Progress in Efforts to Prevent the Spread of HIV Infection Among Youth

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Synopsis

The Human Immunodeficiency Virus (HIV) that causes AIDS will continue to threaten public health for years to come. Despite some popular misperceptions, adolescents are at risk of infection. Twenty percent of persons reported with AIDS have been ages 20 through 29. Given the long incubation period between HIV infection and AIDS, some of these young adults probably were infected while they were teenagers. Young people must develop the skills they will need to avoid HIV infection and other related health problems.

In 1987, the Centers for Disease Control (CDC) launched a national program to help schools and other agencies that serve youth across the nation provide effective health education to prevent the spread of HIV. CDC supports and works closely with national health and education organizations, State and local education agencies, colleges and universities, and local health departments to establish HIV prevention policies and programs, training and demonstration centers, information development and dissemination activities. The impact of these efforts are assessed through applied surveillance and evaluation research. Through this system, CDC is attempting to institutionalize the means for continuously providing educational programs that will be effective in preventing HIV infection and other important health problems.

SINCE THE HUMAN IMMUNODEFICIENCY virus (HIV) epidemic began, adolescents have been at risk of infection. In 1988, AIDS was the sixth leading cause of death among persons ages 15-24 (*1*). While only 2 percent of the AIDS cases reported in the United States have occurred among persons younger than 20, a full 20 percent of all persons reported with AIDS have been ages 20 through 29 (*2*). With a median incubation period of approximately 10 years between acquiring HIV infection and onset of AIDS symptoms, some of these persons ages 20-29 probably were infected in their teens.

While it is difficult to assess how many young people are becoming infected with HIV, data from the Public Health Service's national HIV seroprevalence surveys provide information for some subpopulations. Among students tested anonymously at 19 college health centers, the rate of persons positive for HIV infection ranged from 0 percent to 0.9 percent (*3*). From October 1985 to December 1989, nearly 2.5 million persons applying for military service were screened for HIV antibodies. The cumulative seroprevalence was 0.12 percent (*4a*). The overall HIV seroprevalence among Job Corps applicants screened between 1987 and 1989 was 0.36 percent. Approximately 60,000 entrants are screened each year (*4b*). Among persons ages 15-24 anonymously tested in the Sentinel Hospital Survey from 1986 through 1988, 0.5 percent tested positive for HIV infection (*4c*).

Results from the Secondary School Student Health Risk Survey conducted by the Centers for Disease Control (CDC) in 1989 indicated that many of the nation's high school students engage in behaviors that could put them at risk for becoming infected with HIV (*5*). The survey findings are discussed in greater detail in a subsequent section.

Young people must establish the skills they need to avoid HIV infection and other related health

problems, such as sexually transmitted diseases, unintended pregnancies, and alcohol and drug abuse. Schools have both responsibility and strategic capacity to ensure that young people understand the nature of the epidemic and how to protect themselves from becoming infected with HIV. More than 46 million students attend more than 100,000 elementary and secondary schools in almost 16,000 school districts every school day. Another 13 million students attend colleges and universities (*6*). Schools offer a vital means for providing HIV prevention education for these young people.

Since 1974, CDC has worked with schools and other youth-serving agencies to develop, evaluate, and improve health education programs that address a range of health-risk behaviors among young people. In 1986, CDC was given the responsibility for helping national, State, and local education agencies provide effective HIV education for youth. In 1987, CDC's Division of Adolescent and School Health (DASH) launched a national program to help schools and other agencies that serve youth across the nation provide effective health education to prevent the spread of HIV (*7,8*).

The national program was based on the principle that the specific scope and content of HIV education should be locally determined and should be consistent with parental and community values. This national program, designed to institutionalize effective health education to prevent the spread of HIV, initially employed six related components: national organizations, State and local education agencies, training and demonstration centers, information development and dissemination, surveillance, and evaluation. Two additional components were added to address college and university students and young people in high-risk situations.

