Human Immunodeficiency Virus (HIV) Infection

American College of Physicians and Infectious Diseases Society of America*

Knowledge about the epidemiology, diagnosis, and treatment of human immunodeficiency virus (HIV) infection gained since 1988 has necessitated an update of our previously published policies. Important advances have been made in the treatment of HIV infection and the acquired immunodeficiency syndrome (AIDS), resulting in a prolongation of the symptom-free period. Transmission of HIV infection from a dentist to several of his patients is believed to have occurred. Heterosexual transmission of HIV infection is increasing in importance.

This statement emphasizes the ethical imperative to care for all patients; the need for health care professionals to adhere scrupulously to universal precautions because of the low but definite risk for transmission of HIV in the health care setting; the expanded recommendations for HIV testing to identify infected persons as early as possible; and the need for national leadership in public education, public policy development, and health care funding.


The American College of Physicians and the Infectious Diseases Society of America have jointly published two policy statements on AIDS, the first in 1986 (1) and the second, revised and expanded, in 1988 (2). Since the last statement, new developments suggest the need for a re-examination and restatement of our policies relating to HIV infection and AIDS. First, advances have been made in the treatment of AIDS and HIV infection, including the capability of substantially prolonging the

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The pre-symptomatic period in HIV-infected persons. Second, concerns about HIV transmission in health care settings have been heightened in the minds of both the public and health care professionals. Third, more attention is being paid to some of the unique manifestations of AIDS in women. Finally, heterosexual transmission of HIV infection is steadily increasing.

In this statement, we emphasize the ethical imperative to care for all patients; recognition of the very low but definite risk for transmission of HIV in the health care setting and of the need for HIV-infected health care professionals to adhere scrupulously to universal precautions; expanded recommendations for HIV testing of patients to identify infected persons who might benefit from early treatment; and the need for stronger national leadership in public education, public policy development, and health care funding.

Background

June 1991 marked the end of the first decade of the worldwide epidemic of human immunodeficiency virus (HIV) infection and the acquired immunodeficiency syndrome (AIDS). As of that date, 182,834 cases of AIDS had been reported in the United States (3). The Centers for Disease Control and Prevention (CDC) has estimated that there are approximately 1 million HIV-positive persons in the country (4), most of whom are asymptomatic and many of whom are unaware of their seropositivity. Homosexual and bisexual men and intravenous drug abusers have accounted for most of the cases, but in recent years the rate of increase in the number of new cases among homosexual and bisexual men has slowed and has increased among injecting drug abusers (5). The number of cases of AIDS resulting from heterosexual transmission of HIV has been increasing steadily. Minority populations are disproportionately represented, with 44% of cases of AIDS having occurred among African-Americans and Hispanics. The CDC has estimated that the cumulative number of patients with AIDS since the beginning of the epidemic will be between 390,000 and 480,000 by the end of 1993. Sixty-eight percent of reported patients have died (6). The acquired immunodeficiency syndrome is now the second leading cause of death among men ages 25 to 44 years and the sixth leading cause of death among women in that age group (7).

The World Health Organization estimated that there were 8 to 10 million HIV-infected persons worldwide in 1991, with heavy concentrations in developing countries in Africa and Southeast Asia (8). The World Health Organization re-estimated this number at 12 to 14 million in 1993. No reliable estimates of total deaths are available on a worldwide basis, but the number probably exceeds 1 million. It is estimated that more than 1
million people worldwide are living with symptomatic AIDS.

These raw numbers, however large, do not begin to reflect the human tragedy caused by this pandemic. The numbers do make it clear that the AIDS epidemic will continue to challenge the health care professions and society well into the 21st century.

Recent advances in AIDS research have enabled physicians to prolong symptom-free intervals, to prolong productive life span even after an AIDS-defining illness, and to improve treatment of opportunistic infections. For example, alternative drugs are now available for the prevention and treatment of Pneumocystis carinii pneumonia. New antiviral drugs (ganciclovir and foscarnet) are available for the treatment of cytomegalovirus infection, and two new antiretroviral drugs, dideoxynosine (ddI) and dideoxyctydine (ddC), have been approved by the Food and Drug Administration.

The natural history of HIV infection is now better understood (9–11). The “latent period” may be less than 1 year in some persons or longer than 10 years in others; the reasons for such broad differences are not yet understood. Most persons remain asymptomatic for 6 to 10 years. The infection, although asymptomatic, is not truly latent because this period is characterized by a gradual reduction in CD4 cell counts. The antiretroviral drug presently available, zidovudine (AZT), is now known to be effective in prolonging the asymptomatic state even longer in patients whose CD4 cell counts have declined to 500/mm³ or less (12, 13).

