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HIV/AIDS Education in the Public High Schools of Three Counties in Southwestern Pennsylvania

Timothy Sheets

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HIV/AIDS EDUCATION IN THE PUBLIC HIGH SCHOOLS
OF THREE COUNTIES IN SOUTHWESTERN PENNSYLVANIA

by

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Submitted in partial fulfillment of

the requirements for the degree

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Abstract

Infection by HIV, the virus that causes AIDS, continues to grow worldwide. The only way to stop infection is to educate the population on prevention by identifying methods of transmission and behaviors that put a person most at risk. Schools are an effective place to teach young people about HIV. The Pennsylvania School Code requires that HIV/AIDS education be provided to all public school students while details of the instruction are locally determined. This study investigated HIV/AIDS education in three counties of southwestern Pennsylvania: what was included in the curricula, what was taught to the students, and how the content compared to recommendations by the Centers for Disease Control. Surveys based on CDC guidelines were mailed. A demographic profile of those responsible for the HIV/AIDS instruction was developed and information about the schools was collected. The individuals providing the HIV/AIDS instruction were classroom teachers who were certified in different areas with a variety of experience. The subject of HIV/AIDS was presented to a range of grade levels and was consistently taught in health classes. The teachers received training from different sources; some did their own research and some received no training. Analysis revealed differences and inconsistencies among the HIV/AIDS curricula. HIV/AIDS education did not occur in all of the schools. All of the survey items showed a range of responses; none of the content statements was included by all of the schools and three were taught in all of the schools. The data indicated the various states of HIV/AIDS education, which needs to be more complete and uniform. The results of this study indicate need for further research. A similar study could be conducted in all of the districts throughout the state of Pennsylvania and/or include other states. Further study could also include the

demographics of the instructors, their background and training, the methods of instruction, and how much time was devoted to different topics. The information from this study and that collected from future studies could help school districts to develop new or to strengthen current HIV/AIDS curricula.

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Written with the help of many;
written, hopefully, in order to help
many, some, or even one;

written with appreciation to
family, friends, and colleagues;

and in loving memory of Mim,
because she knew I could.

CHAPTER 1

INTRODUCTION TO THE STUDY

In 1996, the Office of National AIDS (Acquired Immunodeficiency Syndrome) Policy reported to President William Clinton that an estimated one in four new infections with the Human Immunodeficiency Virus (HIV) in the United States occurred among people under the age of twenty-one (Fleming, Bustos, Danford, Kofman and Williams, 1996). Statistics such as this identified the severity of HIV infection and AIDS among the youth of the country. According to the Centers for Disease Control and Prevention (CDC), at least one American under the age of twenty-one becomes infected with HIV every hour of the day. Until a vaccine is found, the only way to prevent new HIV infection is through education (Fleming et al. 1996).

Officially identified in 1982, AIDS is the most severe manifestation of HIV infection. AIDS weakens the human body's immune system and allows it to become susceptible to opportunistic infections. According to the CDC, the occurrence of these predictor infections, the presence of HIV infection, and a low T-cell count constitute an AIDS diagnosis. The history of the disease and the importance of providing education to prevent further infection is detailed in Chapter 2: Review of the Literature.

As most social institutions in the United States have experienced changes throughout their existence, public education has also changed. One critical revision has been content. For example, in the eighteenth and nineteenth centuries, American society expected students to develop competencies in reading and writing. The twentieth and twenty-first centuries have added subject areas along with the teaching of various additional skills. Once unheard of in schools, sex education has become a standard part of school curricula throughout the country. Currently, 46 states recommend or mandate sex education as part of their curriculum (Britton, DeMauro and Gambrell, 1992). This

subject includes information about sexually transmitted diseases, including HIV/AIDS. In a recommendation to the federal government, Fleming, et al (1996) reported that considering the number of young people who are diagnosed with HIV/AIDS, comprehensive HIV/AIDS education, as part of the health curriculum, should be available to all young people throughout the United States. Evidence of HIV infection among teenagers is identified by the number of AIDS cases among people in their twenties. A majority of AIDS cases develop from an HIV infection acquired within ten years; therefore, most AIDS patients in their twenties were likely to have been infected when they were teenagers. Unless education and prevention programs are made available and accessible to young people, the spread of HIV infection at this age level is likely to continue.

In Pennsylvania, HIV/AIDS education is required for all children attending public schools at all grade levels. On January 16, 1999, the Pennsylvania State Board of Education adopted a revised Chapter 4 of the State Code. Section #4.29 (Appendix A) of the Pennsylvania Education Act requires “instruction regarding prevention of human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) shall be given for primary, intermediate, middle school, and high school education.” Although the details of instruction are to be locally determined by each district, the Pennsylvania Department of Education stressed to all educators the need to educate Pennsylvanians about HIV/AIDS and to maintain up-to-date policies on HIV/AIDS. Directed at establishing a basic understanding of the disease, this targeted education is designed to ensure that adequate safety precautions are taken, reduce fears of transmission, and encourage all to avoid behaviors that may put them at risk for contracting and spreading HIV/AIDS.

Significance of the Study

AIDS and infection by HIV, the virus that causes AIDS, were identified in 1982. Because the rate of infection has continued to grow worldwide and, at this time, there is no cure, the only way to stop the spread of infection is to educate the population on the prevention of spreading the virus (Fleming et al, 1996). This can be accomplished by identifying the methods of transmission and the behaviors that can put a person most at risk of infection. In the 1996 report, Fleming stressed the fact that schools are a highly effective and appropriate place to teach young people HIV prevention information and skills before they begin the behaviors that put them at risk for HIV infection. In 1999, the Pennsylvania Department of Education adopted section 4.29 of the State Code that requires public schools to provide HIV/AIDS education.

No research has been found on local HIV/AIDS instruction in the state of Pennsylvania. The state Department of Health reported that since the beginning of the AIDS epidemic over 28,000 residents were diagnosed with AIDS and over 13,000 had died placing the state as seventh highest in the nation with cumulative AIDS cases (HIV/AIDS Surveillance, 2002). This study focused on HIV/AIDS curricula used in 25 public high schools in three southwestern counties in Pennsylvania: Fayette, Greene, and Washington. These counties have a combined population of close to 400,000 and have reported 187 cases AIDS from 1980 through 2002 with 124 deaths (HIV/AIDS Surveillance, 2002). Of the 67 counties in Pennsylvania, Washington County places 23rd highest with 106 reported cases of HIV/AIDS, Fayette County places 34th with 57 cases, and Greene County places 48th with 24 cases (HIV/AIDS Surveillance, 2002).

Young people enter high school within the same time period as the onset of puberty. It is during this time that a number of teenagers become sexually active and may engage in sexual and other behaviors that put them at risk of HIV infection. This

study will investigate how these rural public high schools in three counties are meeting the Pennsylvania law by surveying those responsible for providing HIV/AIDS education in the schools and comparing the content of the instruction to the “Guidelines for Effective School Education to Prevent the Spread of AIDS”(Appendix B), which was issued in 1988 by the CDC. Surveying what was included in the curricula, what was being taught in the schools, and how the content compared to the recommendations of the CDC, provided information that may prove valuable to other schools as they develop or improve HIV/AIDS curricula.

Research Questions

This study investigated the content of HIV/AIDS curricula in 25 public high schools of southwestern Pennsylvania. The information gathered from each district identified how curricula from the high schools in three counties of the Commonwealth were meeting the Pennsylvania law and how it compared to the recommendations provided by the Centers for Disease Control.

The research questions for this study included the following:

1. What are the established HIV/AIDS curricula in each of the 25 public high schools in Fayette, Greene, and Washington counties?
2. What parts of the established curricula are being taught to the high school students?
3. How does the curricula compare to the recommendations of the CDC?
4. What school personnel are responsible for the HIV/AIDS education and what type of training and education have they received?

Elements to be Investigated

The Pennsylvania State Code delineates the specifics of education in the Commonwealth. In addition to the description of core courses such as math, science, and other traditional academic classroom subjects, details for physical education, vocational instruction, and special education are provided. While each school is given the responsibility of designing its own specific curriculum, section 4.29 of the code clearly addresses the requirement for schools to provide HIV/AIDS instruction.

This project included a review of the literature to examine the need for HIV/AIDS prevention education in the schools. A letter (Appendix C) was sent to the principals of each of the 25 public high schools in Fayette, Greene, and Washington counties requesting the names of teachers and/or other personnel who were responsible for providing HIV/AIDS instruction. These staff members were sent a survey (Appendix D) asking them to identify the established HIV/AIDS curriculum in each school and what was taught to the students. The information received from the surveys was collected, reported, and compared to the CDC guidelines (Appendix B). Also from these surveys a demographic profile of those responsible for HIV/AIDS instruction was developed and includes academic background, teaching experience, and specific HIV/AIDS training.

Delimitations and Limitations

Delimitations placed on this study was the number of school districts contacted to share information about their HIV/AIDS instruction. This number was limited to the 25 public school districts in Fayette, Greene, and Washington counties, Pennsylvania with each having one high school.

This study was limited by the willingness of school personnel to respond, the number of responses received from the districts, and the honesty and thoroughness of

those who completed the survey. Measures were taken to obtain completed surveys from all schools and confidentiality was kept.

Definition of Terms

Acquired Immunodeficiency Syndrome (AIDS) - The most severe manifestation of infection with the Human Immunodeficiency Virus (HIV). There are numerous opportunistic infections and neoplasms (cancers), which, in the presence of HIV infection, constitute a diagnosis of AIDS. In addition, a CD4+ (T-cell) count below 200 per cubic milliliter in the presence of HIV infection constitutes an AIDS diagnosis. An average CD4+ cell count in a healthy person is 1150 per cubic milliliter (HIV and its Transmission, 1999).

CD4 or CD4+ (T) cells - White blood cells killed or disabled during HIV infection.

These cells normally orchestrate the immune response, signaling other cells in the immune system to perform their special functions (Why Should We Care, 2000).

Centers for Disease Control and Prevention (CDC) - This federal agency is responsible for the collection of data concerning diseases in the United States including assessing the status and characteristics of the HIV/AIDS epidemic in the country.

Gay Related Immune Deficiency (GRID) – After several cases of Pneumocystis Carinii Pneumonia and Kaposi's Sarcoma were discovered in gay men, doctors determined that an infectious agent, which attacked a weakened immune system, was being passed from gay men and from drug addicts. GRID was the name given to the disease. It was one of the first names given to AIDS (The History of AIDS 1981 – 1986, 2001).

Human Immunodeficiency Virus (HIV) - The retrovirus isolated and recognized as a cause of immune suppression and/or AIDS. HIV attacks the body's immune system leaving the body unprotected against infections and diseases (HIV and its Transmission, 1999).

Kaposi's Sarcoma – An HIV indicator illness which causes dark blue lesions, which can occur in a variety of locations including the skin, mucous membranes, gastrointestinal tract, lungs, or lymph nodes. The lesions usually appear early in the course of HIV infection (The History of AIDS, 1981 – 1986, 2001).

Pneumocystis Carinii Pneumonia (PCP) – PCP is a parasite that infects the lungs and is the most frequent HIV associated opportunistic infection in industrialized nations. The symptoms are mainly pneumonia along with fever and respiratory symptoms. Definitive diagnosis requires microscopy of bodily tissues or fluids (The History of AIDS 1981 – 1986, 2001).

Retrovirus - HIV and other viruses that carry their genetic material in the form of ribonucleic acid (RNA) and that have the enzyme reverse transcriptase. Like all viruses, HIV can replicate only inside cells, commandeering the cells' machinery to reproduce (HIV and its Transmission, 1999).

RNA (Ribonucleic acid) - A nucleic acid, found mostly in the cytoplasm of cells that is important in the synthesis of proteins. Some viruses, like HIV, carry RNA instead of the more usual genetic material DNA (HIV and its Transmission, 1999).

T-Cell (T lymphocytes) - A thymus-derived white blood cell that participates in a variety of cell-mediated immune reactions. Three fundamentally different types of T cells are recognized: helper, killer, and suppressor. The helper cells are CD4+ cells (HIV and its Transmission, 1999).

Virus - Organism composed mainly of nucleic acid within a protein coat, which can only be seen with an electron microscope. During the stage of their life cycle when they are free and infectious, viruses do not carry out the usual functions of living cells. However, when they enter a living plant, animal, or bacterial cell, they make use of the host cell's chemical energy and protein- and nucleic acid-synthesizing ability to replicate themselves (HIV and its Transmission, 1999).

Zoonosis – The process of a disease transferring from lower animals to man under natural conditions (Diamond, 1992).

Summary

In order to reduce the continued spread of HIV and AIDS, education and prevention programs need to be made accessible to young people. In 2000, 31,293 cases of AIDS were reported for Americans between the ages of 13 and 24 (Young People at Risk, 1999). By meeting the requirements of Pennsylvania law, public high schools would bring this information to their students. This study investigated if, and how, the 25 public high schools in Fayette, Greene, and Washington counties, Pennsylvania, provided education about preventing the spread of HIV/AIDS. Schools were asked to identify their established curricula, what was being taught to the students, and to provide demographic information on the personnel delivering the instruction. The curricula information that was received was reviewed and compared to guidelines established by the CDC.

CHAPTER 2

REVIEW OF THE LITERATURE

History of HIV/AIDS

The search for the origination of the Human Immunodeficiency Virus (HIV), and subsequently, Acquired Immunodeficiency Syndrome (AIDS), is crucial in fighting the disease. Understanding where the virus came from and how it evolved can lead researchers to develop prevention programs and treatments (Garry et al. 1998). One of the obstacles in developing effective programs and treatments is what researchers call HIV's "star burst" phylogeny or the rapid genetic variation that the virus has undergone since its beginning. Determining what enabled the virus to explode into a pandemic could also help prevent future public health epidemics (Plant, 1998).

Since AIDS was initially identified in 1982, researchers have made significant progress in understanding the disease. Two distinct types of HIV have been identified: HIV-1 is the strain of the virus that is responsible for the worldwide epidemic; and HIV-2, the less violent strain, is largely confined to West Africa and Asia. Research has discovered that both strains are derived from a common virus that emerged before the 1940s. Although a definite source is still unknown, the theory that the virus passed from animals to humans prevails (Zhu, Korber and Nahinies, 1998). Scientists have long recognized the ability of certain viruses and diseases to pass from animals to humans through a process called zoonosis. Once a human is infected, the disease may then be passed from human to human. The Ebola virus and the Marburg filovirus are two diseases that were passed to humans through zoonotic transfer. Several theories exist about this method of transference of the HIV virus (Plant, 1998). Most researchers concur that the original human infection came from a non-human

primate species. Although it has not been proven that HIV came from primates, a Simian Immunodeficiency Virus (SIV) has been known to infect humans and certain SIVs are closely related to HIV. (Doolittle, 1989) The closest simian virus to HIV-1 that has been discovered exists in certain chimpanzees (Huet, Cheyneir, and Meyerhans, 1990). In February 1999, researchers from the University of Alabama studied tissue from a chimpanzee and found that it carried a simian virus that was almost identical to HIV-1. This chimpanzee came from a subspecies of chimpanzees indigenous to West-Central Africa. (Gao, Bailes, Robertson and Chen, 1999) Even though it was similar, it is not certain that this virus originated HIV-1. It is therefore possible that a third, and yet unidentified, primate species began the infection in both chimpanzees and humans (Sharp, Robertson, Gao, & Han, 1994). HIV-2 is nearly identical to an SIV found in a type of African monkey. This specific monkey, the sooty mangabey, which is also known as the green monkey, lived in West Africa where most of the HIV-2 cases have been reported (Doolittle, 1989).