(A) National Organizations Awarded Cooperative Agreements for Implementing School Health Education to Prevent HIV Infection and Other Important Health Problems

American Alliance for Health, Physical Education, Recreation and Dance
American Association of School Administrators
American College Health Association
American Federation of Teachers
American Medical Association
American School Health Association
Center for Population Options
Council of Chief State School Officers
Education Development Center
ETR Associates
National Association for Equal Opportunity in Higher Education
National Association of State Boards of Education
National Center for Health Education
National Coalition of Advocates for Students
National Coalition of Hispanic Health and Human Services Organizations
National Commission on Correctional Health Care
National Education Association
National Network of Runaway and Youth Services, Inc.
National Organization of Black County Officials
The National PTA
National Rural and Small Schools Consortium
National School Boards Association
National School Health Education Coalition

National Organizations

DASH provides fiscal support and technical assistance to 23 national organizations in the private sector and to the Public Health Service's Indian Health Service so they can help schools and other organizations that serve youth implement effective HIV education within more comprehensive school health education programs (box a). These organizations and their State and local affiliates have the capacity to help implement and maintain HIV education for young people in virtually every community. CDC enables these organizations to achieve synergistic results and to avoid duplication of efforts. By working with these agencies, CDC can help implement a national rather than a Federal program.

Each national organization employs an average of three full-time staff members to implement national HIV prevention education programs. Program activities typically include:

- training for constituents or target populations,
- assisting State and local education agencies, and other agencies that serve youth to develop appropriate policies and programs, and
- developing materials.

For example, the National Association of State Boards of Education (NASBE) provides technical assistance to State school boards and other key decision makers (*9,10*). In addition, NASBE and the Council of Chief State School Officers conduct and publish an annual survey of State actions to

(B) HIV-Related School Health Publications Produced by National Organizations with Support from CDC Cooperative Agreements, through February 1991

American Alliance for Health, Physical Education, Recreation and Dance

- AIDS: What Young Adults Should Know (secondary level curriculum) (1989)
- AIDS: What Young Adults Should Know (Spanish) (1991)
- A Disease Called AIDS (elementary level curriculum) (1990)
- A Disease Called AIDS (Spanish) (1991)
- Summary of the National Forum on HIV/AIDS Prevention (1989)
- Education for Children with Special Education Needs (1989)

American Federation of Teachers

- It's Up to You: Building a Safer Approach to Universal Hygiene (1990)

American Medical Association

- Code Blue: Uniting for Healthier Youth (with National Association of State Boards of Education) (Not dated)

Council of Chief State School Officers

- Concerns: A Concern About AIDS and Adolescence (1988)
- Concerns: A Concern About Meeting the Health Needs of Children and Youth, Particularly Those at Risk of School Failure (1989)
- Directory of School Health and Physical Education Program Staff in State Education Agencies (1990)
- Profile of State HIV/AIDS Education (1989)

Education Development Center

- Growing Healthy: AIDS Integration, K-12 (1989)
- HIV Education in the Classroom: A Guide to Health Trainers to Prepare Teachers to Teach about HIV in the Context of Comprehensive School Health Education (1990)
- Preventing AIDS: A Curriculum for Middle School and a Curriculum for Junior/Senior High School Students (1990)
- Schools Face the Challenge of AIDS: A Manual to Help Schools and Communities Develop Policies and Programs to Prevent the Spread of AIDS (1991)
- Teenage Health Teaching Modules: AIDS Integration, 7-12 (1989)

ETR Associates

- Training Educators in HIV Prevention: An Inservice Manual (1990)

National Association of State Boards of Education

- Code Blue: Uniting for Healthier Youth (with American Medical Association) (Not dated)
- Effective AIDS Education: A Policymaker's Guide (1988)
- How Schools Work and How to Work with Schools (Not dated)
- Someone at School Has AIDS: A Guide to Developing Policies for Students and School Staff Members who are Infected with HIV (1989)
- The NASBE HIV/AIDS Education Survey (1988, 1989)

National Coalition of Advocates for Students

- Criteria for Developing and Selecting HIV Curricula (1988)
- Guidelines for HIV and AIDS Student Support Services (1990)

National PTA

- AIDS Education and Home and School: An Activity Guide for Local PTA Leaders (Update, 1990)
- Parents, Let's Talk about AIDS (Update, 1991)

National Education Association

- Responding to HIV and AIDS (Update of The Facts about AIDS: A Special Guide for NEA Members, 1989)

National Network of Runaway and Youth Services, Inc.