Improved treatments have extended the survival time of persons with AIDS. In the early years of the epidemic, the average time from diagnosis of AIDS to death was less than 12 months. More recent estimates place the figure at about 20 months (14, 15). Further improvements in antiretroviral therapy and treatment of opportunistic infections are expected to increase overall survival even more.

The number and character of opportunistic infections seen in patients with AIDS have changed. The striking success of prophylactic therapy for P. carinii pneumonia has resulted in a decrease in the number of cases of P. carinii pneumonia seen in many medical centers (16). Before such preventive treatment was introduced, P. carinii pneumonia was by far the most common AIDS-defining illness encountered in HIV-positive patients. That is often no longer the case, and other opportunistic infections of the lung and lymphatic system are becoming relatively more prominent.

In addition to Mycobacterium avium-intracellulare infections, Mycobacterium tuberculosis infection is increasingly recognized as a major hazard in severely immunocompromised patients. Outbreaks of tuberculosis have occurred in hospitals in New York and Miami (17), traceable to highly immunosuppressed patients with AIDS in hospitals in which other patients had unrecognized or inadequately treated cases of tuberculosis. These outbreaks have resulted in transmission to health care personnel as well. The multidrug-resistant nature of the mycobacteria responsible for recent outbreaks (18) has enormously complicated their management and control and has sharply increased mortality rates.

The increased life expectancy of HIV-infected patients comes with a price. Many of the new treatments are expensive, and many HIV-infected patients are unable to afford them. Hellinger (19) has estimated that the average cost of treating a person with AIDS is $32 000 per year, with an average lifetime cost of $85 000. The total cost of treating all persons with HIV infection in the United States for the year 1991 was estimated to be $5.8 billion. Thus, the successes of biomedical research and improved therapies for HIV-infected patients exacerbate the serious problems of access to and financing of care for these persons.

Other areas of AIDS research have also had successes, although the improvements are perhaps less immediate. Newer generations of confirmatory tests have virtually eliminated falsely positive results. Highly sensitive tests using polymerase chain reaction technology are now available that detect the presence of the virus by identifying minute amounts of HIV nucleic acid (20). Vaccine development continues steadily, and progress in this area is more promising now than ever before (21–23).

A new AIDS case definition by the CDC, introduced in 1993, has broadened the definition to include asymptomatic HIV-infected persons with CD4 cell counts less than 200/mm³ (24). In addition, cervical cancer, pulmonary tuberculosis, and recurrent pneumonia have been added as AIDS-defining illnesses in HIV-positive patients. These changes have resulted in a sharp increase in the number of reported patients with AIDS but have not affected the overall rate of increase of new patients.

In 1990, the CDC reported the first case of apparent transmission of HIV infection from a health care provider—a Florida dentist—to a patient (25). In subsequent investigations of the patients in this dentist’s practice, four additional cases were identified (26, 27). It is not known how transmission occurred, whether from direct contact with the dentist’s blood or through indirect transmission via contaminated instruments or equipment. This widely publicized outbreak has heightened public concerns about transmission in the health care setting.

Recently, other cases of HIV-infected health care providers have been identified, either after they have died or left practice, and have prompted retrospective patient notification programs, or “look-back” studies (28–34). In these studies, HIV testing was offered to former patients of the HIV-positive provider.

Some of these investigations have revealed serious gaps in the observance of universal precautions by health care professionals. Infection control procedures in the office of the Florida dentist, for example, were identified as having been seriously deficient. In another instance, an HIV-positive physician continued to have direct patient contact despite having open exudative lesions on his hands and arms.

Health care professionals need to understand and appreciate public concerns about this issue and not simply dismiss those worried as being uninformed about the nature or level of risks. All reasonable steps must be taken to reassure the public and to ensure that no clinically significant risk for transmission of HIV infection occurs in the health care setting.
Much work remains to be done to address the serious social, ethical, and public health implications of this catastrophic disease. Persons with HIV infection continue to face discrimination, including loss of employment, exclusion from the community, denial of insurance, eviction from housing, ostracism of children in school, and difficulty in obtaining medical and dental care. Persons infected with HIV face substantial barriers in obtaining access to basic care (35–38). These barriers are greatest for minority groups, especially minority women. Injection drug users who are infected with HIV may have problems obtaining drug treatment. Seropositive women may have difficulty finding appropriate prenatal and perinatal care, particularly if they also use injecting drugs.