One theory argues that HIV could have been contracted directly by humans from sooty mangabey monkeys and chimpanzees. The African people hunt and eat wild monkeys and keep young monkeys as pets (Froland et al. 1988). Africans who were scratched or bitten by monkeys, obtained infected monkey blood on a skin wound while preparing a dead monkey for consumption, or consumed undercooked monkey meat could have contracted the disease (Diamond, 1992).

A second theory, and one of the most controversial, is that medical science was responsible for the transference of HIV from animals to humans. Polio vaccines, prepared by using monkey kidneys, were given to many Africans in the 1950s. It is theorized that the vaccines were contaminated with HIV even though many vaccine batches were tested and HIV was not detected (Froland et al. 1988). Scientists theorize

that monkeys were able to remain healthy while carrying the virus because they adapted to it over thousands of years. Transmission from chimpanzees to humans only occurred within the last century, which explains why humans have not yet adapted (AIDS Evolved, 2000).

A third theory also involves medical science. In the 1950s disposable plastic syringes were introduced worldwide, the use of which made guaranteed sterilization possible and dropped the cost of syringe production. As a result, medical use of injections went up and doctors were able to use injections to administer medicine, vitamins, and other common drugs. In poor economic regions however, the small cost of plastic syringes was still great and they could not be sterilized as the plastic melts. Since new syringes were not available or affordable, they were not disposed of but rather used repeatedly which spread viruses, including HIV, and other infections (Moore, 2004).

But why, since Africans have been handling monkeys for thousands of years, was the origin of AIDS apparently so recent? Several hypotheses exist. The first is that zoonosis, or the cross-species transmission of the virus, occurred by coincidence and for the first time within the last century. A second possibility is that conditions for the efficient spread of the human HIV strains did not exist until more recently. This theory places the origin of AIDS at the time of colonial withdrawal from central Africa during the early part of the 20th century. Under colonial rule, authorities kept things under control but chaos erupted after withdrawal and provided conditions for the establishment of a disease. During this time for example, forced labor camps existed which had poor sanitation, poor diet, and high labor demands. Also, medical efforts were being made to eliminate small pox and sleeping sickness but this was done by reusing a limited number of syringes (Moore, 2004). Traditional societies in Africa had prohibitions against the frequent change of sexual partners, so HIV had little chance to spread. However, the

African continent did not remain a placid, sedentary, and traditional society, and the same social prohibitions did not continue.

A third explanation involves a program conducted in 1922 when malaria researchers injected the blood of sooty mangabey monkeys into humans to test whether primate malaria could infect humans. The possibility also exists that other medical experiments may have been conducted and not documented. If any of the monkeys carried an SIV, the HIV-1 and HIV-2 viruses could then have been transferred to humans (Diamond, 1992). Researchers argue that whatever the single theory or combination thereof, the origin and spread of HIV was not fundamentally natural given that humans had failed to acquire HIV from primates during the thousands of years of exposure. Instead, the emergence of HIV involved social change in one form or another (Moore, 2004).

No single theory of origin or spread of HIV infection has been proven, but scientists have confirmed several cases prior to 1981. The earliest known AIDS related deaths, later recognized by studies performed on frozen and stored blood samples, occurred prior to 1969. Given the odds against the preservation of blood and tissue samples from early AIDS victims, the first deaths probably occurred sometime prior to 1959. The actual HIV infections would have preceded those first deaths by a decade, the typical interval between infection and death today. Most scientists believe that AIDS arose in central or East Africa because this is where later diagnosed cases first began to appear frequently, where the AIDS epidemic is now furthest advanced, and where the related simian viruses occurred naturally (Diamond, 1992).

In 1988, HIV was reportedly found in tissue samples from a Norwegian sailor, his wife, and daughter who all died of AIDS-like symptoms in 1976. The sailor had visited African ports and had contracted sexually transmitted diseases at least twice. Preserved

tissue samples from the entire family were tested and were found to be infected with a strain of HIV-1 common to West Africa (Froland et al, 1988). In the United States, an African-American from St. Louis died in 1969 of AIDS-like symptoms. HIV was detected in frozen tissue samples that had been taken from the teenage male (Garry, et al, 1988). HIV was also detected in plasma taken in 1959 from an adult male living in what is now the Democratic Republic of Congo (Sharp et al. 1994).

Once HIV was transmitted from animals to humans, there were several factors that contributed to the sudden spread of infection. HIV and AIDS apparently remained in Africa until jet travel, large cities, and the sexual revolution allowed it to leave the isolated areas and spread worldwide (AIDS Evolved, 2000). Analyses of several early cases of AIDS showed infected individuals were either direct or indirect sexual contacts of “Patient Zero,” a Canadian flight attendant named Gaetan Dugas.

In the blood industry in the United States and other countries, donors were once paid for their blood. These donors included intravenous drug users. Another factor involving the blood industry was Factor VIII, which was produced for hemophiliacs by pooling blood from thousands of people. The donated blood and Factor VIII were then distributed worldwide. The increase in drug use also helped to increase the spread of infection. Increased availability of heroin and plastic syringes provided another route for infection (Sharp et al 1994).

According to the American Association for World Health (AAWH), additional factors contribute to the spread of HIV:

1. Cultural expectations of manhood can promote risk-taking behaviors among men and boys;
2. Poverty and unemployment may increase sexual risk-taking, especially for men seeking to compensate for a perceived loss of manhood and power;

3. Isolation, such as that caused by being in prison, homelessness, migrant work or living in the military, may lead to sex with multiple partners, unprotected sex, and drug use (HIV Infection and AIDS, 2000).

In 1981, a technician for the CDC noticed an unusually high number of requests for the drug pentamidine, which is used in the treatment of pneumocystis carinii pneumonia (PCP). Further research into this high demand led to a report of PCP occurring in five Los Angeles gay men. The search for the cause of the cases of PCP led to the discovery of cases of Kaposi's Sarcoma and other cancers occurring in gay men in New York (The History of AIDS 1981-1986, 2001). These particular conditions were not usually found in people with healthy immune systems, and doctors determined the cause to be an infectious agent, which took the opportunity to attack a weakened immune system (Where did HIV come from?, 2003). Studies of the patients' sex practices and similar symptoms occurring in blood transfusion recipients clearly showed an infectious agent as the cause of infection (Overview of HIV/AIDS, 2002). Later that year the first cases of PCP appeared in drug addicts.

In 1982, a syndrome called GRID (Gay Related Immune Deficiency) was used to classify this collection of symptoms. Scientists began to understand that it was caused by an infectious agent and that it was possibly spread through blood. During the same year, the Wall Street Journal ran its first article on the subject and reported that GRID was also beginning to affect some women and male heterosexual drug users. Others being affected included Haitian refugees in Miami and hemophiliacs. It was then known that the syndrome not only affected gay men, so it was renamed Acquired Immune Deficiency Syndrome or AIDS, and it was discovered to be an illness resulting from a failure, or deficiency, of the immune system. The term "acquired," stemmed from the fact that it was an illness that was acquired from someone else. By the end of 1982 the first blood

transfusion recipients and babies were diagnosed with AIDS. Also by the end of the year, AIDS had been reported in 14 nations worldwide. In France, doctors believed that they had isolated a new virus, which was the cause of AIDS and called it lymphadenopathy-associated virus or LAV (The History of AIDS 1981-1986, 2001).

In 1983 two separate AIDS epidemics were identified in Europe: one linked to Africa and one linked to gay men who had visited the United States. Also in 1983, reports of AIDS occurring in children led to the incorrect assumption that the disease could be transmitted through casual household contact. Through considerable education, the public was informed that transmission occurred only in very specific ways and that infection was not caused by casual contact. As more children were diagnosed, it was discovered that children became infected through their mothers in utero or during birth. By the end of 1983, AIDS was reported in 33 countries with more than 3,000 cases reported in the United States (The History of AIDS 1981-1986, 2001).

In 1984 the United States government announced that Dr. Robert Gallo at the National Cancer Institute claimed that he had isolated the retrovirus that caused AIDS and named it human T-cell lymphotropic virus - type III (HTLV III). This same year, Gaetan Dugas, the flight attendant considered “patient zero,” and responsible for spreading the virus throughout the United States, died. The number of Americans diagnosed with AIDS had risen to more than 7,000, and the disease was reported in 51 countries (The History of AIDS 1981 – 1986, 2001).

In 1986, it was discovered that the LAV and HTLV III viruses were the same; both names were dropped and replaced by Human Immunodeficiency Virus or HIV (The History of AIDS 1981-1986, 2001). It was also determined that HIV infection had been the only common factor shared by persons diagnosed with AIDS and that the virus was found to be spread through blood-to-blood, sexual contact, and the sharing of

contaminated drug needles. It was also discovered that infected pregnant women could pass HIV to their babies during pregnancy, delivery, and breast-feeding. Therefore, HIV could be spread through bodily fluids: blood, semen, vaginal fluid, breast milk, cerebrospinal fluid, and amniotic fluid (Overview of HIV/AIDS, 2002).

In 1987, then President Ronald Reagan gave his first speech on AIDS, and by this time, 36,000 Americans had been diagnosed with the disease and 20,000 of those had died. During that year, the United States became the last major western industrialized nation to launch a coordinated education campaign about the disease. This project distributed 107 million copies of “Understanding AIDS,” a booklet written by Surgeon General C. Everett Koop (The History of AIDS 1987-1992, 1999). This booklet, published in 1988 through the United States Department of Health and Human Resources, covered such topics as how HIV is transmitted and how it is not, which behaviors put people at risk of HIV infection, the correct use of condoms, information on AIDS testing, drug use, and how to talk to children about HIV and AIDS.

By 1990, over 307,000 AIDS cases had been reported worldwide. These were only reported cases. The actual number was estimated to be closer to one million, and an additional eight to ten million people were estimated to be infected with HIV. In 1992, AIDS became the leading cause of death among men between the ages of 25 and 44 and by 1994, AIDS had become the leading cause of death among all Americans in that age group; over 250,000 people had died since 1981 (The History of AIDS 1993-1997, 1999).

In 1996, the Joint United Nations Program on AIDS (UNAIDS) reported that the number of new HIV infections had declined in the United States, as a result of safer sex practices, although the rate of infection worldwide continued to grow (The History of AIDS 1993-1997, 1999). Advancements in drug treatments have significantly lowered the number of AIDS-related deaths and slowed AIDS incidence in recent years, but the

rate that Americans are becoming infected with HIV had not diminished (Be a Face for Change, 1998).

In 1998 there were a total of 27,860 reported cases of AIDS among teens and young adults in the United States. But in a study conducted by the CDC, young people accounted for a much greater portion of HIV than AIDS cases. While the number of new AIDS cases has declined in the United States, there has not been a comparable decline in the number of new HIV cases among youth between the ages of 13 and 24. When HIV infection rates increase among the nation's youth it indicates a problem with rising HIV rates among all age groups because younger Americans are the first to initiate high-risk behavior. Research supports the theory that Americans, particularly young people, are returning to the unsafe sex practices that first characterized the AIDS epidemic (AIDS is Spreading Rapidly, 1999).

Despite declines in new AIDS cases, the rate of new HIV infections remains high; 40,000 new HIV infections were reported in 1999. Fifty percent of all new infections were among young people under the age of 25. As a result of new drug treatments, HIV positive people are staying healthy longer and the onset of AIDS is delayed. While the number of AIDS cases and the number of AIDS related deaths have dropped, the number of HIV infections remains unchanged (Why Should We Care, 2000). Health officials continue to express concern over findings that indicate high rates of risky behavior and HIV infection.

In 1999, HIV was the fifth leading cause of death for Americans between the ages of 25 and 44. CDC surveillance data from 25 states from January 1996 through June 1999 indicated that young people (ages 13 - 24) accounted for a much greater proportion of HIV infection (13%) than AIDS cases (3%). These statistics show that even though

new AIDS cases are declining, there has not been a comparable decline in the number of newly diagnosed HIV cases (Young People at Risk, 1999).

At the International AIDS Conference in 2000, the CDC reported that the percentage of teenagers in the United States having sex, having four or more sexual partners, and those having sex before the age of 13 had decreased, while the percentage of those using condoms had increased. Researchers attribute these changes to the repeated dual message of abstinence and condom use (U.S. Teens Getting Smarter, 2000). At this 13th annual conference held in Durban, South Africa, Dr. Roy M. Anderson of Oxford University called AIDS “undoubtedly the most serious infectious disease in recorded human history” (AIDS Epidemic Wreaking Havoc, 2000). The presenters at the conference announced that 34 million people were infected with HIV worldwide (AIDS Conference Convenes in Africa, 2000).

In August of 2001, the Washington Post reported at the National HIV Prevention Conference that the number of AIDS cases dropped sharply in the mid 1990s then remained stable between mid-1998 and mid-2000 (Era of Decline of US AIDS Cases, 2001). In 1999 only 156 cases of transmission from infected mothers to new born infants were reported; a record low.

In 2002, AIDS diagnosis increased for the first time in ten years with over 42,000 cases reported in the United States, up 2.2% from 2001 (Strategy Shifts, 2003). Both the problem and the answer to this increase lie in prevention. Since the rampant spread of AIDS in the 1980s and the decline that occurred in the 1990s, Americans have come to view HIV and AIDS differently: the new generation of sexually active Americans do not remember the devastation of the AIDS epidemic, there has been an increase in risky sexual behavior, Americans have become complacent about safe sex practices, and many Americans feel AIDS has become an African epidemic. According to Dr. Jim Curran,

dean of the Rollins School of Public Health at Emory University, complacency about the disease is only one factor that may lead to a continued rise in the number of cases. Other factors include the fact that there are more people infected than ever, there is a lower death rate, and there has been a rise in infection rates among young gay men (Poll: AIDS Threat Concerns, 2004).

Proper monitoring of HIV infections is critical in evaluating the goal of the CDC to reduce the number of infections from 40,000 a year to 20,000 a year by 2005. The CDC has only recently begun tracking rates of HIV infection along with the number of AIDS cases. A large number of HIV infections were initially reported, but then the number of cases decreased. The number of infections in later reports continued to decrease, better reflecting newly diagnosed cases. But newly reported HIV diagnoses do not necessarily reflect new infections (HIV/AIDS Surveillance, 2002).

