southwest Health District. The central geographic focus of the outbreak was confined to a community in Westmoreland County and all cases were either directly or indirectly linked to individuals involved with prostitution and crack cocaine use.[60]

Table 9-6

Objective 25-03 Incidence rate of primary and secondary syphilis per 100,000 population[61]						
	2010 Goal	**PA 2002**	**PA 2001**	**PA 2000**	**PA 1999**	**PA 1998**
All Persons	0.2	1.3	0.8	0.6	0.7	0.8
Whites	0.2	0.6	0.3	0.1	0.2	0.1
Blacks	0.2	6.2	5.1	5.4	4.7	6.8
Hispanics*	0.2	DSU	DSU	DSU	DSU	DSU
Males	0.2	2.1	1.2	0.8	1.0	1.1
White Males	0.2	0.6	0.6	DSU	0.3	DSU
Black Males	0.2	6.6	6.7	7.4	6.9	9.6
Hispanic* Males	0.2	DSU	DSU	NE	DSU	NE
Females	0.2	0.5	0.4	0.5	0.4	0.5
White Females	0.2	0.3	DSU	DSU	DSU	DSU
Black Females	0.2	2.5	3.6	3.6	2.8	4.2
Hispanic* Females	0.2	DSU	DSU	DSU	DSU	DSU

*Hispanics can be of any race DSU – Data statistically unreliable (small numbers)
Source: PA DOH, Bureau of Health Statistics and Research, Healthy People 2010 Statistics, 1998-2002.

HIV/AIDS

- The AIDS incidence rate for Blacks in Pennsylvania is 18.5 times the white rate. The Hispanic rate is nearly 14 times the white rate. While the 2003 white rate is approximately 4 times the Healthy People 2010 goal of 1.0 case per 100,000 population, the Black rate is almost *78 times* the Healthy People 2010 goal.

Table 9-7

Objective 13-01 AIDS incidence rate per 100,000 population (persons aged 13+)[62]						
(reported cases per 100,000 aged 13+)	2010 Goal	PA 2003	PA 2002	PA 2001	PA 2000	PA 1999
Persons 13+	1.0	13.2	13.2	13.9	14.5	18.3
Males 13+	1.0	19.3	19.6	20.9	21.7	28.8
Females 13+	1.0	7.6	7.4	7.5	7.9	8.7
Whites 13+	1.0	4.2	4.2	4.6	4.7	5.8
Blacks 13+	1.0	77.8	79.7	88.2	94.2	116.6
Hispanics 13+	1.0	57.9	56.3	55.3	58.0	97.0

Source: PA DOH, Bureau of Health Statistics and Research, Healthy People 2010 Statistics, 1999-2003.

- In 2003 black males had the highest HIV disease death rate of all groups at 33.3, followed by Hispanic males at 19.5 and Black females at 16.1. The overall male rate was more than twice the female rate and the overall black rate was almost 15 times the white rate. Extremes are evident in the data. While White females are close to achieving the Healthy People 2010 goal of 0.7, the rate for Black males is 47.6 times higher than the Healthy People 2010 goal.

Table 9-8

Objective 13-14 HIV disease death rate per 100,000 population[63]						
(per 100,000) (age-adjusted to 2000 std population)	2010 Goal	PA 2003	PA 2002	PA 2001	PA 2000	PA 1999
All Persons	0.7	3.8	4.0	4.0	4.1	4.3
Males	0.7	5.2	5.8	6.1	6.2	6.4
Females	0.7	2.4	2.3	2.1	2.1	2.2
Whites	0.7	1.6	1.9	1.8	1.9	1.8
White Males	0.7	2.4	2.9	2.7	3.0	2.9
White Females	0.7	0.9	1.0	1.0	0.9	0.7
Blacks	0.7	23.9	24.5	26.9	25.3	29.1
Black Males	0.7	33.3	38.1	44.0	39.9	44.3
Black Females	0.7	16.1	13.5	12.6	13.3	16.7
Hispanics*	0.7	14.0	15.9	15.9	15.4	14.5
Hispanic* Males	0.7	19.5	21.8	22.5	20.0	22.5
Hispanic* Females	0.7	DSU	DSU	DSU	DSU	DSU

*Hispanics can be of any race DSU = Data statistically unreliable due to small numbers
Source: PA DOH, Bureau of Health Statistics and Research, Healthy People 2010 Statistics, 1999-2003.

The 2003 age-adjusted HIV disease death rate per 100,000 Pennsylvanians is 3.8. Blacks, black males, and black females all have significantly higher rates than the overall population.

Non-age adjusted Pennsylvania BRFSS data from 2004 show differences in HIV testing by age, race/ethnicity, and education.