Thus, the need is compelling for an expanded national program emphasizing public education, prevention, and coordinated services that can be managed at the local level. These programs should focus on preventing infection through education and behavior modification.

Positions

The positions stated are summarized in Table 1.

Position 1

The American College of Physicians and the Infectious Diseases Society of America believe that physicians, other health care professionals, and hospitals are obligated to provide competent and humane care to all patients, including HIV-infected patients. The denial of appropriate care to a class of patients for any reason is unethical.

Rationale

Physicians are ethically obligated to provide high-quality, nonjudgmental care without regard to personal risk, real or perceived. It is inappropriate for any health care professional to compromise the treatment of a patient on the grounds of unacceptable personal risk. This fundamental principle of medical ethics cannot be compromised (39).

A patient-physician relationship is established by a patient requesting a physician to provide care and the physician agreeing to do so. The physician thereby incurs a moral responsibility to provide the best care possible. If a physician feels inadequate or incapable of providing such care in a given circumstance, the physician must refer the patient to a competent colleague who is able and willing to provide care. Refusal of a physician to care for a specific category of patients, such as patients who have AIDS or who are HIV positive, is morally indefensible.

The ethical principle of providing care to all patients with HIV infection is not universally accepted (40). Increasing numbers of physicians training in internal medicine and other primary care disciplines would prefer not to care for HIV-infected patients. Half of the respondents in a 1990 survey of primary care physicians in the United States indicated that they would not, if given a choice, provide care to HIV-infected patients (41). Two thirds of the respondents, however, believed that they had a responsibility to do so.

The choice of specialty training by medical students has also been affected by the AIDS epidemic (42). The proportion of patients with AIDS seen in residency training programs is increasingly influencing students' ranking of training programs in the National Resident Matching Program. These manifestations of disinterest or disincentive in providing care to patients with AIDS may be based on judgmental attitudes toward homosexual and bisexual men and intravenous drug abusers or may be related to perceived personal risk for transmission of the disease in the health care setting. In a 1989 survey of 1745 senior residents in family practice and internal medicine training programs, 9% reported a needle-stick exposure to HIV-positive blood, and 20% more had a needle-stick exposure to blood from persons at risk but of unknown antibody status (43). Twenty-three percent of the residents indicated that, if given a choice, they would not care for patients with AIDS, and 38% indicated they were "very concerned" about the risk for occupational transmission.

The public is not likely to be reassured about the low risk for transmission of HIV from an infected physician or surgeon in the health care setting (Position 3) if a substantial number of health care professionals avoid caring for HIV-infected patients because they themselves fear transmission.

We believe that primary care physicians are obligated to become competent in the diagnosis and management of HIV-infected persons. Complicated opportunistic infections or malignancies associated with AIDS may require referral to subspecialists, but the magnitude of the problem alone dictates that HIV infection and AIDS be in the realm of competence of primary care physicians. Primary care physicians need to know how to gain access to clinical trials, experimental therapies, and "compassionate use" protocols. We recognize that there are parallel obligations to provide educational support in the form of publications and postgraduate courses to enable primary care physicians to gain and maintain competence in caring for HIV-infected patients. In addition, we must be able to counsel professional colleagues in any health care discipline who may have unwarranted perceptions or fears about risks involved in providing care to HIV-infected persons.
Testing for HIV antibody should be strongly recommended when it will benefit the patient or the patient’s contacts or when it will minimize the risk for transmission of the virus or protect the public health.

Rationale

The first enzyme immunoassay to detect antibody to HIV was licensed in March 1985. Because the goal of such testing initially was to identify HIV-positive blood and thereby protect the safety of the nation’s blood supply, the tests were designed to be highly sensitive. This purpose has been served, and transfusion-associated HIV infection has occurred only in rare instances of blood donated during the “window” of up to 3 months between HIV infection and the ability to detect HIV antibody. The estimated risk for acquiring HIV infection via transfusion of screened blood is about 1:60,000 units of blood (44). Screening for HIV has become more specific as improved confirmatory tests have become available. The confirmatory tests are highly specific when strict criteria are used to interpret the test results. The full testing sequence consists of repeatedly reactive enzyme immunoassay tests, coupled with a positive confirmatory test. A patient should not be considered infected nor should a patient be informed of a positive test result until the full test sequence, including the confirmatory test, is completed.