The latest statistics available from the Pennsylvania Department of Health report that from January 1, 1980 through December 2002, 28,136 Pennsylvania residents were diagnosed with AIDS and over 13,000 had died (HIV/AIDS Surveillance, 2002). This number of AIDS cases placed the state as the seventh highest state with cumulative AIDS cases. During that same time period, Fayette County (total population 40, 672) reported a total of 57 individuals diagnosed with AIDS and 35 had died, Greene County (total population 150,000) reported a total of 24 cases with 11 deaths, and Washington County (total population 208,000) reported a total of 106 individuals diagnosed with AIDS and 65 had died. Following the national trend, the number of cases varied in the counties with seven new cases in 1997, three in 1998, six in 1999, and twelve new cases in 2000 (HIV/AIDS Surveillance, 2002).

Transmission of HIV Infection

The CDC defines AIDS in an adult or adolescent of 13 years of age or older as the presence of one out of 26 conditions indicative of severe immunosuppression associated with HIV infection. These conditions rarely cause harm in healthy individuals and were extraordinarily rare in the United States before the appearance of HIV (The Evidence that HIV causes AIDS, 2000). HIV progressively destroys the body's ability to fight infections and certain cancers by leading to the destruction and/or functional impairment of the CD4 or T cells of the immune system. AIDS is diagnosed when the T-cell count falls below 200 cells per cubic millimeter of blood. An average T-cell count in a healthy person is between 600 and 1500 cells per cubic millimeter of blood (Why Should we Care, 2000).

A body infected with HIV produces antibodies. HIV tests detect these antibodies, rather than the virus itself; an HIV-negative test indicates that no antibodies are present. HIV antibodies can be detected within three months after infection and most people who are infected will test positive within six months (Surgeon General's Report, 1994). A seropositive result on an HIV test means HIV antibodies are present in the blood stream and the person is identified as HIV positive. HIV may live in the body for years before symptoms appear and a positive HIV test does not mean the person has AIDS (Be a Face for Change, 1998). A physician makes an AIDS diagnosis using clinical criteria including CD4 (T-cell) counts and the presence of indicator illness such as PCP and Kaposi sarcoma (The History of AIDS 1981-1986, 2001). The onset of AIDS may take up to ten or more years to occur.

Infection with the HIV virus occurs only through body fluids in certain circumstances: unprotected intercourse either vaginally, anally, or orally with an infected person; sharing needles and/or syringes (primarily for drug injection) with someone who

is infected; and a pregnant woman infected with HIV can transmit the virus to her child before, during, or after the birthing process, including through breast feeding. HIV may also be spread through transfusions of infected blood, but this is significantly less common and now occurs only rarely in countries where blood is not screened for HIV antibodies. In health care settings, workers have rarely been infected with HIV after being pierced with needles containing HIV-infected blood, or less frequently, after infected blood penetrates a worker's open wound or a mucous membrane. There has been only one instance of a patient being infected by a health care worker and a dentist in the United States infected six patients. All reported cases, which suggest new or potentially unknown routes of transmission, are thoroughly investigated by state and local health departments, with assistance, guidance, and laboratory support from the CDC. No additional routes of transmission have been recorded (HIV and its Transmission, 1999).

Unprotected (unsafe) intercourse is defined as sex without a latex condom. The virus can enter the body through the vagina, penis, and rectum. Although the risk is not as high, infection can occur by getting semen, vaginal secretions, or blood into the mouth. Risk increases with the presence of sores or cuts in the mouth. Persons already infected with sexually transmitted diseases, such as gonorrhea or chlamydia, have a higher risk of HIV infection (Surgeon General's Report, 1994).

When an intravenous drug user injects drugs into the body, some of the person's blood may remain in the needle or syringe. If someone else re-uses the same needle or syringe, HIV may directly enter the blood stream. A baby born to an HIV infected woman will test HIV-positive at birth because the positive antibody is transferred from the mother. However, every baby may not actually be infected; those not infected will test negative within a year and a half. It may take anywhere from a few weeks to many

years for symptoms of infection to appear. Symptoms usually include fever, diarrhea, weight loss, fatigue, and enlarged lymph glands (Surgeon General's Report, 1994).

From 1978 to 1985, persons who received contaminated blood through transfusions reported cases of HIV infection. In 1983, all blood donors in the United States began to be questioned about their risk factors for HIV infection and persons with a high risk of being HIV infected were no longer permitted to donate. In 1985 it became possible to test donated blood for HIV and other viruses. Infected blood is safely discarded and the donors are told confidentially of their HIV infection. Donors are not at risk of becoming infected if new, sterile needles are used for each blood donation. Likewise, donated organs and tissues for transplants are tested for HIV as are sperm donations used for artificial insemination (Surgeon General's Report, 1994).

HIV/AIDS Infection in Adolescents

Adolescence is the stage of development when most young people become intrigued with sexual relations and experience sexual feelings. Most adolescents have a sense of invincibility that may result in risky behavioral experimentation and a common belief among persons in the age group that young people are not at risk of HIV infection. A combination of unsafe sexual and illegal drug practices, along with inadequate prevention and a lack of support services, can cause the further spread of HIV infection within this age group.

Many teenagers are still concrete thinkers. They think in terms of the present, and often have difficulty conceiving the possible risks of their behavior. Many believe that they will never become infected with HIV or develop AIDS. Teenagers may learn best when they can actively participate in the education process and the inclusion of role-play

promotes independent thinking. HIV/AIDS prevention programs must consider all of these psychological and cognitive influences in order to be effective.

There are significant risk factors related to HIV infection within the adolescent population. Obviously, not all teenagers are the same nor do they mature at the same rate, and chronological age may not indicate an individual's developmental stage. Adolescence is a unique developmental period and there are significant social and cognitive differences between early, middle, and late adolescence. The risk factors for HIV infection have been well documented and the majority of diagnosed cases among adolescents were transmitted by sexual behavior or IV drug use. This is the time that sexual activity begins and many teens engage in sexual activities that transmit HIV. The age a teen becomes sexually active may, in turn, increase the number of sexual partners they have and the number of potential exposures to STDs.

Statistics confirm an increasing rate of HIV infection among adolescents. The National Institute of Allergy and Infectious Diseases identified HIV/AIDS as the sixth leading cause of death in 15 - 24 year olds and the seventh leading cause of death in 5 - 14 year olds. To understand when HIV infection occurred, it is important to remember that, as a result of the developmental phases of AIDS, it can take up to ten years to develop and to be diagnosed. These facts illustrate the importance of advocating prevention to young people, as well as information and resources need to be available so that individuals can protect themselves and others from HIV infection (Coates and Makadon, 1998).

One out of every seven teens in the United States contracts a sexually transmitted disease annually. Many persons with HIV also have a history of a previous STD. Only one-third of sexually active teens use contraception regularly, and fewer than one-fourth of those who use contraception use condoms. Inconsistent use of condoms during anal,

vaginal, and/or oral sex is often the norm. Many teenagers experiment with same sex or opposite sex partners, often engaging in anal intercourse. Unprotected anal intercourse is the highest risk behavior associated with HIV transmission.

Sexual abuse is another source of HIV transmission. Teenage boys as well as girls are often rape victims. Approximately one million teenagers run away from home each year and many become involved in drug abuse or prostitution to pay for drugs, food, or shelter. Substance abuse is another source of HIV transmission in the adolescent population. The use of drugs, including alcohol, leads to impaired judgment, and teenagers may exchange sex for drugs or may share needles. The sharing of needles and syringes among teens can occur for reasons other than IV drug use; teens often have body piercing sessions where the needles are re-used (Coates and Makadon, 1998).

At one time, populations, such as gay men or IV drug users, were used to describe HIV risk, but today educators prefer to describe risks by behaviors. The need for AIDS awareness and understanding HIV risks by adolescents is clear: the goal of any HIV prevention program is to have individuals remain uninfected by increasing or clarifying knowledge, and ultimately, to change or alter behaviors and attitudes that put adolescents at risk (Haffner, 1987).

HIV/AIDS is a life threatening illness that knows no boundaries, including age. Adolescents are being infected with HIV in various ways and inappropriate or ineffective HIV/AIDS prevention programs may violate teens' rights and put them at risk. Fortunately, schools have a window of opportunity to properly educate adolescents about how HIV is spread and how to protect themselves; adolescents are at the center of the epidemic in terms of transmission and impact. This age group also has the greatest potential for changing the behaviors that spread infection (Young People, 2005).

Reasons for HIV/AIDS Prevention Education

The importance of providing education to young people was brought to a global level by the United Nations General Assembly Special Session on HIV/AIDS. In 2001 this group set the following goal: By 2005, ensure that at least 90%, and by 2010 at least 95%, of adolescents have access to the information and education necessary to develop the necessary skills to reduce the risk of HIV infection (Young People, 2005).

According to Fleming in the 1996 report to President Clinton, The Office of National AIDS Policy reported that the nation must increase its commitment to greater understanding, education, communication, research, and care to bring an end to HIV infection among America's youth. Fleming also suggests that until this commitment is made, adolescents will continue to be infected with HIV at troubling rates. Not only must educational, cultural, and religious institutions make a greater commitment, but also young people themselves must make a commitment to education and prevention of HIV infection. The presidential report indicated that a concerted effort must be made by parents, community leaders, policy makers, schools, and all young people to help adolescents understand that their decisions can affect them for the rest of their lives.

The rate of HIV infection among teenagers becomes apparent when examining the number of AIDS cases among people in their twenties. According to the CDC, one in five AIDS cases in the United States is diagnosed in the 20 - 29 year age group. Since a majority of AIDS cases are likely to have resulted from HIV infection acquired 10 years earlier, most of these individuals were likely to have been infected as teenagers (Fleming et al. 1996).

Fleming (1996) reported to the President and the nation that unless education and prevention programs are made available and accessible to young people, the rate of spreading HIV will remain high. While many adolescents are aware of HIV/AIDS,

enough information is not available on how to prevent infection and spread of the virus. Adolescents can protect themselves if they are given comprehensive information and the tools, skills, and reasons to use them. It was Fleming's recommendation that the Federal government continue to help schools and other agencies involved in youth and adolescent programs to implement comprehensive services to prevent the spread of HIV.

Lawmakers in Pennsylvania have included mandatory HIV/AIDS education in the curriculum of its public schools. In 1999, The Pennsylvania State Board of Education deleted Chapters 3, 5, and 6 of the Public School Code and replaced them with a new Chapter 4 which provides a comprehensive regulation focused on academic standards. Chapter 4 provides requirements for instruction, graduation, strategic planning, and assessment. The Board decided to include a separate section (4.29) on HIV/AIDS (Appendix A) and to expand it to include instruction in other life-threatening and communicable diseases.

Part of the goal of the Pennsylvania Department of Education is to administer a system of pre-service education and in-service professional development to place within schools the staff with sufficient knowledge and skills to implement the required instruction about HIV/AIDS prevention at each level: primary, intermediate, middle, and high school. To meet this goal, the Department of Education will provide leadership to schools including guidance on appropriate methods to address HIV and AIDS. The department will also provide advice and technical assistance with specific HIV/AIDS curriculum questions and with HIV/AIDS and other infectious disease policy development. The educational materials and instruction shall be determined by the local school districts and are to be appropriate for the age group. The instruction shall include information about the nature of the disease, treatments, methods of transmission, and how infection can be prevented. A school district can excuse a student from HIV/AIDS

instruction if it conflicts with the religious beliefs or principles of the student and if the excusal is requested in writing by the student's parent or guardian (HIV/AIDS Policy, 1998).

According to Forest and Cates (1993), public campaigns against AIDS do work. Among sexually active students in grades 9 - 12 in 1995, 54% used a condom the last time they had intercourse (CDC's Role in HIV and AIDS Prevention, 2001). This percentage is two to three times higher than those reported in the 1970s before AIDS became a public health issue. This increase over time suggests that the emergence of AIDS and public campaigns to prevent AIDS through increased condom use has been effective in reducing the spread of the HIV virus.

The Office of National AIDS Policy gave recommendations about how to make education available and accessible. Education on HIV/AIDS prevention should begin at an early age and be continually reinforced both in and beyond the classroom. Adolescent HIV prevention is a job that is too critical and challenging for any single segment of society; therefore, education programs need to be developed and delivered by parents, teachers, religious leaders, professionals working with adolescents, role models, and the media. Young people themselves, serving as peer educators, should be utilized as an important part of the prevention effort.

Fleming (1996) suggested that, beginning at the earliest appropriate age, young people should receive sexuality and HIV/AIDS education as part of a comprehensive curriculum of health education. Such a curriculum should include accurate information about HIV and its modes of transmission, the opportunity to assess personal risk of infection, and skills training. This comprehensive HIV/AIDS education, as part of a comprehensive health education, should be available to every young person in all 50 states and territories. The need exists for comprehensive school-based HIV prevention

education; school-based efforts are an important step to effectively protecting adolescents from HIV.

Schools can play an important role in educating our youth about HIV and AIDS. In 1992, the United States Department of Health and Human Services gave a list of suggestions for parents and communities to do in order to involve local school districts in HIV/AIDS education:

1. Find out if schools have health education programs and if they include information about HIV/AIDS;
2. Urge schools to talk to parents when developing an HIV education program;
3. Encourage peer-based programs;
4. Ensure that curricula address drug and alcohol abuse, since students need to understand how these substances impair judgment and put them at risk;
5. Urge school boards to adopt HIV/AIDS policies and organize education events throughout the year focusing on HIV prevention (Preventing HIV and AIDS, 1992).

C. Everett Koop, the Surgeon General of the United States in 1994, echoed the need for schools to provide HIV and AIDS education (Surgeon General's Report, 1994). He reported that many schools already had excellent AIDS education programs that also teach children how to protect themselves against HIV infection. Of these, the most effective programs support and reinforce the AIDS prevention messages given at home and are part of a comprehensive health curriculum for every grade. Schools must ensure that students receive HIV/AIDS education appropriate to their age and their needs. They must not discriminate against children with HIV and must support the right of HIV-infected children to attend school.

Since HIV infection is spread primarily through sexual behavior and drug addiction, many people are embarrassed to discuss it and many young people cannot talk about HIV infection / AIDS either at home or in their communities. This limits their opportunities to discuss and learn about the risk behaviors that can lead to infection. Embarrassment may prevent them from speaking to parents or family members and concerns about confidentiality may prevent youth from speaking to medical professionals, counselors, or other adults (AIDS Education at School, 1999). Klein (1993) reported that it might be difficult to discuss AIDS and the topics that invariably are raised in classroom lectures and discussions in a course about AIDS. This situation requires educators to not only be sensitive to their students' apprehensions but also to discover ways of reducing their reluctance to ask questions.

While school may be an appropriate place to provide HIV/AIDS education, there are obstacles that may prevent the inclusion of HIV/AIDS education in schools: the subject may be considered too sensitive or controversial for children, and/or the school curriculum is already full and there is no space for HIV/AIDS education. Because the state of Pennsylvania adopted section 4.29 (Appendix A) of the State Code, neither of these obstacles should prevent the schools from including HIV/AIDS education in the curriculum in Pennsylvania public high schools.

When HIV/AIDS education is included in the curriculum, AVERT (AIDS/HIV Education and Research Trust) reports that it may be inadequate for several reasons. Teachers who are not properly trained may present the HIV/AIDS prevention education. Often inadequate curriculum materials are used. Information may not be complete, and there may be a lack of referral services (AIDS Education at School, 1999). When sexual behavior is discussed as a method of transmission, the options given may be limited only to abstinence. At times, the HIV/AIDS education that is provided addresses only the

medical and biological facts. Life skills need to be taught and relationships, sexuality, and the risk associated with drug abuse must be presented. A combination of life skills and the medical and biological aspects of AIDS is important so that the students begin to comprehend what it means when people are infected by HIV and develop AIDS (Klein, 1993).