Table 9-9

HIV Testing Pennsylvania Adults 18 to 64 Years of Age, 2004 BRFSS Survey[64]	
Group	**Percent Ever Tested for HIV, Excluding Tests Through Blood Donation**
All Pennsylvania Adults, ages 18 – 64	39 percent (Confidence Interval of 37% - 40%)
By Age	Significant differences were evident with 48 percent of adults aged 18–29 and 50 percent of adults aged 30–44 indicating HIV testing compared to 23 percent for adults aged 45-64.
Race/Ethnicity	Non-Hispanic Black (67%) and Hispanic (54%) adults aged 18-64 had *significantly higher* percentages of having had an HIV test than non-Hispanic White adults (34%).
Education	Adults with some college (42%) had a *significantly higher* percentage having had an HIV test than adults with a high school education only (34%)

Source: PA DOH, Bureau of Health Statistics and Research, Behavioral Health Risk Data from the Epidemiological Query and Mapping System (EpiQMS), 2004.

- In 2002, a shift in the mode of HIV transmission occurred among new AIDS cases in Pennsylvania, with heterosexual contact surpassing injecting drug use as the primary mode of transmission. In 2003, 36 percent of new cases were infected through heterosexual contact, 27 percent were infected through injecting drug use, and 26 percent were infected through men having sex with men (MSM). [65]

- Table 9-10 shows the primary modes of HIV transmission among different racial and ethnic groups diagnosed with AIDS in the last five years. MSM is the primary mode of transmission for Whites; heterosexual contact is more common among Blacks and Asians; and injecting drug use is more common among Blacks and Hispanics.

Table 9-10

Cumulative AIDS Cases by Race/Ethnicity and Major Modes of Transmission, Pennsylvania, 1999 through 2004[66]

Modes of Transmission	White Non-Hispanic		Black Non-Hispanic		Hispanic		Asian Pacific Islander		Native American		Other & Unknown		All Races	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Percent of Total Cases	2,473	29	4,972	58	1,038	12	41	.05	9	.01	23	.03	8,556	100
All Modes	2,473	100	4,972	100	1,038	100	41	100	9	100	23	100	8,556	100
Men Sex W/Men (MSM)	1,150	47	1,031	21	122	12	10	24	3	33	6	26	2,322	27
Injecting Drug Use (IDU)	572	23	1,770	36	456	44	5	12	2	22	8	35	2,813	33
Heterosexual Contact	440	18	1,770	36	319	31	19	46	2	22	8	35	2,558	30
All other modes	311	13	401	8	141	14	7	17	2	22	1	4	863	10

Source: PA DOH, Bureaus of Epidemiology and Health Statistics and Research, HIV/AIDS Biannual Summary, December 2004.

- For the statewide population, observed survival time after diagnosis with AIDS is improving with each successive year of diagnosis[67] an increasing survival time may result in an increase in the number of persons living with HIV/AIDS. An increase in the number of persons living with HIV/AIDS may increase the likelihood of new infections or re-infections,[68] and present added challenges in managing HIV/AIDS as a chronic disease or one of many chronic diseases in older adults.[69] Because minority populations are already disparately burdened by such chronic diseases as asthma, diabetes, and heart disease, an added diagnosis of HIV disease can complicate their long term disease management and quality of life.[70]

RESOURCES

Pennsylvania Public Health Efforts – Responsible Sexual Behavior

Public input at the SHIP Community Listening Sessions emphasized the added effectiveness of integrating and "bundling" services. For example, integrating family planning services, HIV and STD screening, and prevention education in community settings. The Department of Health's Sexually Transmitted Disease Program takes this approach by providing screening for syphilis, chlamydia and gonorrhea to patients in family planning, Planned Parenthood clinics, and other health care settings where sexually active men and women are examined. The STD Program also coordinates its efforts to support the delivery of services to disparate populations. More information is available at www.health.state.pa.us/std.

Pennsylvania's Strategic Plan for Sexually Transmitted Diseases
2002 – 2005
http://www.dsf.health.state.pa.us/health/lib/health/std/STDStrategicPlanForPA.pdf

STD Electronic Resource Guide – A CD-ROM prepared annually by the STD Program that provides statistics and relevant plans and reports, including treatment guidelines.

STD Program Annual Report - prepared each year by the STD Program, it provides age, race, sex and county of residence morbidity data for syphilis, gonorrhea, and Chlamydia.

HIV/AIDS Surveillance Summaries – jointly prepared by the Bureaus of Epidemiology and Health Statistics and Research.