In the United States, all blood donors and donors of organs, tissue, semen, and ovum are tested for obvious and sound reasons. All military personnel, federal prisoners, and immigrants are required to be tested, although the appropriateness of such testing has been questioned. There is need for a systematic review of the costs and benefits of existing mandatory screening programs. Although we support offering HIV testing to immigrants entering the United States, particularly if they come from countries with high rates of HIV infection, we oppose current federal policies that bar HIV-positive visitors from entering this country. Such policies have no scientific foundation, serve no demonstrable social purpose, and are therefore unwarranted. They serve only to heighten public anxiety about the transmissibility of HIV infection.

Most HIV testing in the United States is currently done only after the person to be tested has given informed consent. This is in contrast to most other diagnostic tests, which generally do not require individual informed consent unless an invasive surgical procedure is involved. The unusual nature of HIV testing evolved out of the concerns of homosexual men about confidentiality of their health data and the discrimination encountered at all levels of society. Thus, HIV infection and AIDS were perceived initially more as civil rights issues than as public health issues. Over the course of the last decade, the pendulum has shifted in the direction of treating HIV infection and AIDS increasingly as a public health issue (45). When discrimination against persons infected with HIV has been eliminated and when seropositive persons are assured access to care, then HIV antibody testing can be treated more like other noninvasive diagnostic tests. Testing should continue to be closely linked to counseling.

Testing without consent may be appropriate in certain circumstances, such as after accidental exposure of a health care provider to a patient’s blood or testing of an unconscious or incompetent patient in the absence of a responsible decision maker. Some states have enacted legislation that permits testing without individual informed consent in such situations. In states where informed consent is mandated by law, some hospitals have incorporated into their admission consent forms a provision indicating that, in case of accidental exposure, the patient’s blood may be tested for both hepatitis B virus and HIV infection. In such circumstances, patients should be informed and counseled before testing.

The most important reasons for HIV testing are to diagnose current illness and to identify asymptomatic HIV-infected persons who could benefit from treatment or prophylactic regimens. Other justifiable reasons for testing include enabling therapeutic decision making, minimizing the risk for transmission in health care settings, providing reassurance for the worried well, and allowing large-scale anonymous testing in epidemiologic studies to define the extent of HIV infection in various population groups (46).

The diagnostic usefulness of HIV testing is self-evident in the presence of generalized lymphadenopathy; unexplained dementia; chronic unexplained fever, diarrhea, or weight loss; or infections such as tuberculosis. There are now compelling reasons to identify asymptomatic HIV-infected persons as early as possible in the course of their infection. First, antiretroviral therapy initiated when CD4 cell counts fall below 500/mm³ is now known to result in an increase in CD4 cells and prolongation of the symptom-free period of the infection. Prophylactic therapy directed against P. carinii is highly effective in persons with CD4 counts of less than 200/mm³ and in those who have recovered from an episode of symptomatic P. carinii pneumonia. Thus, the HIV-infected person gains direct benefit in learning that information as soon as possible. Second, early identification of HIV-infected persons gives physicians the opportunity to provide counseling, education in safe sexual practices, and other ways of minimizing the risk for transmission of the virus through genital secretions or blood. Third, knowledge that a patient is HIV positive may change the management of other medical problems, such as treatment of syphilis or prevention of tuberculosis.

We strongly support testing for early identification of HIV infection in patients who may have been exposed in the past. This includes persons with sexually transmitted diseases, intravenous drug abusers, homosexual and bisexual men, persons who identify themselves as at risk, women of child-bearing age with identifiable
Physicians and other health care personnel are obligated to use all reasonable measures to minimize the risk for transmission in the health care setting.

Rationale

The risk for transmission of HIV infection in the health care setting is bidirectional: that is, there is a risk for transmission from a patient to health care personnel and a risk for transmission from health care personnel to a patient. The former risk has been extensively studied and is now well quantified; quantitative information about the latter risk does not exist.

Several prospective studies of accidental HIV exposures in the health care setting, taken together, document that the risk for HIV transmission from a single percutaneous exposure to HIV-positive blood is about 0.3% to 0.4% (47-49). The risk for transmission after mucous-membrane or skin exposure to HIV-infected blood has also been reported but appears to be substantially lower than the risk from percutaneous exposure.