High school level curricula for HIV/AIDS education should include: HIV infection and the process of the disease, psychological implications, special populations, education, prevention and treatment, moral and ethical issues, and current biomedical research. The practice of including AIDS-related information in general sociology courses or by introducing new courses specifically for instructing students about AIDS and society has been increasingly common (Klein, 1993). Potential disadvantages of HIV/AIDS courses may include: overload of numbers and statistics, intolerance of lifestyles, the subject is often depressing, and reading assignments may be too numerous.

The CDC conducts research to further understand HIV, tracks the course of HIV and AIDS, evaluates ways of preventing HIV transmission both medically and behaviorally, and continues to work for an HIV vaccine. Part of the CDC's overall mission of reducing illness and death is to provide leadership in preventing and controlling HIV infection, by working with local, state, national, and international partners. This work includes providing educational programs in schools. The CDC also works with communities to monitor and evaluate prevention programs. Through this attempt the CDC has created a Prevention Research Synthesis (PRS) database. This database includes all well-conducted evaluations of HIV prevention programs and, from these studies, the CDC has developed prevention modules and guidelines for communities to replicate effective programs. One of these is the "Guidelines for Effective School Health Education to Prevent the Spread of AIDS" (Appendix B).

In 1987, the CDC began a national program aimed at schools and other youth-serving agencies that assist in delivering effective HIV-prevention education. Major activities include: teacher training, developing and providing educational materials, and monitoring and evaluating program activities (CDC's Role in HIV and AIDS Prevention, 1999).

In 1997, the Massachusetts Board of Education issued and tallied a Youth Risk Behavior survey aimed at HIV/AIDS prevention education. This survey was the result of a 1989 recommendation by the Board of Education for schools to provide HIV/AIDS prevention education to all students in all grades within a comprehensive health curriculum. Within the recommendation, the Board supported prevention education that included instruction on how to prevent infection, instruction on the correct use of condoms, and presentations by persons living with HIV infection on AIDS.

The results of the survey showed that students who had been taught about HIV/AIDS (47%) were somewhat less likely to have had intercourse in their lives than those who had not received the instruction (56%). They were also significantly less likely to have had four or more sexual partners (12% vs. 26%). Among students who had sexual intercourse in the three months prior to the survey, 60% of those who had received school instruction on condom use did use a condom during their most recent sexual experience compared to 50% of sexually active students who had not received instruction (1997 Massachusetts Youth Risk, 1999).

Effective HIV prevention is neither a single program nor a single event; it must take place over the course of many years and be developmentally appropriate (Fleming et al. 1996). Schools are a highly effective and appropriate place to teach young people HIV prevention information and skills before they begin to practice the behaviors that put them at risk for HIV infection. An estimated 98% of young people between the ages of 5

and 17 are enrolled in schools. Most young people attend school at some point, and schools are an entry point where these topics can be addressed. In schools, children have the positive combination of an established curriculum, teachers and other adult staff, and the support of a peer group.

HIV/AIDS Education and Sex Education

Approximately two-thirds of the 12 million cases of sexually transmitted diseases (STDs) reported each year in the United States are for persons under the age of 25; one-fourth are teen-agers. This is particularly significant, because if either partner is infected with another STD, the risk of HIV transmission increases substantially. If it is an STD that causes a discharge of pus or mucus, such as gonorrhea or chlamydia, the risk of transmission is three to five times greater. If the STD causes ulcers, such as syphilis or genital herpes, the risk of transmission is nine times greater (HIV Infection in Adolescents, 2000). CDC studies conducted every two years consistently indicate that approximately 60 % of students have had sexual intercourse by grade 12; half reported the use of a latex condom during their last sexual intercourse and about 20% have had more than four sexual partners (HIV Infection in Adolescents, 2000).

It is commonly assumed that discussing sexual behavior with young people will increase teenage sexual activity. Contrary to this popular belief, research that examined the effects of sex education on young people's sexual behavior offers little evidence that it hastens the onset of sexual experience or increases sexual risk among those who are already sexually active. Indeed, several studies from different countries show that quality sex education can actually decrease the likelihood that young people will engage in sexual behavior and increase condom use among those who are already sexually active.

Because 95% of all United States youth aged 5 - 17 are enrolled in schools, health promotion programs can be an effective method to educate teens about HIV infection. During adolescence and young adulthood, teens form lifelong health habits and it is during this time that they need guidance in their development of adult health and sexual behaviors. School officials believe that it is the parents' responsibility to provide sex education and the schools' responsibility to support the parents' efforts. However, the Pennsylvania Department of Education recognizes the limited information that teens receive in the home and has required that HIV/AIDS be addressed in the school system. In 1996, the CDC reported that 95% of United States residents indicated that information about AIDS should be provided in schools (CDC National AIDS Clearinghouse, 1997).

Over 93% of all public high schools currently offer courses on sexuality or HIV (Kirby, Short, and Collins, 1994). Successful sex education programs provide relevant information, exercises to encourage an appraisal of values, and role-play activities to teach sexual negotiation skills. They also attempt to reduce specific risk-taking behaviors, reinforce group norms against unprotected sex, and discuss social pressures to engage in unprotected sexual activity. School curricula with these components have been shown to significantly reduce the likelihood that students who have not had sex prior to their exposure to the curricula will engage in unprotected sexual intercourse within eighteen months (AIDS Education and Young People, 1999). Ubell reported in 1995 that programs that rely primarily on conveying information about sexual or moral precepts, how the human sexual system functions and what teens should and should not do, have generally failed. However, programs that instead focus on helping teenagers to change their behavior, with the use of role-playing games and exercises that strengthen social skills have shown signs of success.

Educators, parents, and policy-makers should avoid emotional misconceptions about sexual behavior and sex education. Based on the rates of unwanted pregnancies and STDs, including HIV, among teenagers the need for education about how to protect oneself when sexually active can no longer be ignored. A comprehensive risk prevention strategy includes multiple elements in order to protect as many of those at risk of pregnancy and STD/HIV infection as possible (Does Sex Education Work?, 1999).

Prevention programs that promote abstinence, safer sex, substance abuse treatment, needle exchange, and open communication are effective. There is consistent evidence that people often respond by changing destructive behaviors when they are provided with appropriate messages (Why Should We Care, 2000).

There are several sex education programs in use in the United States that include these characteristics. “Reducing the Risk” is a program for high school students in California that incorporates activities based on behavior-theory. The program uses role-playing and experimental activities to build skills and self-efficacy in order to reduce the rate of unprotected intercourse. A greater portion of students who were abstinent before the program successfully remained abstinent and unprotected intercourse was significantly reduced for those who became sexually active (Kirby, Barth, and Leland, 1991).

“Postponing Sexual Involvement” is a program for African-American eighth grade students in Atlanta, Georgia that uses peers to help youth understand social and peer pressures to have sex and to develop and apply resistance skills. A unit of the program also teaches human sexuality, decision-making, and contraception. The program successfully reduced the number of abstinent students who initiated intercourse after the program and increased contraceptive use among sexually experienced females. (Howard and McCabe, 1990)

In 1994 Ekstrand, Siegel and Krasnovsky reported about “Healthy Oakland Teens” or HOT that was used in the seventh grade in a junior high in Oakland, California. Ninth grade peer tutors led interactive exercises on values, decision-making, communication, and condom-use skills. After one year, students were significantly less likely to initiate sexual activities, such as deep kissing, genital touching, and sexual intercourse.

Walter and Vaugh (1993) reported on “AIDS Prevention for Adolescents in School” which is a program for ninth and eleventh graders in New York, New York. This program focused on identifying myths about AIDS, teaching cognitive skills to appraise the risks of transmission, increasing knowledge of AIDS through prevention resources, clarifying personal values, and teaching skills to delay intercourse and/or the consistent use of condoms. All sexually experienced students reported increased condom use after the program.

In 1994, Kirby, Short, and Collins, after reviewing 23 studies, concluded that effective sex education programs shared the following characteristics:

1. Narrow focus in reducing sexual risk-taking behaviors that may lead to HIV/STD infection or unintended pregnancy;
2. Social learning theories as a foundation for program development, focusing on recognizing social influences, changing individual values, changing group norms, and building social skills;
3. Experimental activities designed to personalize basic, accurate information about the risks of unprotected intercourse and methods of avoiding unprotected intercourse;
4. Activities that address social or media influences on sexual behaviors;

5. Reinforcing clear and appropriate values to strengthen individual values and group norms against unprotected sex; and
6. Modeling and practice in communication, negotiation, and refusal skills.

In 1992, Britton, DeMauro, and Gambrell, identified some adolescents as being at higher risk of contracting HIV through sexual intercourse because they have unprotected sex with high risk groups (males who have sex with males and IV drug users); they engage in unprotected sex for drugs (two risks: unprotected sex and having sex with a high risk group), and they participate in IV drug use and sharing needles. This information has significant implications for the design of educational programs. Britton, DeMauro, and Gambrell agree that there should be effective education programs for all young people, in addition to more-focused programs that target those groups at higher risk, including males who may have sex with males, females who have unprotected heterosexual sex with IV drug users and exchange sex for drugs, and IV drug users who may share needles.

Britton, DeMauro and Gambrell (1992) also identified forty-six states, including the Commonwealth of Pennsylvania that either strongly recommend or mandate the teaching of sexuality education. In addition, all fifty states recommend or mandate AIDS education programs. A 1987 Gallup Poll showed that 85% of American adults believe that sexuality education should be taught in the schools. According to the report, 94% of parents believe that sexuality education should be taught in schools and because of this popular support, most sex and HIV education programs are implemented with relatively little or no controversy (Gallop, 1987). Of the controversies that do arise, most focus on whether only abstinence should be taught in schools or if the use of condoms and other forms of contraception should also be discussed.

It is difficult for studies to measure the impact of programs on actual HIV and STD rates, but it is possible to measure the impact on behaviors that are logically related to HIV and STD rates including: age initiation of intercourse, frequency of sexual activity, number of sex partners, and condom and other contraceptive use. The Division of Adolescent and School Health within the CDC examined the effectiveness of programs designed to reduce risk-taking behaviors. Four successful curricula have been identified: “Be a Responsible Teen,” “Be Proud, Be Responsible,” “Get Real about AIDS,” and “Reducing the Risks.” Curricula such as these and others have shown significant positive behavioral outcomes (HIV Transmission and Prevention in Adolescents, 2001).

Summary

It is widely believed that the human immunodeficiency virus (HIV) was passed from animals to humans through zoonosis. How this exactly occurred has not been identified, but HIV closely resembles a simian immunodeficiency virus (SIV) and may have crossed species through direct contact or medical science. As a result of changing social conditions, HIV was able to exit Africa, where it first infected humans, and spread to the world. Although HIV and AIDS were not officially identified until 1982, there is evidence that cases existed prior to the 1970s. By studying the history of the disease, medical researchers hope to understand the evolution of the virus and use this information in developing prevention programs and, hopefully, a vaccine or cure.

Acquired immunodeficiency syndrome (AIDS) is diagnosed with infection of HIV, the presence of certain predictor illness, and a CD4+ (T-cell) count below 200. The onset of AIDS and symptoms may take up to 10 years after HIV infection. HIV infection occurs only through body fluids and in certain circumstances: unprotected intercourse,

the sharing of needles and/or syringes, and before, during, and after the birthing process and through breast-feeding.

Even though the number of AIDS cases has declined in the 13 – 24 age group, the number of HIV infections has not. Because at this time there is no cure, the only way to stop the spread of infection is to educate individuals on the behaviors that put people at risk for infection. Most Americans are enrolled in school at some point; therefore the classroom is an appropriate place for this education. Section #4.29 of the Pennsylvania State Code requires the public schools in the state to provide HIV/AIDS education to all students at the elementary, middle, and high school levels. The Centers for Disease Control (CDC) provides assistance to the public schools in developing HIV/AIDS curricula. The “Guidelines for Effective School Education to Prevent the Spread of AIDS” suggests content for schools to include at each level of their instruction.

AIDS cannot be cured, but HIV infection can be prevented (Be a Face for Change, 1998). Working with people under the age of 25 is perhaps the best hope we have today of bringing the epidemic under control. If HIV prevention fails among the young, we will have to face the staggering human and economic costs of vast numbers of new AIDS cases. The most effective method to slow the rampant spread of HIV/AIDS throughout the nation is to alert all Americans to the threat that the epidemic poses within their communities and among their peers.

CHAPTER 3

METHODOLOGY

The data for this research study was collected in two steps: an introductory letter (Appendix C) to high school principals followed by a survey (Appendix D) to the individual(s) responsible for providing HIV/AIDS instruction. The latter tool used to collect data was the survey type known as the mail survey and it contained both unstructured and structured response formats. The importance of the strategy of using the structured format was to enable the respondents to reply more easily and to help the researcher accumulate and summarize responses more efficiently and uniformly. Specific content statements on the survey had a structured format and asked the respondent to indicate what is included in the curriculum and what was taught to the students. Respondents used the unstructured format when they provided demographic information about themselves. The significance of utilizing the unstructured response format was to avoid constraining the respondents and limiting the researcher's ability to understand what the respondents really meant.

Survey of those Responsible for HIV/AIDS Instruction

On October 14, 2004, an introductory letter (Appendix C) was sent to the principal of each of the 25 public high schools in Fayette, Greene, and Washington counties, Pennsylvania. This letter asked the principal to identify the individual(s) responsible for the HIV/AIDS curriculum in each school and a copy of the survey was included with the letter. Once this information was received from each school, a survey

(Appendix D) was sent to the identified individual(s). It was anticipated that these school personnel would include a curriculum coordinator or other administrator, a specific academic department chair, a group of teachers, or an individual teacher. The survey asked specific questions about the content of the HIV/AIDS curriculum and what was being taught. It also collected demographic information on the individual(s) who provided the instruction including: current position, number of years in the position, area(s) of certification, and training in HIV/AIDS education.

According to the CDC, schools should provide at least the essential information on HIV/AIDS as summarized in the “Guidelines for Effective School Health Education to Prevent the Spread of AIDS” (Appendix B). The content area of these guidelines is divided into three sections: early elementary school, late elementary/middle school, and junior high/senior high school. The CDC does not provide exact grade levels, but allows individual districts to determine specific levels of instruction locally. The majority of the survey for this study required responses to a list of HIV/AIDS education and prevention facts from the above-cited “Guidelines.” This list of 19 content statements and topics was compiled from the junior high/senior high school content area of the CDC guidelines and respondents were asked to indicate which were included in their school’s curriculum and which were directly taught to the students.