- Safe Choices (1990)

National Rural and Small School Consortium

- A Resource Guide to Effective HIV Education in America's Rural Schools (Update 1990)

National School Boards Association

- AIDS in the Public Schools (1986)
- HIV Prevention Education in the Nation's Public Schools (1990)
- Leadership for AIDS Education (1989)
- Reducing the Risk: A School Leader's Guide to AIDS Education (1989)

NOTE: Further information about each of these materials and the means to acquire them is available through the Combined Health Information Database (CHID) AIDS School Health Education subfile. CHID is available for online searching through MAXWELL ONLINE, BRS Information Technologies Division, 1200 Route 7, Latham, NY 12110; tel. (800) 289-4277.

support HIV education (*11*). Beyond that, in the fall of 1989, NASBE and the American Medical Association formed the National Commission on the Role of the School and Community in Improving Adolescent Health. The Commission's report recommended several broad strategies for schools and communities to improve adolescent health, encompassing strategies to prevent HIV infection (*12*).

Another example of a national organization that works to provide HIV education is the National Network of Runaway and Youth Services, whose 700 member and affiliate agencies serve runaway and homeless youth throughout the nation. The network trains the staff members of these agencies to provide HIV education for youth in high-risk situations. It also annually surveys runaway and homeless youth shelters to assess the extent to which they provide HIV education for youth. With support from CDC, the network has developed an HIV education curriculum specifically for youth in high-risk situations (*13*). Modules of this curriculum are designed for use by street outreach programs, shelters, telephone hotline programs, detention centers, and group homes, and for use in individual and family counseling sessions.

The National Coalition of Advocates for Students (NCAS) provides support for HIV prevention education in nontraditional settings, and provides assistance in developing and using HIV education materials sensitive to the needs of ethnic minority youth. For example, NCAS developed an audiotape in Haitian Creole for Haitian adolescents (*14*). The tape features teenagers talking about AIDS-related fears and concerns that are specific to the Haitian community, and it includes information that helps correct common misconceptions about the disease. To reach Latino migrant students, NCAS developed a bilingual HIV curriculum and trains staff members of State and local education agencies to implement it (*15*).

With support from CDC, 14 national organizations have produced 32 HIV-related publications (box b). These publications provide guidance for developing HIV-related policies and procedures and for designing and implementing HIV prevention education programs for youth as well as for professionals who work with them.

State and Local Education Agencies

CDC provides fiscal support and technical assistance to every State education agency, the District of Columbia, the Commonwealth of Puerto Rico,

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American Samoa, Guam, the U.S. Virgin Islands, and the 16 local education agencies that serve cities with the highest number of reported AIDS cases (box c). CDC works directly with these education agencies to enable them to help schools and other agencies that serve youth implement programs to prevent HIV infection and other important health problems.

Each funded education agency is carrying out core program activities that include (*a*) developing education policies, (*b*) training teachers and other school personnel, (*c*) developing and disseminating materials, (*d*) monitoring the prevalence of student risk behaviors and the status of HIV education in its jurisdiction, and (*e*) evaluating the impact of its program.

Annual surveys indicate that the number of States that require HIV education has increased from 7 in 1987 to 32 in 1990 (*16*). According to a 1989 survey, 66 percent of all school districts required HIV education in the 1988–89 school year. Most school districts that did not require HIV education had fewer than 450 students. Of all school districts that required HIV education, more than half began providing it by the fifth grade. More than 70 percent of districts provided HIV education during the seventh grade, and more than 60 percent also provided HIV education during the tenth grade. However, only about 15 percent provide HIV education at the 11th and 12th grade levels. In addition, 83 percent of teachers who instructed students about HIV had received HIV education training (*17*).

Training and Demonstration Centers

In 1987, three national training and demonstration centers were established to help teams from State and local agencies responsible for school or community-based health education implement state-of-the-art HIV prevention education for youth. Two centers focus on State-level training programs, and one center addresses the needs of teams from local jurisdictions.