Although the theoretic risk for transmission of HIV from health care provider to patient was recognized early in the epidemic, no such transmission was documented until the cluster of cases was identified in the practice of a Florida dentist. During the period in which transmission is believed to have occurred, the dentist was HIV positive, had Kaposi sarcoma in the mouth, and was intermittently taking zidovudine. He himself was a patient of a dental hygienist in his office. It seems likely that transmission occurred in the dental practice, presumably in the office, but the precise mechanism of transmission is not and probably never will be known. These five patients represent the only known instances of transmission of HIV infection from a health care provider to a patient.

A number of “look-back” studies have been reported, particularly involving former patients of surgeons with AIDS and, to date, no instances of nosocomial transmission of HIV infection to patients have been documented (29-35). Such negative information is not conclusive, however, since the denominator of about 19 000 potentially exposed patients is still small in relation to even the highest risk estimate (1:42 000) (50).

In July 1991, the CDC published recommendations for the prevention of transmission of HIV and hepatitis B virus to patients during exposure-prone invasive procedures (51). These recommendations underscored the importance of continued use of universal precautions and indicated that health care professionals who carry out invasive procedures defined as “exposure prone” should know their HIV and hepatitis B virus serologic status. If infected, it was recommended that they refrain from doing such procedures unless advised otherwise by a local expert panel. Additionally, the guidelines recommended that if the infected provider continued to do exposure-prone procedures, patients be notified of the provider’s HIV or hepatitis B virus status. The CDC recommended against mandatory testing of health care workers and against restricting the practice of health care workers infected with HIV or hepatitis B virus who do invasive procedures not identified as exposure prone.

In October 1991, Congress passed legislation that requires each state public health officer to certify to the Secretary of Health and Human Services within 1 year that the state has implemented the CDC guidelines or their equivalent (52). Many health care and professional organizations, including the National Commission on AIDS, have expressed serious reservations about certain components of the CDC guidelines, and many state health departments have promulgated their own recommendations on HIV-infected health care professionals within their jurisdictions (53-61). The CDC has discontinued its efforts to identify “exposure-prone” procedures and will instead assess the equivalency of individual state health department recommendations.

As part of the development of recommendations for preventing transmission of HIV and hepatitis B virus to patients during exposure-prone invasive procedures, the CDC constructed a mathematical model to estimate the risk for transmission of HIV and hepatitis B virus during invasive procedures (62). The elements of the model included the probability of an HIV-positive surgeon having an accidental exposure to a sharp instrument during a surgical procedure, the probability of that sharp instrument recontacting the patient’s blood or open wound, and the probability of transmission after one such exposure to the surgeon’s HIV-infected blood. The high estimate of risk for seroconversion after an invasive procedure by an HIV-positive surgeon was 24 per million (1:42 000), and the low estimate was 2.4 per million (1:420 000). This risk is substantially less than
the risk for anesthesia-associated mortality and is of the same order of magnitude as the risk for death because of penicillin anaphylaxis or of HIV seroconversion after the transfusion of appropriately screened blood. This is a mathematical model, however, based on estimates and extrapolations; data on which to base a precise estimate of risk simply do not exist.

We base our policies on the HIV-infected physician on the following principles: that we are committed to preserving and enhancing the health of the public and our patients; that the risk for HIV transmission from an HIV-positive health care professional is extraordinarily small, so small that it cannot presently be measured; that this very low risk is further reduced by strict adherence to universal precautions; and, finally, that sound public health policy should be based on scientific data, not on unwarranted fear and anxiety.

**Recommendations.** We therefore make the following four recommendations to minimize the risk for HIV transmission to patients in the health care setting (Table 2):

1. All physicians should become thoroughly familiar with the principles and practices of universal precautions through periodic infection control training. Health care institutions must take steps to assure strict adherence to these basic infection control policies and procedures.

2. All physicians should undergo a voluntary self-assessment of HIV risk to identify any risk of HIV exposure, either in personal life or in the workplace. Physicians who may have been exposed should be tested to ensure prompt medical assessment and care if HIV positive and to minimize the likelihood of transmission through sexual activity.