A cover letter was included with each survey that explained the research was being conducted as a partial requirement of a doctoral program in education at Duquesne University. This letter described the research, requested participation, and ensured that the information received would be kept confidential and would not be linked to the

districts by name. Regarding the confidentiality issue, the letter explained that names of the respondents would not be published, reports would be generalized, and surveys coded only to track the receipt of responses. Also included with the survey was a detailed consent form (Appendix E). This form explained that participants in the study would only be contacted in order to complete the survey, they would not be placed at any risk, nor would they receive any benefit or compensation. Participation in the project would not require any cost and an envelope would be provided for the return of the response. Those who were contacted to complete the survey would not be under any obligation and they were free to withdraw consent at any time. Upon request, the participants would be provided with a copy of the completed survey. If a response was not received within two weeks, a second letter (Appendix F) was sent to those individuals who had not responded. Follow-ups to the requests were made by telephone and e-mail. All names, addresses, and the completed surveys were kept in a locked file in the researcher's home and all materials will be destroyed at the completion of the study.

The survey designed for this study was reviewed for validity by a collegiate professor as well as an assistant superintendent and a high school principal from a public school district with the latter two having been responsible for HIV/AIDS curriculum. These professionals verified the content of the instrument. The proposal for this study and the survey received approval from the Institutional Review Board of Duquesne University.

Responses and Data Analysis of the Survey

Responses to the survey provided data for three of the research questions: what was included in each school's curriculum, what was being taught to the students, and demographic information about the school personnel who provided the instruction. The fourth research question was answered by comparing the information received to the "Guidelines for Effective School Health Education to Prevent the Spread of AIDS" (Appendix B).

Analysis of the survey responses provided a summary to all of the items on the survey. First, details of the school districts were collected: number of students, grade levels in the school, grade levels to which the instruction was provided, and in what classes the instruction was provided. Further school information included who was involved in developing the HIV/AIDS curriculum and if the district received any professional guidance in the development. Descriptive statistics were used to report the data from the surveys. The number and percentage of schools that have materials available to the parents and the number and percentage of schools that require parental approval are also reported in Chapter 4.

According to the Pennsylvania State Code (Appendix A), each district in the Commonwealth is to provide HIV/AIDS education at every grade level. To each of the 19 content statements and topics in the survey, respondents indicated with a circle which were included in each district's established curriculum and which were directly taught to the students. These statements, taken from the "Guidelines for Effective School Health Education to Prevent the Spread of AIDS" (Appendix B), have been deemed age

appropriate by the CDC to be included in high school HIV/AIDS curriculum. The responses to the content statements provided information as to which districts were meeting the Pennsylvania law and how much information was included in the curriculum. This information answered the first two research questions: what was included in the curriculum and what was taught. The third research question was answered simultaneously by the use of the CDC guidelines as a basis to determine adequate content.

To answer the fourth research question additional information from each school formed a demographic description of the personnel responsible for implementing the HIV/AIDS instruction. The types of positions and the areas of certifications held by these personnel are reported in Chapter 4. Section 4.29 of the Pennsylvania Code (Appendix A) does not provide any requirements for the training of these personnel. The information received from this study includes what types of training these school personnel have received. All demographic information is reported anonymously in table form.

CHAPTER 4

RESULTS

Introduction

This chapter presents a summary and analysis of the data relevant to each of the four research questions investigated in this study. This study examined HIV/AIDS curricula in public high schools in three counties of southwestern Pennsylvania and demographic information was collected on the school personnel responsible for providing the HIV/AIDS instruction.

Organization of the Results

The summary of results is organized according to the questions of the survey (Appendix D) sent to the individuals providing HIV/AIDS instruction. The survey questions help to answer the four research questions of the study. The research questions are:

1. What are the established HIV/AIDS curricula in each of the 25 public high schools in Fayette, Greene, and Washington counties?
2. What parts of the established curricula are being taught to the high school students?
3. How does the curricula compare to the recommendations of the Centers for Disease Control?
4. What school personnel are responsible for the HIV/AIDS education and what type of training and education have they received?

To investigate the established HIV/AIDS curricula and what was being taught in each of the 25 public high schools in Fayette, Greene, and Washington counties, Pennsylvania, those responsible for the curricula were surveyed with a list of nineteen content statements and topics. This list was compiled from the junior/senior high school section of the “Guidelines for Effective School Health Education to Prevent the Spread of AIDS” (Appendix B) provided by the CDC. Respondents were asked to indicate which content statements were included in the curricula and which were taught to the students. This part of the survey provides information for the first three research questions: what was the established curriculum, what was taught to the students, and how the curricula compared to the guidelines from the CDC. This information was collected from each school that returned completed surveys.

The counties in this study, Fayette, Greene, and Washington, comprise the southwestern corner of Pennsylvania. Table 1 displays the population of the counties, total number of students enrolled in the high schools, and the number of AIDS cases and deaths.

Table 1

County Population, High School Enrollment, and AIDS cases/deaths

County	Total Population	High School Enrollment	Number of AIDS cases	Number of AIDS deaths
Fayette	40,672	5,900	57	35
Greene	150,000	2,350	24	11
Washington	208,000	10,650	106	65
Totals	398,672	18,900	187	111

The number of AIDS cases/deaths was compiled by the Pennsylvania Department of Health from January 1, 1980 through December 2002. This data reveals that the order of counties by population is not the same order of counties by high school enrollment or number of AIDS cases. Washington County has the most in each category: greatest population, highest number of high school students, and the greatest number of AIDS cases. While Greene County has the second highest population, it has the lowest number of high school students and the least amount of AIDS cases. Fayette County has the smallest population, but the second highest number of high school students and the second highest number of AIDS cases.

On October 14, 2004, a letter (Appendix C) was sent to each of the principals in the high schools of Fayette, Greene, and Washington counties. There are 25 public school districts in the three counties with each having one high school. This letter requested the name(s) of the individual(s) from each school who provided the HIV/AIDS instruction. This process resulted in a list of 28 school personnel. The majority of the schools (n=20) identified only one person, but some schools (n=4) identified two. One principal left a telephone message at the home of the investigator indicating that an individual could not be identified and “the survey was not applicable” to the school district. Once the names of the school personnel were received, the survey (Appendix D) was mailed to the identified individuals. If a completed survey was not received within two weeks, a second request (Appendix F) was mailed. Of the 28 surveys sent, 26 were completed and returned, representing a return rate of 93%.

Two surveys were not returned: in one district, a teacher who was identified as the person responsible returned a letter to the investigator stating: “I do not incorporate HIV/AIDS education into my curriculum. Because I am the sole health teacher in the district I have a problem finding time to incorporate the said topic. I understand the importance of teaching HIV/AIDS in the classroom and hope to incorporate it in the near future.” In another district, the school nurse was identified as the person to contact. The survey was returned with a note indicating that the particular individual was “off ill and would not be back for sometime – perhaps you would like to direct this survey to another school.”

Data relevant to the number of schools and surveys are presented in Table 2.

Table 2

Number of School Districts and Surveys

County	Number of Districts	Districts Without Surveys	Districts with Two Surveys	Total Number of Surveys
Fayette	6	1	1	6
Greene	5	1	1	5
Washington	14	1	2	15
Total	25	3	4	26

The following data provides information that helps to answer research question #4: What school personnel are responsible for the HIV/AIDS education and what type of training and education have they received? Of the 26 surveys received, 20 individuals indicated they were physical education and health teachers/instructors, three were health teachers, one was a biology teacher, one a social studies/health teacher, and one a principal. These individuals held similar certifications: 23 were certified in physical

education and health, one was certified in biology/chemistry, one in social studies/health, and one was certified as a secondary principal.

The years of experience for those teachers providing HIV/AIDS education varied greatly among the 26 respondents as evidenced in Table 3. This data also provides answers to the fourth research question.

Table 3

Years of Teaching Experience

Years of Experience	Number of Teachers	Percent
1 – 5	5	19.2
6 – 10	1	3.9
11 – 15	1	3.9
16 – 20	3	11.5
21 – 25	5	19.2
26 – 30	9	34.6
31 +	2	7.7
	N=26	100.0

Three of the teachers were in the first year of their positions and two have held their positions for 31 years each. One respondent added this note: “I am a first year teacher and still planning this unit. I answered the questions based on what is planned to be taught.”

To continue to answer the fourth research question, respondents were asked about the types of training they had received in order to provide HIV/AIDS instruction. There

is no current Pennsylvania law governing the training needed to teach HIV/AIDS education. Some respondents listed more than one source of training. Those who indicated they were self-taught reported they did so through their own reading of research including that provided on the Internet. Table 4 shows the various sources of training as listed by the respondents.

Table 4

Instructional Training

Source of Training	Number of Teachers	Percent
PA Department of Education	3	10.3
Intermediate Unit	2	6.90
County In-Service	5	17.2
School In-Service	6	20.7
College Courses	5	17.2
Self-Taught	6	20.7
None	2	6.9
	N=29	99.9

Tables 5, 6 and 7 show school enrollment by number and grade configuration for the 25 public high schools in the counties surveyed. This information was collected from the 22 schools that returned surveys; the information from the three districts not responding was found on the Pennsylvania Department of Education website. Table 5 is the school enrollment for all 25 schools. Tables 6 and 7 are broken down into the grade configuration of the schools. Seven of the 25 schools have a seventh through twelfth grade configuration, seventeen schools have a ninth through twelfth grade configuration, and one school has grades ten through twelve.

Table 5

School Enrollment

Number of students	Fayette County	Greene County	Washington County
< 500	1	3	5
501 – 750	1	2	4
751-1000	0	0	1
1001 – 1250	2	0	1
> 1251	2	0	3
	N=6	N=5	N=14

Table 6

*School Enrollment by Grade Configuration
Grades 7 – 12*

Number of students	Fayette County	Greene County	Washington County
< 500	0	2	1
501 – 750	0	1	3
	N=0	N=3	N=4

Table 7

*School Enrollment by Grade Configuration
Grades 9 – 12*

Number of students	Fayette County	Greene County	Washington County
< 500	1	1	4
501 – 750	1	1	1
751 – 1000	0	0	1
1001 – 1250	2	0	1
> 1251	2	0	3
	N=6*	N=2	N=10

*5 schools 9 – 12 and 1 school 10 – 12

Survey responses indicated that the HIV/AIDS instruction is delivered to students in all grades, seven through twelve. Respondents indicated the grade levels for which the

instruction was provided; five districts listed more than one grade level. All survey respondents reported that the material was taught in health classes. One respondent added a written note explaining that the subject was taught in health class in grades seven through twelve but that it was “provided by an outside agency.” Table 8 shows the number of schools presenting the instruction in specific grade level(s).

Table 8

Grade Levels of Instruction

Grade Levels	Number of Schools	Percent
7 – 12	3	9.7
8	3	9.7
9	8	25.8
10	9	29.0
11	5	16.1
12	3	9.7
	N=31	100.0

When asked who was involved in designing the curriculum, 22 of 26 or 84% of the respondents indicated teachers were involved. Other respondents indicated that the Board of Education was involved in five of the districts, community input was received by three of the districts, and two districts had parents involved in putting the curriculum together. No further information on the involvement was provided.

The schools were also asked if there was any outside professional guidance in designing the curriculum. Six respondents reported that their districts received assistance. The following is a verbatim list of who provided the assistance:

- Pennsylvania Department of Education guidelines
- The county (Washington)
- An outside agency

- Local medical staff
- Teen Outreach from Washington Hospital
- Infection Control practitioners from Monongahela Valley Hospital.

Regarding the question about having the HIV/AIDS curriculum/material available to the parents, 25 respondents indicated that the material was available and only one district said it was not and no explanation was given as to why. Nine districts asked for parental approval before providing the instruction and sixteen districts did not. In one district, parental permission was sought for the eighth grade students, but not for the twelfth grade students. Another district indicated that a letter was sent home prior to instruction that included the information that would be taught. Finally, 25 of the 26 districts indicated that they provided information on other sexually transmitted diseases (STD) in addition to HIV/AIDS.

The majority of the survey consisted of nineteen content statements and topics and respondents were asked to indicate which were included in their school's HIV/AIDS curriculum and which were taught to the students. These statements and topics, based upon the CDC guidelines, were used to answer research question #3: How does the curricula compare to the recommendations of the Centers for Disease Control? Table 9 shows which survey items the respondents indicated were included in the curriculum and the data provides answers to the first research question: What are the established HIV/AIDS curricula in each of the 25 public high schools in Fayette, Greene, and Washington counties? The information is displayed by county for each of the three in the study. There are 25 school districts in the three counties. Three schools, however, did not return surveys and four schools returned two surveys each. The data represents 26

surveys. It is evident that no one item is included in every curriculum. Item #18 (moral and ethical issues) is not included in the curricula from any of the schools in Fayette County.

Table 9

Content Statements Included by County

Statement/Topic	Fayette Co. Percent N=6	Greene Co. Percent N=5	Washington Co. Percent N=15
1 Identification of HIV as the virus that causes AIDS	83.33	60	93.33
2 Risk of infection can be eliminated by not engaging in sexual activities or using intravenous drugs	83.33	60	86.67
3 Engaging in mutually monogamous sexual relations is not a risk factor	83.33	60	86.67
4 HIV is transmitted by sexual contact with an infected person	83.33	60	93.33
5 HIV is transmitted by using injection equipment used by an infected person	83.33	60	93.33
6 HIV is transmitted from an infected mother before or after birth	50	40	86.67
7 A small number of medical personnel have been infected through exposure to infected blood	33.33	60	80.00
8a Higher risk of infection: individuals with evidence of infection	50.00	60	66.67
8b Higher risk of infection: males who had sexual relations with other males	50.00	60	80.00
8c Higher risk of infection: individuals who have injected drugs	83.33	60	86.67

8d Higher risk of infection: individuals with numerous sexual partners	66.67	60	86.67
8e Higher risk of infection: infants born to infected mothers	50.00	60	86.67
9 No transmission from open-mouth kissing has been documented	50.00	60	73.33
10 In the past, donated blood transmitted HIV; now all blood is tested	66.67	60	86.67
11 A latex condom should be used if sexual partner is at increased risk or if infection status is unknown	83.33	60	86.67
12 A latex condom provides the best protection against infection although not 100%	33.33	60	86.67
13 Medical/biological facts	83.33	80	80.00
14 Life skills	66.67	60	60.00
15 Infection associated with drug use	83.33	60	93.33
16 Relationships	50.00	60	66.67
17 Sexuality	66.67	60	73.33
18 Moral and ethical issues	0.0	40	33.33
19 Special populations	16.67	60	40.00

Table 10 shows which items the respondents indicated were directly taught to the students. Only three items were taught in every school:

1. Identification of HIV as the virus that causes AIDS
5. HIV is transmitted by using injection equipment used by an infected person
15. Infection associated with drug use

Item #19 (special populations) is not taught in any of the schools in Fayette County. This content area may include prison populations and mentally and physically handicapped and any number of sub-groups including race and sexual orientation.