(C) Local Education Agencies Awarded Cooperative Agreements for Implementing School Health Education to Prevent HIV Infection and Other Important Health Problems

Baltimore City Schools
Boston Public Schools
The School Board of Broward County, FL (Fort Lauderdale)
Chicago Public Schools
The School Board of Dade County, FL (Miami)
Dallas Independent School District
Denver Public Schools
Jersey City Board of Education
Los Angeles Unified School District
Newark, NJ Board of Education
New York City Board of Education
Orleans Parish, LA School Board (New Orleans)
School District of Philadelphia
San Diego Unified School District
San Francisco Unified School District
Seattle Public Schools

The Michigan Department of Education and the New York Department of Education each conduct training programs that focus on activities that can be undertaken by State education agencies and other State-level organizations. They use experiences from their own programs to demonstrate successes and mistakes. The training sessions address issues essential to effective HIV education, including integrating HIV education into comprehensive school health education and engaging parents and the community in HIV education.

The training center operated by the San Francisco Unified School District trains professionals who work with youth in cities across the nation. This center emphasizes a communitywide approach to preventing HIV infection among youth who are both in and out of school. Cities are invited to send teams that usually include a school-district administrator, two school-district staff members who are involved in teacher training, one school board member or parent, and two representatives from agencies or programs serving youth who may be at high risk for HIV infection. Team building and collaboration are stressed.

In addition, beginning in September 1989, CDC worked with the Education Development Center (EDC) to establish training centers in 13 States to train teachers to implement comprehensive school health education, including education to prevent HIV infection. Since then, these centers have trained more than 12,000 teachers from more than 1,000 school districts.

In 1990, the U.S. Senate Appropriations Committee directed CDC to support

> ". . . a comprehensive approach to health education in the schools including AIDS, IV drug abuse, sexually transmitted diseases, cancer prevention, and heart health, to name a few . . . [by establishing] . . . 30 new regional teacher training centers focused on comprehensive school health education" (*18*).

CDC consequently established a comprehensive school health education teacher training center at 13 additional sites. Currently, there are 24 training centers in 23 States (box d). Two of the original centers have left the program. CDC and EDC plan to establish a teacher training center in every State.

Information Development and Dissemination

CDC also supports the development and dissemination of state-of-the-art information that can be used to increase the effectiveness of HIV prevention education. In 1987, to help State and local education agencies select, modify, or develop HIV prevention policies, programs, and materials, CDC worked with representatives from many national, State, local, and Federal organizations and agencies to develop "Guidelines for Effective School Health Education to Prevent the Spread of AIDS" (*19*). This publication provides guidelines for planning HIV education programs, preparing education personnel, assuring teacher qualifications, defining the purpose of HIV education, determining essential content for specific grade levels, assuring sufficient curriculum time and resources, and assessing programs.

To help disseminate HIV education information, CDC added the AIDS School Health Education Subfile to the U.S. Public Health Service's Combined Health Information Database (*20*). This subfile currently contains abstracts of more than 700 HIV education materials, including HIV education policies, teacher training programs, films and filmstrips, brochures, journal articles, and reports. Each entry includes information about how to acquire the material described. New abstracts are added to the cumulative database every 3 months, and they can be accessed using a computer with a modem. (Information regarding access can be obtained from MAXWELL ONLINE, BRS Informa-

tion Technologies Division, 1200 Route 7, Latham, NY 12110, telephone 800-289-4277.)

CDC also plans and implements national and regional conferences for representatives of national, State, and local health and education agencies in the public and private sectors. For the past 3 years, DASH and the Society of State Directors of Health, Physical Education, and Recreation have sponsored an annual conference on school health leadership in State departments of education. This conference is convened simultaneously with conferences sponsored by the Association of State and Territorial Directors of Public Health Education. The conference allows State departments of education and health to collaborate in improving HIV education within more comprehensive school health programs.

Surveillance

The surveillance system has two components: (*a*) one that regularly measures important health-risk behaviors among adolescents, and (*b*) one that regularly measures the availability of HIV education and comprehensive school health education among the nation's schools.

Measuring risk behaviors among youth. Beginning in late 1987, State and local education agency representatives developed a common survey instrument for measuring HIV-related knowledge, beliefs, and behaviors among high school students (in grades 9 through 12) in their respective jurisdictions (*21*). During the spring of 1988, nine State and six local education agencies conducted this survey (*22*).