3. Physicians who are HIV positive should seek appropriate medical care and periodic evaluations of health status from their own personal physicians. In addition, counseling should be sought, as needed, about the advisability of continuing to work in the health care setting. Such counseling should be conducted periodically, based on, for example, changing health status or emergence of new information about the risks for HIV transmission in the health care setting. The physician's personal health status, the ability of the physician to perform his or her professional duties, and the demonstrated ability to comply with infection control policies should be the sole determinants of decisions about practice alterations or limitations. There is no evidence of cognitive impairment during the asymptomatic period of HIV infection in adults (63–66); therefore, HIV positivity alone does not justify restriction of an otherwise competent health care professional. Practice restrictions or work modification, if any, should be based on individualized assessment of the physician's ability to comply with universal precautions and infection control procedures, and on professional competence and judgment. For the HIV-infected physician who does not do invasive procedures, monitoring by his or her own personal physician should suffice. For the HIV-infected physician who does invasive procedures, the personal physician may wish to consult public health officials and other experts. Individual state health departments have varied in their recommendations for implementing the CDC guidelines. In New York, for example, local and state review panels are established under health department auspices. In Michigan, major responsibility is placed on personal physicians. The relevant state health department guidelines for HIV-positive health care professionals should be observed.

4. Strict confidentiality safeguards must be instituted and maintained.

We emphasize the ethical obligation of physicians who may have been exposed to be tested. This is in the best interest of both physicians and their patients. There is clearly a need to balance the right to privacy and livelihood of the seropositive health care worker with the need to protect patients. We recognize our obligation to support efforts to help HIV-infected health care workers continue to work productively should practice alteration become necessary or to assist in career redirection. For those who are unable to work, we must assure the availability of adequate disability insurance.

One additional reason for health care professionals to be tested is the risk to HIV-positive health care personnel of continuing to work in an environment in which they may be exposed to various opportunistic infections. The recent outbreaks of nosocomial multidrug-resistant tuberculosis make this risk particularly grave. Health care professionals who are HIV positive may need to make difficult decisions about remaining in a health care environment that may present substantial risk to their health.

If documented, clinically significant exposure of a patient to a provider's blood or body fluids occurs, that exposure should be managed in the same way as exposure of a health care professional to a patient's blood. The patient should be apprised of the exposure and the source health care professional should be tested for HIV and hepatitis B virus.

We do not recommend mandatory testing of health care professionals for HIV or hepatitis B virus, nor do we believe it should be required for employment, credentialing, licensure, or liability insurance. Such mandatory testing programs, if carried out annually, would cost up to $1 billion each year (67), without any assurance that a single case of HIV infection would be prevented. The observance of universal precautions by HIV-positive health care professionals, including physicians, will minimize any risk for transmission of HIV to patients. We believe that HIV-positive physicians and
other health care professionals who comply with universal precautions and are not physically or cognitively impaired present virtually no risk for HIV transmission to patients and should not be restricted in the practice of their profession.

These recommendations on minimizing the risk for transmission in the health care setting are based on current knowledge. We strongly support the need for comprehensive studies to define the risks, if any, of HIV transmission from provider to patient in the health care setting. As further scientific information becomes available, these recommendations will be reconsidered and revised if appropriate.

Position 4

Public education about HIV infection, with particular emphasis on the limited mechanisms by which the virus can be transmitted, should guide public policy and should serve to alleviate discrimination against those who become infected with the virus and to limit the further spread of infection.

Rationale

Persons in positions of public responsibility, such as elected leaders, employers, community service organizations, welfare agencies, public housing authorities, prison officials, and school officials, are urged to become knowledgeable about the basic concepts of HIV transmission and to educate their constituencies accordingly. Physicians bear a special responsibility to assist persons in public leadership positions in understanding these basic concepts of the epidemiology of HIV infection.

All evidence indicates that transmission of HIV requires parenteral, broken skin, or mucous-membrane contact with contaminated blood or body fluids. Compelling evidence shows that even close and prolonged familial exposure to persons infected with HIV will not transmit the virus (68; see Addendum). Because the virus is not transmitted by casual contact, restricting social or professional relations with HIV-infected persons is not justified when transmission of blood or body fluids is not likely.

Counseling and educational efforts, rather than policies promoting physical restriction or quarantine, are needed to control the spread of HIV infection. Effective health education regarding the hazards of engaging in risk behaviors is presently the single most important approach to controlling the epidemic. Public education should include an emphasis on activities and behaviors that do not transmit HIV, as well as those that do.

We believe that public health officials and others in positions of public leadership bear an obligation to minimize the risk for transmission in all settings, including the wide availability of condoms as well as education on using them properly. Similarly, needle exchange programs should be evaluated in various settings and, if effective in decreasing transmission, should be encouraged. We disagree with the view that such practices serve only to encourage risk behaviors.