Table 10

Content Statements Taught by County

Statement/Topic	Fayette Co. Percent N=6	Greene Co. Percent N=5	Washington Co. Percent N=15
1 Identification of HIV as the virus that causes AIDS	100	100	100
2 Risk of infection can be eliminated by not engaging in sexual activities or using intravenous drugs	100	100	93.33
3 Engaging in mutually monogamous sexual relations is not a risk factor	100	100	86.67
4 HIV is transmitted by sexual contact with an infected person	100	100	93.33
5 HIV is transmitted by using injection equipment used by an infected person	100	100	100
6 HIV is transmitted from an infected mother before or after birth	83.33	100	86.67
7 A small number of medical personnel have been infected through exposure to infected blood	50	80	86.67
8a Higher risk of infection: individuals with evidence of infection	66.67	100	66.67
8b Higher risk of infection: males who had sexual relations with other males	66.67	100	80

8c Higher risk of infection: individuals who have injected drugs	100	100	93.33
8d Higher risk of infection: individuals with numerous sexual partners	83.33	100	93.33
8e Higher risk of infection: infants born to infected mothers	66.67	100	100
9 No transmission from open-mouth kissing has been documented	66.67	100	80
10 In the past, donated blood transmitted HIV; now all blood is tested	83.33	100	93.33
11 A latex condom should be used if sexual partner is at increased risk or if infection status is unknown	66.67	40	86.67
12 A latex condom provides the best protection against infection although not 100%	66.67	60	86.67
13 Medical/biological facts	100	80	86.67
14 Life skills	50	40	60
15 Infection associated with drug use	100	100	100
16 Relationships	66.67	40	86.67
17 Sexuality	83.33	60	73.33
18 Moral and ethical issues	16.67	20	40
19 Special populations	0.0	60	46.67

Table 11 represents a summary of the previous data with all of the surveys combined. In this table it is also evident that none of the content statements or topics were included by all of the schools and that there were 3 content statements or topics taught by all of the schools. This information indicates that these items have been added

to the established curriculum. In addition, topic #18, moral and ethical issues, had the lowest percentage of being included in the curricula and of being taught in the schools.

Table 11

Content Statements - Totals

Statement/Topic	Total Included N=26	Total Taught N=26
1 Identification of HIV as the virus that causes AIDS	84.62	100
2 Risk of infection can be eliminated by not engaging in sexual activities or using intravenous drugs	80.77	96.15
3 Engaging in mutually monogamous sexual relations is not a risk factor	80.77	92.31
4 HIV is transmitted by sexual contact with an infected person	84.62	96.15
5 HIV is transmitted by using injection equipment used by an infected person	84.62	100
6 HIV is transmitted from an infected mother before or after birth	69.23	88.46
7 A small number of medical personnel have been infected through exposure to infected blood	65.38	76.92
8a Higher risk of infection: individuals with evidence of infection	61.54	73.08
8b Higher risk of infection: males who had sexual relations with other males	69.23	80.77
8c Higher risk of infection: individuals who have injected drugs	80.77	96.15
8d Higher risk of infection: individuals with numerous sexual partners	76.92	92.31

8e Higher risk of infection: infants born to infected mothers	73.08	92.31
9 No transmission from open-mouth kissing has been documented	65.38	80.77
10 In the past, donated blood transmitted HIV; now all blood is tested	76.92	92.31
11 A latex condom should be used if sexual partner is at increased risk or if infection status is unknown	80.77	73.08
12 A latex condom provides the best protection against infection although not 100%	69.23	76.92
13 Medical/biological facts	80.77	88.46
14 Life skills	61.54	53.85
15 Infection associated with drug use	84.62	100
16 Relationships	61.54	73.08
17 Sexuality	69.23	73.08
18 Moral and ethical issues	26.92	30.77
19 Special populations	38.46	38.46

Summary

The items on the survey were designed to answer the four research questions of the study. To answer how the curricula in the schools compared to the recommendations of the CDC (research question #3), the content statements and topics on the survey were taken from guidelines established by the CDC. Respondents from the schools were asked to indicate which of the content statements and topics were included in their schools' curricula and which were taught to the students, answering research questions #1 and #2. Other answers to the survey helped to form demographic profiles of those responsible for HIV/AIDS instruction in the public schools. Also included was information on the

training those teachers had received in HIV/AIDS education; this data answered research question #4.

The individuals providing HIV/AIDS instruction were all classroom teachers who were certified in different areas and had a wide range of years of experience. The schools included in the study had different grade configurations ranging between grades seven and twelve. The subject of HIV/AIDS was presented to a range of grade levels as well, but was consistently taught in health classes. The teachers indicated that they had received training from many different sources including doing their own research and there were teachers who received no training at all.

The responses to the content statements and topics provided varied data. None of the content statements or topics was included by all of the schools and the schools in one county did not include one of the topics at all. There were however, three content statements that were taught in all of the schools. All of the content statements and topics showed a range of responses. The data gathered by the surveys indicated the various states of HIV/AIDS education throughout southwestern Pennsylvania.

CHAPTER 5

SUMMARY, DISCUSSION, AND RECOMMENDATIONS

This chapter presents a discussion on the HIV/AIDS curricula in the public high schools in three counties of southwestern Pennsylvania. A review of the study and its significance is presented, the results are discussed, and recommendations are made for further research.

Significance of the Study

AIDS, officially identified in 1982, and HIV, the virus that causes AIDS, continue to spread worldwide. At the current time there is no cure for HIV/AIDS; the only way to control the virus is to understand the methods of transmission and to stop the behaviors that can put a person at risk. Ultimately, until a vaccine is found, education is the only way to prevent new HIV infection.

Young people enter high school around the same time as the beginning of puberty; it is during this adolescent age period when young people become interested in sexual relations and may begin to explore sexual feelings. The HIV virus is spread through bodily fluids under certain circumstances; unsafe sexual practices (without the use of a condom) can be one cause of spreading HIV infection. Sharing needles or syringes from intravenous drug use may also spread the virus.

Teenagers may at times still remain concrete thinkers and think only of the present without considering future effects of their behavior. It is also during this time that teens form lifelong health habits and are in need of guidance. Comprehensive school

health programs can be an effective method of providing this guidance and the necessary information. Most young people in the United States between the ages of five and seventeen attend school, making it an appropriate place to teach young people HIV prevention and associated skills before they begin to practice the behaviors that put them at risk of infection. HIV infection among teenagers is evidenced by the number of AIDS cases among people in their 20s. A majority of cases develop from an HIV infection contracted within ten years; therefore, most AIDS patients in their 20s were likely to have been infected when they were teenagers.

The necessity of HIV/AIDS education has been recognized nationally as 46 states recommend or mandate sex education, including sexually transmitted diseases and HIV/AIDS, as part of the curriculum. In the state of Pennsylvania, Chapter 4 of the Public School Code requires all public schools to provide HIV/AIDS education at all levels. This regulation, adopted in 1999, does not provide details for the curriculum, but allows each school district to design its own while meeting the state's academic standards. School districts may use the guidelines issued by the CDC for assistance in preparing the curriculum.

Review of the Study

With no research available on specific HIV/AIDS instruction within the state of Pennsylvania, this study was designed to investigate the HIV/AIDS education provided to high school students in the counties of Fayette, Greene, and Washington in the southwestern corner of the state.

Four research questions guided this study:

1. What are the established HIV/AIDS curricula in each of the 25 public high schools in Fayette, Greene, and Washington counties?
2. What parts of the established curricula are being taught to the high schools students?
3. How does the curricula compare to the recommendations of the Centers for Disease Control?
4. What school personnel are responsible for the HIV/AIDS education and what type of training and education have they received?

In the counties of Fayette, Greene, and Washington, there are 25 public school districts with each having one high school. A letter (Appendix C) was sent to the principal(s) of each high school asking the identity of the individual(s) responsible for providing the HIV/AIDS instruction in each school. Data from the letter to the principals requesting names of those responsible for HIV/AIDS instruction came from 24 schools and identified 28 school personnel; 20 schools identified only one person and four schools identified two.

Once this information was received, a survey (Appendix D) was mailed to the identified individuals. The majority of the survey was a list of nineteen content statements and topics compiled from the junior high/senior high school content area of the “Guidelines for Effective School Education to Prevent the Spread of AIDS” (Appendix B) issued by the CDC. The CDC notes in the introduction to these guidelines that HIV is transmitted by behaviors that people can change and that education designed

to modify those specific behaviors helps to prevent the spread of infection. The statements on the survey were chosen because they focus on sexual behaviors and behaviors associated with drug use, behaviors that can be changed through education, and other modes of transmission. Respondents were asked to indicate which of the statements/topics were included in their school's curriculum and which were directly taught to the students. Additional questions on the survey provided demographic data on the individuals providing the instruction.

Review of the Results

While the Pennsylvania mandate is being met in most schools in the three counties, it was not being met by all. In Greene County, a principal left a telephone message stating that there was no one at the high school responsible for HIV/AIDS instruction and that the survey was "not applicable" for the district. This response strongly indicates that no HIV/AIDS instruction was taking place within the district. In one Fayette County school, the principal provided a teacher's name. When the survey was sent to the teacher a reply came that he did not include HIV/AIDS in his classes because there was not enough time to do so. It would seem that the principal knew which teacher would be responsible for HIV/AIDS education, in this case a health teacher, but it is not known if the principal believed that HIV/AIDS instruction was actually taking place or was relying on the teacher to explain that it was not. In a Washington County school where the nurse was identified by the principal, a substitute nurse received the survey. The survey was returned uncompleted with a note explaining the situation.

Again it would seem that the principal knew the nurse was responsible for HIV/AIDS instruction, but it is not known why the substitute nurse would not be responsible for the same curriculum.

Questions on the survey provided some background information on the districts and schools included in the study. Of the three counties from the study, Fayette County had the smallest total population, the second smallest high school enrollment, and the second smallest number of AIDS cases/deaths. From the six public school districts in Fayette County, one district did not return a survey and one district returned two, which provided a total of six completed surveys. Also from the three counties in the study, Greene County had the second smallest total population, but had the smallest high school enrollment, and the smallest number of AIDS cases/deaths. From the five public school districts in Greene County, one district did not return a survey and one district returned two, which provided a total of five completed surveys. Finally, of the three counties, Washington County had the largest total population and the largest high school enrollment; Washington County also had the largest number of AIDS cases/deaths. From the fourteen public school districts in Washington County, three districts did not return surveys and four districts returned two, which provided a total of fifteen completed surveys. Overall, 26 completed surveys were returned which yielded a 93% return rate.

The 25 high schools in the study had varied student populations; six schools had enrollments of less than 500 and five schools had enrollments of more than 1250. In Greene County, none of the five schools had an enrollment of more than 750. The schools in the study were also comprised of different grade configurations; seven of the

25 had grades seven through twelve while the other eighteen had more of a traditional high school setting of grades nine through twelve. None of the schools in Fayette County had a seventh through twelfth grade configuration while one school in the county included grades ten through twelve.

Research suggests that HIV/AIDS education be a part of a comprehensive health curriculum; the HIV/AIDS instruction was provided in health classes in all of the schools returning completed surveys. Chapter 4 of the Pennsylvania Code requires that HIV/AIDS instruction be given at the primary, intermediate, middle school, and high school levels, but the regulations do not stipulate at which specific grade levels the education should be provided. In the schools involved in this study the grade levels to which the instruction was provided varied between all grades seven through twelve. Five of the schools reported that the instruction was given in more than one grade level and three of the schools indicated that the instruction was provided in grades seven through twelve without being specific.

Other questions on the survey provided some information on who was involved in designing the curriculum in each school. Within the districts, teachers were the most involved (84%) in designing curriculum. The Board of Education was involved in five districts, three districts received some input from a community source, and only two districts had parents involved. The schools also received professional guidance from various sources outside of the districts. Research indicates that educating young people about HIV/AIDS can be controversial because the virus is spread through sexual contact and by behaviors associated with drug use. Therefore, according to the CDC, schools

should ask for assistance from the community so that the policies and programs that are designed locally are consistent with the beliefs and culture of the community.

Along with addressing the provision of HIV/AIDS instruction, Chapter 4.29 of the Pennsylvania State Code also addresses informing parents of the instruction. Schools are to make the HIV/AIDS curriculum and material available to parents before the instruction begins and parents have the right to have their child excluded from the instruction if they make the request in writing. Respondents to the survey indicated that only one district did not make the material available to its parents. To another question, nine of the respondents indicated that the schools asked for parental permission before the instruction began and sixteen did not seek permission. Also on the survey, respondents indicated that 25 of the 26 respondents also provided information on other sexually transmitted diseases along with the HIV/AIDS instruction. This is relevant because research has shown that many persons with HIV also have a history of a previous STD. In fact, persons already infected with a sexually transmitted disease, such as gonorrhea or chlamydia, have a higher risk of becoming infected with HIV.

Review of Research Questions 1, 2 and 3

The first three research questions for this study were linked together: What are the established curricula in the high schools, what parts of the curricula are taught to the students, and how does the curricula compare to the recommendations of the CDC? In order to research this information the survey (Appendix D) was designed based on the CDC guidelines.

First, respondents indicated which of the content statements/topics were included in the curriculum. From all three counties, no single statement or topic was included by every school. In Fayette County, moral and ethical issues (#18), was not included by any school. In Greene and Washington Counties, this same topic also received the lowest percentage of inclusion, 40% in Greene County and 33.33% in Washington County.

Next, respondents indicated which of the content statements/topics were directly taught to the students. Three of the statements/topics were taught by all of the schools in all three counties: identification of HIV as the virus that causes AIDS, HIV is transmitted by using injection equipment used by an infected person, and infection is associated with drug use. None of these statements/topics were reported as included by all of the schools.

In Fayette County, moral and ethical issues (#18), was not included in any of the curricula, but it was reported to have been taught by one of the schools. Special populations (#19), was not taught in any of the schools although it was included in the curriculum of one school. Also in Fayette County, eight of the nineteen statements/topics were taught in all of the schools although none of these schools indicated that these statements were included in the curricula. In Greene County, moral and ethical issues (#18), was only taught by one school. Fourteen of the content statements/topics were taught in all of the schools although none of these schools indicated that these statements were included in the curricula. In Washington County, moral and ethical issues received the lowest percentage of being taught (40%), and four out of the nineteen content statements/topics were taught in all of the schools although none of these schools indicated that these statements were included in the curricula.

Discussion on Research Questions 1, 2, and 3

Research indicates the importance of understanding where HIV and AIDS came from and how they developed; this may lead to effective education and prevention programs as well as treatments. Being able to determine how and why HIV/AIDS turned into a world health crisis could also help prevent other health epidemics in the future. The fact that HIV is the virus that causes AIDS is reflected in the first content statement of the CDC guidelines and in the first item on the survey; however, the guidelines do not include anything about the history of the disease.

The answers received as to which content statements and topics were taught reveal many differences and inconsistencies in the HIV/AIDS curricula in the schools in the three counties of this study. All 26 respondents taught the first content statement, that HIV is the virus that causes AIDS; of the nineteen content statements and topics, this is one of only three that were taught by all. It is interesting that this item was not reported as being included in all of the curricula.