A year later, in 1989, CDC used a modified version of this instrument to survey a national probability sample of high school students (*23*). The school response rate was 81 percent; the student response rate was 83 percent; and 8,098 students completed the survey. The survey found that a total of 59 percent of the students reported they had had sexual intercourse. Fully 24 percent reported having had four or more sex partners. Of the students who reported having had sexual intercourse, 25 percent said that they sometimes or rarely used a condom, and 14 percent said they never used a condom. In addition, about 3 percent of high school students reported they had injected illicit drugs and about 1 percent reported they had shared needles (*24*). The survey also found that nearly all students correctly identified having sex with an infected person and sharing needles as the two most frequent modes of HIV transmission.

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However, 12 percent believed that birth control pills provide some protection against HIV infection, and 23 percent thought it possible to tell whether people are infected by looking at them. Thirty-six percent of students believed that donating blood could result in HIV infection, and 55 percent thought insect bites could transmit HIV (*25*).

In the spring of 1989, 32 State and 10 local education agencies conducted surveys with the same basic survey instrument (*26*). These State and local surveys are more useful than national surveys because they provide data that can be used for State and local program planning and evaluation.

These surveys provided information about risks specifically for HIV infection among adolescents. Many health and education agencies suggested, however, that other priority health-risk behaviors be measured at the same time. To identify priority health-risk behaviors, CDC examined the leading causes of death, illness, and social problems among youth and adults. The following 6 categories of health-risk behaviors were identified:

1. behaviors that result in intentional and unintentional injuries,
2. tobacco use,
3. alcohol and other drug use,
4. sexual behaviors that result in sexually transmitted diseases, including HIV infection, and unintended pregnancy,
5. dietary behaviors, and
6. physical activity.

At meetings conducted by CDC, representatives from more than 30 Federal agencies, every State, and 17 local education agencies and the scientific experts in each of the six categorical areas identified priority health risk behaviors in each category and developed an instrument to measure each priority health-risk behavior. Consequently, in

(D) Comprehensive School Health Education Network Centers

California State Department of Education (1991)
Florida Department of Education (1989)
Indiana State Board of Health (1989)
Kansas State Department of Education (1991)
Louisiana State Department of Education (1991)
Massachusetts Department of Education (1991)
Michigan Department of Education (1989)
Mississippi State Department of Education (1991)
Montana Office of Public Instruction (1991)
Nevada Department of Education (1991)
New Hampshire State Department of Education (1991)
New Jersey State Department of Education (1991)
New York State Education Department (1991)
Pennsylvania Department of Education (1989)
Puerto Rico Department of Education Health Program (1991)
Rocky Mountain Center for Health Promotion and Education (1989)
South Dakota Department of Health (1989)
University of Central Arkansas (1989)
University of North Carolina at Greensboro (1989)
University of Texas at Austin (1989)
Vermont Department of Education (1989)
Washington State Education Department (1991)
West Virginia Department of Education (1991)

1990, the Youth Risk Behavior Surveillance System (YRBSS) was established to monitor the prevalence of these behaviors (*27*).

In the spring of 1990, 24 States and 8 cities implemented the YRBSS with representative samples of high school students. At the same time, CDC also implemented a school-based survey with a nationally representative sample of high school students. This survey provides national data against which State and local surveys can be compared.

In 1992, CDC plans to add a Youth Risk Behavior Supplement to the National Health Interview Survey to compare the prevalence of risk behaviors among school students, drop-outs, college students, and college-age youth who do not attend college.

Measuring availability of instruction. The other surveillance system assesses the extent to which HIV education is being provided to young people. Each of the 71 State and local education agencies supported by CDC is encouraged to collect information regularly about the percentage of schools providing HIV education, of schools providing HIV education within comprehensive school health education, and of students receiving HIV education.

A survey to measure district requirements for HIV education and comprehensive school health education among a convenience sample of the nation's 16,000 school districts was conducted by the National School Boards Association (NSBA) during the spring of 1989 (*28*). NSBA and the American Association of School Administrators repeated the survey with a national probability sample of school districts in the spring of 1990. These results will be published after data analysis is completed. The Council of Chief State School Officers and the National Association of State Boards of Education conduct surveys to measure State-level policies related to HIV and comprehensive school health education (*29*).