The Division of HIV/AIDS within the Department's Bureau of Communicable Diseases has a Strategic Plan that was updated in January 2003. With the input of community partners and stakeholders through the Integrated HIV Planning Council, the strategic planning is framed around three overarching goals for Pennsylvania:
- Reduce the incidence of HIV transmission
- Increase the integration of prevention, care/support, and treatment services
- Strengthen monitoring, capacity, and evaluation

More information can be found at
http://www.dsf.health.state.pa.us/health/cwp/view.asp?a=178&q=231591

Integrated Epidemiological Profile of HIV /AIDS in Pennsylvania: An Empirical Resource for HIV/AIDS Prevention and Care Planning
http://www.dsf.health.state.pa.us/health/cwp/view.asp?A=171&Q=241041

Other State Agency and National Resources – Responsible Sexual Behavior

Pennsylvania Prevention Project (PPP)
The Pennsylvania Prevention Project (PPP) is part of the University of Pittsburgh Graduate School of Public Health. It serves as facilitator of the HIV prevention community planning process in Pennsylvania. The project provides technical assistance to the Pennsylvania Department of Health and to community based agencies in HIV prevention planning. The mission of the Pennsylvania Prevention Project (PPP) is to contribute to decreasing HIV infection and morbidity and mortality associated with HIV and AIDS through scientifically based interventions. Their website is at www.stophiv.com

American Social Health Association
http://www.ashastd.org

CDC National Prevention Information Network
www.cdcnpin.org

The National Network of STD/HIV Prevention Training Centers
The NNPTC is a CDC-funded group of regional centers created in partnership with health departments and universities. The PTCs are dedicated to increasing the knowledge and skills of health professionals in the areas of sexual and reproductive health. The National Network provides health professionals with a spectrum of state-of-the-art educational opportunities, including experiential learning with an emphasis on prevention. http://depts.washington.edu/nnptc

University of Washington Course on the Principles of STD and HIV Research
This 2-week course is held annually in July in Seattle, and offers an intensive introduction to most aspects of clinical, epidemiologic, pathogenesis, and prevention research in STD and HIV.
http://depts.washington.edu/pshr/

Guide to Sexually Transmitted Disease Resources on the Internet
Andreas Tietz, Stephen C. Davies, and John S. Moran. Clinical Infectious Diseases 2004; 38:1304-1310. (Need UW Permission)
2004 National STD Prevention Conference Webcasts
WHO Sexually Transmitted Diseases Diagnostics Initiative
CDC STD 101 in a Box Ready-to-Use Presentations

National Coalition of STD Directors
www.ncsddc.org/

National Minority Aids Council
www.nmac.org
A national organization dedicated to developing leadership within communities of color to address the challenges of HIV/AIDS.

National Alliance Of State And Territorial Aids Directors
www.NASTAD.org

HIV/AIDS Resource
www.thebody.com

Sexuality Information And Education Council Of The United States
www.siecus.org

Special Populations Vulnerable To Communicable Diseases
The Health Status of Soon-To-Be-Released Inmates: A Report to Congress
http://www.ncchc.org/pubs/pubs_stbr.vol1.html http://www.ncchc.org/pubs/pubs_stbr.vol2.html

The Diffusion of Effective Behavioral Interventions (DEBI) project was designed to bring science-based, community-and group-level HIV prevention interventions to community-based service providers and state and local health departments. Model interventions are available at www.effectiveinterventions.org

HIV Prevention Strategies

In 2003, the CDC launched its new initiative, Advancing HIV Prevention: New Strategies for a Changing Epidemic.

The initiative emphasize four essential strategies:
- HIV testing as a routine part of medical care;
- Implementation of new models for diagnosing HIV outside of traditional medical settings
- Prevention of new HIV infections by working with persons diagnosed with HIV and their partners
- Decreasing perinatal HIV transmission, primarily through the integration of routine HIV testing of all pregnant women or any infant whose mother was not screened

Demonstration projects are currently underway to test the feasibility of these strategies and to determine the best way to implement the strategies on a wider scale. Three community-based organizations in Philadelphia are involved: Action AIDS, Congreso de Latinos Unidos, and Philadelphia Community Health Alternatives. Information is available at www.cdc.gov/hiv/partners/ahp_award2003.htm

The Department of Health is also meeting the challenge of stemming and reducing infection by moving toward accepted, science-based HIV prevention programs as the only strategy for accomplishing this end. Requests for Application were issued to the county and municipal health departments in 2005 reinforcing the need to utilize CDC approved individual, group and community level interventions with proven effectiveness. This new direction in prevention will begin July 1, 2006. It is expected that the Department will examine the feasibility of utilizing this approach with other contractors engaged in the work of HIV prevention as well.

Partnership Activities – Responsible Sexual Behavior

Below are some examples of what other SHIP-affiliated partnerships are doing across the Commonwealth.

- To address the outbreak of syphilis in the Westmoreland County area that began late in 2001, a community partnership was formed in collaboration with the District Health Office and conducted a public forum to address the issue.

- The Southcentral Health District has an active STD Task Force that periodically meets to address issues affecting the community, including training needs.

Immunization

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