The second content statement addresses two of the most common forms of transmission: sexual activities and intravenous drug use. If individuals do not engage in sexual activities and do not use intravenous drugs they do not just reduce the risk of infection, they actually eliminate the risk. Research suggests that adolescents experiment with sexual activities and drug use without considering that they are putting themselves at risk of infection; the majority of HIV/AIDS cases were transmitted through sexual contact or intravenous drug use at this age level. From the respondents in the three counties, only one in Washington County reportedly does not teach these facts. The fifth

content statement also addresses the use of intravenous drugs. This statement, that using injection equipment used by an infected person transmits HIV, was another topic taught by 100% of the teachers. It may be that the reason not all of the teachers admitted to teaching the second statement was because of the inclusion of sexual activities since the idea that the virus is transmitted through IV drug use was taught by all. Separating the two parts of the second statement may reveal this to be true.

The third and fourth statements also address sexual contact as a method of transmission: engaging in mutually monogamous sexual relations is not a risk factor and HIV can be transmitted through sexual contact with an infected person. Again, all but one teacher in Washington County admitted to teaching these facts. This data lends credence to the idea that talking about transmission through sexual activities was avoided in one of the schools.

As previously stated, all 26 respondents indicated that the fifth content statement, using injection equipment used by an infected person transmits HIV, was taught in the curricula. Schools try to keep their students drug free by spending both time and money and federal funds through Title IV are provided to public schools for this purpose. The message that sharing injection equipment can transmit HIV helps to strengthen the anti-drug campaigns. It is assumed that alcohol, as a drug, was included as well since alcohol can lead to impaired judgment and allow individuals to engage in risky behavior. Because HIV is proven to be spread through blood, sharing injection equipment is one of the most common methods of transmission; evidence is easily accessible to prove this to the students.

The sixth and seventh statements addressed two of the less common methods of transmission: an infected mother can transmit the virus before or after birth and medical personnel can become infected through exposure to infected blood. The transmission from mother to child is not the result of a behavior that can be changed but may be prevented medically. If a pregnant woman is aware of her HIV status then measures can be taken to provide immediate medical attention to the new born. This transmission may not be able to be prevented if the mother is unaware of her HIV status. Medical personnel also do not become infected through risky behavior choices but transmission to medical personnel could occur accidentally if these individuals were to come in contact with infected blood, knowingly or unknowingly. Only the teachers from Greene County reported they all taught about mothers passing the infection to their children.

The eighth item on the survey was divided into five content statements which were all categories of people who are at higher risk of infection: individuals with evidence of infection, males who have sex with males, individuals who have injected drugs, individuals with numerous sexual partners, and infants born to infected mothers. The results varied but all were taught by all of the teachers from Greene County. It is surprising that the statement about individuals who have injected drugs was not taught by more teachers considering that more respondents taught other statements that included drug use.

The ninth and tenth statements also referred to other methods of transmission: no documented transmission resulted from open-mouth kissing and donated blood is tested for HIV. Both of these methods received more attention earlier in the history of the

disease when the methods of transmission were not confirmed. Once again, only all of the teachers from Green County taught these topics. It is supposed that open-mouth kissing would be of more interest to adolescents and that this age group may not be overly concerned with donated blood.

Even though latex condoms are advocated for helping to stop the spread of the virus, topics eleven and twelve were not taught by all of the teachers in any county and Greene County had the least number of teachers addressing the topic. Item #11 states that condoms should be used if an individual's sexual partner is at increased risk or if the infection status of the partner is unknown and item #12 states that a latex condom provides the best protection against infection although it is not 100% effective.

According to the literature, one of the controversies over HIV/AIDS instruction was whether condom use should be taught or if only abstinence should be taught. Abstinence would be the only way to be assured that infection is not transmitted. Whether a sexual partner's HIV status is known or not, condoms may not always be effective.

The last seven items on the survey were more general topics than the prior more specific content statements: medical/biological facts, life skills, infection associated with drug use, relationships, sexuality, moral and ethical issues, and special populations. The topic of medical and biological facts would encompass many of the previous content statements, specifically the transmission of HIV and the behaviors associated with the risk of transmission. These facts form the basis for HIV prevention education, but research has found that schools/instructors must be careful not to overload students with difficult medical language or statistics. Only all of the respondents from Fayette County

reported they taught this subject. Another topic, infection associated with drug use, was addressed earlier. This is only one of three survey items that were taught by all of the respondents. All of the content statements and topics from the survey which included transmission associated with drug use were taught in a high percentage of schools.

Three of the final topics were based less on medical and scientific facts and were more subjective: life skills, relationships, and sexuality. These three were among the lowest in how many respondents included and taught the topics. The research on effective prevention programs clearly states that these topics need to be included in the curricula as students need to be taught not only what the virus and disease are, but also what it means to be infected on a personal basis.

The last two topics, moral and ethical issues and special populations, had the lowest percentages; topic #19, special populations, was not taught at all in Fayette County. These special populations could include physically and mentally handicapped, prison populations, and sexual orientation among others. Moral and ethical issues are more subjective than the scientific facts about HIV/AIDS and the ways the virus is spread. It is possible that this subject area is avoided because of its sensitive nature. All of these final topics concerning HIV/AIDS may still cause controversy within the schools. It is also possible that teachers may be more uncomfortable addressing this area as it may be difficult for teachers to discuss sexual topics without bringing their own personal beliefs or bias into the classroom. None of these issues should stop the presentation of all aspects of AIDS, HIV, and its transmission; this is necessary for individuals, especially adolescents, to make informed choices.

The data concerning which topics were included in the curricula and which were taught show the inconsistency and great variety in the HIV/AIDS curricula from these three Pennsylvania counties. It is understandable that statements/topics could be included in a curriculum and not be taught; however, respondents were also admitting that material was being taught which was not included in the established curricula. According to the data, not one of the content statements or topics was included by all of the respondents but there were three survey items that were reportedly taught in all of the schools:

1. Identification of HIV as the virus that causes AIDS;
5. HIV is transmitted by using injection equipment used by an infected person;
15. Infection associated with drug use.

There are several possible reasons for this: the differences in the training the respondents had received could help to explain how the teachers were able to bring different information to their students. Also, when completing the survey, respondents may have been confused when indicating what was included in the curricula and what was actually taught. In an effort to complete the survey quickly respondents may have made mistakes and not marked the “I” for items that were included or the “T” for items that were taught. It is obvious that individual teachers were providing additional material that was not included in the established curricula and teachers who were supposedly following their school’s curriculum were providing additional material that was not in the established curriculum.

According to the latest statistics, the number of HIV/AIDS cases continue to climb worldwide while the state of Pennsylvania is ranked seventh highest in the country

with number of HIV/AIDS cases. The number of cases continued to rise in the three counties of this study as well. Complete education about HIV/AIDS, its methods of transmission, and the behaviors that put people at risk of infection, are the only ways to stop the spread of the virus at this time.

In order to establish HIV/AIDS curricula, public school districts have many sources from which to draw assistance. One of the sources is the “Guidelines for Effective School Education to Prevent the Spread of AIDS” published by the CDC. This study focused on a survey, which was based on these guidelines, to determine what local HIV/AIDS curricula contain and what was being taught to the students. The state of Pennsylvania mandates that HIV/AIDS education be provided to all students in all grade levels throughout the state. Is this happening? In the 25 high schools of Fayette, Greene, and Washington Counties, HIV/AIDS instruction is occurring in at least 22 of the schools; two districts are not providing the instruction and one district did not respond affirmatively or negatively.

The results of this study indicate that not all of the students in the three counties are receiving HIV/AIDS education. Those who are receiving the instruction are receiving a wide variety of information depending on the school they attend and none of the schools are providing all of the information recommended by the CDC. Also, it is possible that even if all of the recommended content is taught, new infection could still occur since the education is focused on changing behaviors and the final choice remains with the individual. The number of cases may decline if the prevention education was

delivered to all of the students in all of the schools and if the curricula were more complete and more uniform between the schools.

Confidentiality laws do not permit knowing the exact number of HIV/AIDS cases from each school district. If this information was available it may help to uncover the quality of HIV/AIDS education in each district. While even the most comprehensive education alone does not eliminate the transmission of the virus, research has shown that effective programs can help individuals change the behaviors that spread infection.

Review of Research Question 4

The fourth research question for the study concerned the individuals providing the HIV/AIDS instruction: What school personnel are responsible for the HIV/AIDS education and what types of training have they received? There were 26 responses and 25 of those were teachers: 20 were physical education and health teachers, three identified themselves only as health teachers, one was a biology teacher, and one a social studies/health teacher. The certifications of these individuals matched their positions respectfully. The 25 teachers and one principal who responded to the survey had varied years of experience from three being in their first year of service to two being in the teaching field 31 years each. The majority of the teachers (34.6%) had 26 to 30 years of experience.

The questions asked on the survey began to build a profile of the individuals providing HIV/AIDS instruction in the public high schools. The fourth research question also investigated what training these individuals received concerning their HIV/AIDS

instruction. On the survey, respondents were to list what type(s) of training they had received and 29 responses were collected as some surveys listed more than one source of training. Six respondents (20.7%) listed school in-service and another six (20.7%) indicated they were self-taught through reading research and using the Internet. Five respondents (17.2%) listed a county in-service as training and another five (17.2%) indicated their training came from college courses. Three teachers (10.3%) reported their training came from the Pennsylvania Department of Education and two (6.9%) reported their training came from an Intermediate Unit. Finally, two respondents (6.9%) admitted they had not received any training for teaching HIV/AIDS education.

Discussion on Research Question 4

The CDC guidelines recommend that the secondary school health teacher provide the HIV/AIDS education. Research indicates that a qualified high school teacher would have training and experience in adolescent development, appropriate teaching methods for this age level, and materials for teaching not only about HIV/AIDS, but also for other related topics such as sexuality, communicable diseases, and drug abuse. When the surveys were mailed, it was thought that the individuals would hold various positions in their schools, but 25 out of 26 respondents were teachers and the other was a principal. With the exception of the principal, all of the respondents had the direct responsibility of providing the education. It is possible that the principal completed the survey but was not the one to actually provide the instruction.

The teachers responsible for HIV/AIDS in the schools from the study had a wide range of experience. Those teaching for more than 20 years have been teaching since AIDS was first identified in 1982. They would be able to provide a personal perspective of the development of the disease and newer and younger teachers would only be able to provide information they have learned from research and others. This does not mean however, that the senior teachers were providing more effective instruction.

In its school health guidelines, the CDC recommends that school personnel responsible for teaching about HIV/AIDS should receive more specific training on the subject. They should also receive continued training about HIV/AIDS so that they have the most current information not only on the disease, but also on the most effective health education available on the subject. As the Pennsylvania State Code does not specify what, if any, training a teacher needs to provide HIV/AIDS education, it seems the teachers are gathering information wherever possible. Training is available through the Pennsylvania Department of Education, which offers leadership and guidance to schools, as well as the CDC. Some teachers reported that they received training through their own school districts. Evidently, not all of the schools provided training nor did the schools seek out training for the teachers as six teachers did their own research and two teachers received no training. In order to maintain a valid teaching certificate in the state of Pennsylvania, teachers must complete so many hours of continuing education and training. High school teachers would do well to pursue training in the area of HIV/AIDS.

Recommendations for Further Research

This study began to explore how the subjects of HIV and AIDS are taught in southwestern Pennsylvania. It would prove valuable to investigate a range of other research questions pertinent to this topic such as what do other curricula in the state contain, how do the curricula in other states compare to Pennsylvania, what methods of instruction were used in the curricula, and what are the specific details of the guidance schools received from outside sources?

The 25 public school districts involved in the study are only 5% of the total number of 501 public school districts in the state of Pennsylvania. A similar study could be done in all of the districts throughout the state. What does the HIV/AIDS curricula contain in the county with the highest number of HIV/AIDS cases? What differences exist between those curricula and those of the counties with the lowest number of HIV/AIDS cases? What are the similarities and differences between the counties?

The state of Pennsylvania has mandated the inclusion of HIV/AIDS education in schools. Do other states have similar mandates? And, if so, what are the similarities and differences between those states and Pennsylvania? Are the content and topics covered in other states similar to those in Pennsylvania?

This study provided some demographic characteristics of the teachers providing the HIV/AIDS instruction. Do other teachers in the state have similar characteristics? How do the teachers in Pennsylvania compare to those in other states who provide HIV/AIDS instruction? Although HIV/AIDS is to be included in the curriculum, Pennsylvania does not provide any details on the individuals who can do the instructing

or what type of training, if any, they should obtain. Is any special training required in other states where HIV/AIDS education is mandated?

To continue investigating the HIV/AIDS curriculum in the three counties in this study, more information could be gathered. What methods of instruction were used in the classrooms? How much time was devoted to the subject of HIV/AIDS and how much time was spent on the different topics in the curricula? It would also be interesting to find out more details about the training the teachers had received; who provided the training, the duration of the training, and what topics were covered.

Some schools indicated that assistance in developing the HIV/AIDS curricula was provided by outside agencies. Learning more details about this assistance would be of importance to other school districts looking for help. Who were these outside agencies and how did they assist with developing the curricula? Other schools reported that the Board of Education, parents, and/or other persons from the community were involved in the development of the HIV/AIDS curricula. What type of assistance did they provide? This information could be of use to other districts looking to develop or redesign HIV/AIDS curricula.

Once this study is complete, the results will be sent back to all of the participating districts. As a follow-up, it could be investigated to see what, if anything, the districts did with the information. Did the information provide any assistance to the districts? Were any parts of the curricula changed as a result of the study? For a future long-range study, the number of HIV/AIDS cases could be tracked after the implementation or change of HIV/AIDS curricula.

Summary

It is important to remember that the numbers of HIV/AIDS cases are only of those who have been tested and the results reported. There are many individuals living as HIV-positive and presenting no symptoms. The guidelines from the CDC help to define a core curriculum that schools could follow, although the guidelines are not a complete program in and of themselves. What are the consequences for not having a comprehensive HIV/AIDS education and prevention program in place? Currently the consequences are fatal since there is no cure and all HIV infections will eventually lead to AIDS. HIV-positive individuals are staying healthy longer because of drug advancements and the development of AIDS is delayed, but all AIDS cases lead to death.

The goal of every HIV/AIDS prevention and education program is the same: to keep individuals from being infected with HIV. In order to do this, people must learn which behaviors can put them at risk of infection and be willing and able to change them. Schools are a perfect setting for this message.

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APPENDIX A

Pennsylvania Department of Education
Pennsylvania Code 4.29

HIV/AIDS and Other Life-Threatening and
Communicable Diseases

4.29 HIV/AIDS and other life-threatening and communicable diseases

(a) Instruction regarding prevention of human immunodeficiency virus (HIV) infection /acquired immunodeficiency syndrome (AIDS) and other life-threatening and communicable diseases shall be given for primary, intermediate, middle school and high school education and shall follow the requirements of subsections (b) and (c).

(b) Educational materials and instruction shall be determined by the local school district and be appropriate to the age group being taught. The program of instruction shall include information about the nature of the diseases, treatments and cures, methods of transmission and how infection can be prevented. The school district may omit instruction in the elementary grades on transmission of disease through sexual activity. Programs discussing transmission through sexual activity shall stress that abstinence from sexual activity is the only completely reliable means of preventing sexual transmission. Programs shall stress that avoidance of illegal drug use is the only completely reliable means of preventing transmission of disease through shared drug paraphernalia.