Evaluation

The purpose of DASH's evaluation system is to measure the effectiveness of HIV education programs and to help State and local education agencies assess and improve the quality of their programs (*30*). In 1988, CDC awarded a contract to IOX Assessment Associates, a private research firm in Los Angeles, to support these activities.

Since 1988, CDC has sponsored workshops to help State and local education agencies plan evaluations of their HIV education programs. Representatives from funded agencies learn how to apply principles of behavioral epidemiology, collect process and outcome data, measure sensitive behaviors, select an appropriate evaluation design, and report results.

In 1989, CDC began providing additional program evaluation technical assistance to the Michigan, New York State, and San Francisco departments of education. CDC also helped the training and demonstration centers at these locations provide help to teams from other States and cities in evaluating their own programs.

In the fall of 1990, CDC and IOX conducted a one-day site visit to each of 30 departments of education to discuss program goals and objectives and determine evaluation priorities. After each visit, IOX staff members developed an individualized evaluation plan for each site. Each site is currently implementing its plan, which will result in an annual evaluation report.

In early 1991, CDC began to provide continuing technical assistance to 15 State and local education agencies to help them further develop and imple-

ment plans for evaluating their HIV education programs. Technical assistance is provided through site visits and telephone consultation and may continue over several years. Specific assistance includes identification of evaluation activities to enhance programmatic decisions; selection and implementation of data-gathering processes; identification, modification, or generation of assessment instruments; data analysis techniques; and reporting strategies. Currently, CDC is developing a series of evaluation materials that include guidelines and instruments to assess HIV education policies, teacher training, curriculums, and student outcomes.

CDC also provides intensive assistance to selected sites to help examine the effectiveness of model programs. Two studies are currently being conducted by local education agencies with assistance from CDC to examine the effects of newly instituted HIV prevention programs on student risk behaviors. In addition, up to three contracts were to be awarded in the fall of 1991 to develop, implement, and report on the effectiveness of school based interventions to reduce behaviors that result in HIV infection and other sexually transmitted diseases.

New Initiatives

College and university students. In 1990, CDC awarded a cooperative agreement to a university in each of five States among those with the highest cumulative incidence of AIDS. Each university will establish a consortium of colleges, universities, trade schools, and other agencies in the State to develop and implement education programs that could prevent the spread of HIV infection and other health problems among college students in the State and to train school administrators and teachers to help implement effective health and HIV education. The five universities are Illinois State University, Rutgers (the State University of New Jersey), San Diego State University, Southwest Texas State University, and the University of Central Florida. Additional support has been provided to Rutgers and San Diego State to enable each of them to train teams of personnel from universities in other States who may be interested in establishing such consortia in their own States.

Youth in high-risk situations. In 1991, CDC launched a new initiative to intensify efforts to prevent HIV infection among young people in high-risk situations such as runaways, homeless youth, juvenile offenders, migrant youth and so on. This initiative will help local health departments in four cities with the highest cumulative incidence of AIDS build their capacity to prevent HIV infection and other relevant health problems among these youth and to work closely with community-based organizations that serve these young people.

Conclusion

The virus that causes AIDS will continue to threaten public health for a long time to come. Each year, a new cohort of young Americans will physically mature, establish sexual lifestyles that may last for decades, and consequently determine their own risk for HIV infection. Some may increase this risk by injecting illicit drugs. Schools and other agencies that serve youth could do much to help them avoid injecting drugs, and to reverse the trend toward precocious sexual behavior that results not only in HIV infection, but other sexually transmitted diseases, unintended pregnancies, and related social problems as well. However, reducing behaviors that result in HIV infection and other important health problems among youth, just like developing an effective HIV vaccine or treatment, will require careful planning, research, time, and sustained effort.

Much has been accomplished since 1987 to provide effective HIV education for the nation's young people. National and State infrastructures have been established; health and education professionals are working together as partners. Schools and other agencies that serve youth have implemented the first generation of interventions to educate young people about HIV, and have begun to evaluate the effectiveness of these interventions. As we learn from our experience in implementing and evaluating these education interventions, successive generations of more effective interventions must be be produced and institutionalized.

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