(c) A school district, including charter schools, shall excuse a pupil from HIV/AIDS instruction when the instruction conflicts with the religious beliefs or principles of the pupil or parent or guardian of the pupil and when excusal is requested in writing. Prior to the commencement of instruction, a school district shall publicize that detailed curriculum outlines and curricular materials used in conjunction with the instruction are available to parents and guardians during normal school hours or at teacher-parent conferences. Curricular materials, if practical, shall be made available by the school district for home instruction use by a parent or guardian of a student excused from the district's HIV/AIDS instruction.

Available: <http://www.pacode.com/secure/data/022/chapter4/s4.29.html>

APPENDIX B

Guidelines for Effective School Health Education to Prevent the Spread of AIDS

Guidelines for Effective School Health Education

To Prevent the Spread of AIDS

MMWR 37(S-2);1-14

Publication Date: 01/29/1988

Content

Although information about the biology of the AIDS virus, the signs and symptoms of AIDS, and the social and economic costs of the epidemic might be of interest, such information is not the essential knowledge that students must acquire in order to prevent becoming infected with HIV. Similarly, a single film, lecture, or school assembly about AIDS will not be sufficient to assure that students develop the complex understanding and skills they will need to avoid becoming infected.

Schools should assure that students receive at least the essential information about AIDS, as summarized in sequence in the following pages, for each of three grade-level ranges. The exact grades at which students receive this essential information should be determined locally, in accord with community and parental values, and thus may vary from community to community. Because essential information for students at higher grades requires an understanding of information essential for students at lower grades, secondary school personnel will need to assure that students understand basic concepts before teaching more advanced information. Schools simultaneously should assure that students have opportunities to learn about emotional and social factors that influence types of behavior associated with HIV transmission.

Junior High/Senior High School

Education about AIDS for students in junior high/senior high school grades should be developed and presented taking into consideration the following information.

The virus that causes AIDS, and other health problems, is called human immunodeficiency virus, or HIV.

The risk of becoming infected with HIV can be virtually eliminated by not engaging in sexual activities and by not using illegal intravenous drugs.

Sexual transmission of HIV is not a threat to those uninfected individuals who engage in mutually monogamous sexual relations.

HIV may be transmitted in any of the following ways: a) by sexual contact with an infected person (penis/vagina, penis/rectum, mouth/vagina, mouth/penis, mouth/rectum); b) by using needles or other injection equipment that an infected person has used; c) from an infected mother to her infant before or during birth.

A small number of doctors, nurses, and other medical personnel have been infected when they were directly exposed to infected blood.

The following are at increased risk of having the virus that causes AIDS and consequently of being infectious: a) persons with clinical or laboratory evidence of infection; b) males who have had sexual intercourse with other males; c) persons who have injected illegal drugs; d) persons who have had numerous sexual partners, including male or female prostitutes; e) persons who received blood clotting products before 1985; f) sex partners of infected persons or persons at increased risk; and g) infants born to infected mothers.

The risk of becoming infected is increased by having a sexual partner who is at increased risk of having contracted the AIDS virus (as identified previously), practicing sexual behavior that results in the exchange of body fluids (i.e., semen, vaginal secretions, blood), and using unsterile needles or paraphernalia to inject drugs.

Although no transmission from deep, open-mouth (i.e., "French") kissing has been documented, such kissing theoretically could transmit HIV from an infected to an uninfected person through direct exposure of mucous membranes to infected blood or saliva.

In the past, medical use of blood, such as transfusing blood and treating hemophiliacs with blood clotting products, has caused some people to become infected with HIV. However, since 1985 all donated blood has been tested to determine whether it is infected with HIV; moreover, all blood clotting products have been made from screened plasma and have been heated to destroy any HIV that might remain in the concentrate. Thus, the risk of becoming infected with HIV from blood transfusions and from blood clotting products is virtually eliminated. Cases of HIV infection caused by these medical uses of blood will continue to be diagnosed, however, among people who were infected by these means before 1985.

Persons who continue to engage in sexual intercourse with persons who are at increased risk or whose infection status is unknown should use a latex condom (not natural membrane) to reduce the likelihood of becoming infected. The latex condom must be applied properly and used from start to finish for every sexual act. Although a latex condom does not provide 100% protection--because it is possible for the condom to leak,

break, or slip off--it provides the best protection for people who do not maintain a mutually monogamous relationship with an uninfected partner. Additional protection may be obtained by using spermicides that seem active against HIV and other sexually transmitted organisms in conjunction with condoms.

Behavior that prevents exposure to HIV also may prevent unintended pregnancies and exposure to the organisms that cause Chlamydia infection, gonorrhea, herpes, human papillomavirus, and syphilis.

Persons who believe they may be infected with the AIDS virus should take precautions not to infect others and to seek counseling and antibody testing to determine whether they are infected. If persons are not infected, counseling and testing can relieve unnecessary anxiety and reinforce the need to adopt or continue practices that reduce the risk of infection. If persons are infected, they should: a) take precautions to protect sexual partners from becoming infected; b) advise previous and current sexual or drug-use partners to receive counseling and testing; c) take precautions against becoming pregnant; and d) seek medical care and counseling about other medical problems that may result from a weakened immunologic system.

More detailed information about AIDS, including information about how to obtain counseling and testing for HIV, can be obtained by telephoning the AIDS National Hotline (toll free) at 800-342-2437; the Sexually Transmitted Diseases National Hotline (toll free) at 800-227-8922; or the appropriate state or local health department (the telephone number of which can be obtained by calling the local information operator).

Available: www.cdc.gov/mmwr/preview/mmwrhtml/00001751.htm

APPENDIX C

Letter to Principals of Public High Schools
In Southwestern Pennsylvania

Timothy A. Sheets
P.O. Box 290
Richeyville, PA 15358

(724) 632-3329
tasheets@juno.com

October 14, 2004

Dear (*name of principal*),

I am a doctoral candidate in the School of Education at Duquesne University, Pittsburgh. For my dissertation I am investigating the topic of HIV/AIDS in the curriculum of the public high schools in three counties of southwestern Pennsylvania. Each of these counties continues to report new cases; and since there is no cure for HIV/AIDS, the only way to stop the spread of infection is through education. Specifically I want to find out what is included in the curriculum, what is being taught to the students, and obtain demographic information on the school personnel providing the instruction. To facilitate my gathering this information, I respectfully request your assistance.

Enclosed please find a brief questionnaire to identify the individual(s) responsible for the HIV/AIDS curriculum in your school and a copy of the survey I will send. After I receive the name(s) from you I will send a letter of explanation and the survey. I will also include an informed consent form explaining that participation is voluntary and how all personal information regarding district, school, and personnel will be kept confidential. This research has received IRB approval from Duquesne University and no school information will be identified on the surveys or in the results. Initially, all surveys will be coded with a random number to determine receipt.

Please complete the enclosed form and return it in the self-addressed stamped envelope. Any questions may be directed to me at the address above. A copy of the findings to my study will be sent to you so that you will be able to see the HIV/AIDS curricula in the high schools of southwestern Pennsylvania and be able to better evaluate your own curricula. Thank you for your participation and quick response.

Respectfully,

Timothy A. Sheets

HIV/AIDS Education
In the Public High Schools Of Southwestern Pennsylvania

Name of school: _____

Name(s) and address(es) of personnel responsible for providing HIV/AIDS instruction in your school:

Signature of Principal: _____

APPENDIX D

Survey of those Responsible
For HIV/AIDS Instruction

Timothy A. Sheets
P.O. Box 290
Richeyville, PA 15358

(724) 632-3329
tasheets@juno.com

October _____, 2004

Dear teacher,

I am a doctoral candidate in the School of Education at Duquesne University, Pittsburgh. For my dissertation I am investigating how public high schools in three counties of southwestern Pennsylvania address the subject of HIV/AIDS. I am asking for your help in conducting my research. Based on information received from your principal, you have been identified as the individual responsible for some or all of the HIV/AIDS education in your school.

Enclosed please find a short survey that I am asking you to complete; an explanation and directions are included. The completion of the survey will not take much time but will provide valuable information on HIV/AIDS education. Once complete, my research will help other districts form their HIV/AIDS curriculum.

The enclosed consent form details the study and confidentiality; your name will not be used. Also, as your principal was informed, all district, school, and personnel information will be kept confidential. These surveys have been temporarily coded only to track responses.

I would appreciate your prompt attention to my request. Please complete the survey and return it and the signed consent form in the self-addressed stamped envelope. Any questions may be directed to me at the above address. Thank you in advance for your time and assistance.

Respectfully,

Timothy A. Sheets

Survey of Individuals Responsible for HIV/AIDS Instruction

The purpose of this survey is to collect information about the content of the HIV/AIDS curriculum in your school and to gather information about the personnel providing the HIV/AIDS instruction. Your answers are important in the understanding of how this subject is addressed in the public high schools of Fayette, Greene, and Washington counties, Pennsylvania.

Please take a few minutes to complete the survey and return it in the enclosed, self-addressed, stamped envelope along with the signed consent form. All personal information will be kept confidential. Your cooperation is very much appreciated.

What is your current position? _____

How many years have you been in this position? _____

What is/are your area(s) of certification? _____

Please describe any HIV/AIDS prevention/education training you have had:

Grade levels in your school: _____

Number of students in your school: _____

In what grade level(s) is the HIV/AIDS curriculum in your school provided? _____

In what classes is the information provided? _____

Please circle if any of the following were involved in developing the HIV/AIDS curriculum in your district:

Board of Education Teachers Parents Community members

Did the school receive any professional guidance in the preparation of the development of the curriculum?

YES NO From who? _____

Is material concerning the curriculum available to the parents? YES NO

Is parental approval required for student participation? YES NO

Is information about any other sexually transmitted diseases taught? YES NO

Please indicate which of the following topics are included (I) in your HIV/AIDS curriculum and which are currently being taught (T) to the students?

- | | | |
|--|---|---|
| 1. Identification of the human immunodeficiency virus (HIV) as the virus that causes Acquired Immunodeficiency Syndrome (AIDS) | I | T |
| 2. The risk of HIV infection can be virtually eliminated by not engaging in sexual activities and by not using intravenous drugs | I | T |
| 3. Sexual transmission of HIV is not a threat to uninfected individuals who engage in mutually monogamous sexual relations | I | T |
| 4. HIV is transmitted by sexual contact with an infected person | I | T |
| 5. HIV is transmitted by using needles or other injection equipment previously used by an infected person | I | T |
| 6. HIV is transmitted from an infected mother to her infant before or during birth | I | T |
| 7. A small number of medical personnel have been infected by direct exposure to infected blood | I | T |

- | | | |
|---|---|---|
| 8. The following are considered at higher risk of infection: | | |
| a. Individuals with clinical or laboratory evidence of infection | I | T |
| b. Males who have had sexual relations with other males | I | T |
| c. Individuals who have injected illegal drugs | I | T |
| d. Individuals who have had numerous sexual partners | I | T |
| e. Infants born to infected mothers | I | T |
| 9. No transmission from deep, open-mouth kissing has been documented. Such kissing theoretically can transmit HIV through exposure of membranes to infected blood or saliva | I | T |
| 10. In the past, medical use of blood has caused some people to become infected. However, since 1985, all donated blood has been tested for infection. Thus the risk of becoming infected from blood transfusions and blood clotting products has been virtually eliminated | I | T |
| 11. Individuals who continue to participate in sexual activities with others who are at increased risk or whose infection status is unknown should use a latex condom to reduce the risk of infection | I | T |
| 12. Although a latex condom does not provide 100% protection, it provides the best protection for people who do not maintain a mutually monogamous relationship with an uninfected partner | I | T |
| 13. Medical/biological facts | I | T |
| 14. Life skills | I | T |
| 15. Risk of infection associated with drug use | I | T |
| 16. Relationships | I | T |
| 17. Sexuality | I | T |
| 18. Moral and ethical issues | I | T |
| 19. Special populations | I | T |

APPENDIX E

Consent Form to Participate
In the Research Study

CONSENT TO PARTICIPATE IN A RESEARCH STUDY

- TITLE:** HIV/AIDS Education in the Public High Schools of Three Counties in Southwestern Pennsylvania
- INVESTIGATOR:** Timothy A. Sheets
P.O. Box 290
Richeyville, PA 15358
(724) 632-3329
- ADVISOR:** Dr. Barbara Manner, Ph. D.
School of Education
Bayer School of Natural and Environmental Sciences
Duquesne University
412-396-6106 or 5482
- SOURCE OF SUPPORT:** This study is being performed as partial fulfillment of the requirements for the doctoral degree in Educational Leadership at Duquesne University
- PURPOSE:** You are being asked to participate in a research project that seeks to investigate the HIV/AIDS curriculum and instruction in the public high schools of southwestern Pennsylvania. As part of this project I will be asking you to complete a survey concerning the HIV/AIDS curriculum in your school. The completion of the survey should not take more than 15 – 30 minutes. This will be the only request that will be made of you.
- RISKS AND BENEFITS:** Participation in this project will not put you at any risk nor will participation provide you with any benefit, however this research will provide important information that can benefit the HIV/AIDS education program in your school and the other schools in southwestern Pennsylvania.
- COMPENSATION:** You will not receive any compensation for your participation. Participation will also require no monetary cost of you; an envelope is provided for the return of your response to the investigator.

CONFIDENTIALITY: Your name will never appear on any survey or research instruments. Codes attached to surveys to track responses will be destroyed once surveys are completed and no identity can then be made in the data analysis. All written materials and consent forms will be stored in a locked file in the researcher's home. Your responses will only appear in quantitative summaries. Following federal guidelines, all materials will be destroyed five years following completion of the study.

RIGHT TO WITHDRAW: You are under no obligation to participate in this study. You are free to withdraw your consent to participate at any time.

SUMMARY OF RESULTS: A summary of the results of this research will be supplied to you, at the end of the study, upon request.

VOLUNTARY CONSENT: I have read the above statements and understand what is being requested of me. I also understand that my participation is voluntary and that I am free to withdraw my consent at any time and for any reason. On these terms, I certify that I am willing to participate in this research project.

I understand that should I have any further questions about my participation in this study, I may call Dr. Paul Richer, Chair of the Duquesne University Institutional Review Board at 412-396-6326.

Participant's Signature

Date

Researcher's Signature

Date

APPENDIX F

Second Request for Survey Completion

Timothy A. Sheets
P.O. Box 290
Richeyville, PA 15358

724-632-3329
tasheets@juno.com

November _____, 2004

Dear Educator,

Recently, you were mailed a brief survey about the HIV/AIDS curriculum in your school. I hope that you have had an opportunity to complete the survey and return it to me. If you have not done so, I would greatly appreciate your cooperation and participation in this study.

If you did not receive the survey or have misplaced it, please feel free to contact me to request a replacement. You may contact me by:

E-mail: tasheets@juno.com
Telephone: 724-632-3329
Mail: P.O. Box 290
Richeyville, PA 15358

Please provide your name and mailing address so that I may promptly send you another survey.

I would like to thank you in advance for your assistance. I value the expertise and teaching experience which you can contribute.

Sincerely,

Timothy A. Sheets