Public policy on HIV-infected persons in areas of patient care, employment, housing, institutionalization, and education should be based on knowledge of the actual risks for infection and not on speculation or unwarranted fears. Once fully informed, persons in positions of public responsibility will be able to educate their own constituents, and those likely to come into contact with HIV-infected persons will be able to respond in a humane fashion without jeopardizing their own health and safety. This is particularly important for police, firefighters, emergency medical technicians, and others in similar positions.

Social prejudice against HIV-infected persons is a public problem that threatens the fabric of society and should evoke concerned responses from all sectors of society. The health care professions have a special responsibility to ensure that such prejudice does not occur in the health care setting.

Position 5

The confidentiality of patients infected with HIV should be protected to the greatest extent possible consistent with the duty to protect others and to protect the public health.

Rationale

Health care professionals should be sensitive to the concerns about confidentiality and privacy. Patients with AIDS risk societal ostracism and, in many cases, loss of employment and housing if their disease status is known. The potential discriminatory effect of public knowledge of a person’s HIV seropositivity is, therefore, enormous. Physicians and hospitals have the obligation to review and, if appropriate, to strengthen procedures to assure the confidentiality of their medical records and to disclose information only with the patient's consent.

There are situations, however, in which the health and welfare of other persons may take precedence over the responsibility to maintain confidentiality (69, 70). Physicians have a concurrent duty to inform identifiable persons at risk for grave harm; examples might include present or recent sexual contacts and persons with whom an HIV-infected person has shared intravenous needles. In many instances, HIV-infected patients will recognize and accept the responsibility to inform their sexual or other contacts. Indeed, patient counseling should reinforce the concept that the HIV-infected patient is obligated to inform his or her partners. If the HIV-infected patient refuses to inform others, the physician should consider how to protect the health and welfare of the patient's spouse or other partners. The physician may either notify the partner directly or arrange to have public health officials do so. Clear guidelines on this sensitive issue do not exist, but under some circumstances the duty to warn may override confidentiality. Physicians should inform themselves about applicable laws in their practice locations.

In jurisdictions where reporting of positive tests for HIV antibodies is mandated by law, public health authorities will assume the responsibility of partner notification. Cooperation of the index case is essential, however, and standard practice with other sexually transmitted diseases is to protect that person's confidentiality. When a physician acts in good faith under the law to disclose test results for the protection of
partners, he or she should be protected against legal challenge by the seropositive person.

Many state health authorities now require reporting by name of patients with confirmed HIV-seropositive tests, and others are moving in this direction. Such reporting may be epidemiologically useful, but the confidentiality of seropositive persons must be properly protected. Established public health techniques, including identification of persons at risk; epidemiologic analysis by time, place, and person; health education, and skillful contact tracing are useful in limiting HIV infection.

Position 6

Physicians should obtain complete sexual histories on their patients and should assume responsibility for candid communication with, and education of, persons at risk for HIV infection. The need to modify sexual practices in order to prevent transmission of infection should be stressed.

Rationale

Physicians must provide information about the risks for HIV transmission to their patients in a timely and accurate manner. Because of the complex nature of the disease and the regular emergence of new information, physicians must keep well informed, even if they do not currently have patients with AIDS or HIV infection in their practices. Discussions with patients should convey an understanding of the basic concepts of infection transmission in general; the nature of HIV transmission; behaviors that might result in HIV transmission and those that will not; the significance of a positive test for HIV antibody; and the guidelines for risk reduction, including the concepts of "safe sex," that have been promoted within risk groups.

Physicians are often reluctant to discuss sexual preferences and practices with their patients (71). However, HIV infection is predominantly a sexually transmitted disease, and this fact emphasizes the importance of learning the sexual history of all, particularly new, patients. The infectious nature of the disease, its causes, and the steps to be taken to prevent transmission must be discussed candidly with each patient known or suspected to be at risk regardless of how the physician personally views the subject. We recall the comments of former Surgeon General Koop, who wrote (72): "Some of you find it unpleasant to recommend condoms to young people. So do I. Acquired immunodeficiency syndrome is an unpleasant disease and recommending condoms to those who need protection is preferable to treating AIDS."

Guidelines on "safe sex" are widely available, particularly within risk groups. These guidelines are reasonable and sensible and are believed to minimize the risk for HIV transmission. It should be noted, however, that although the use of condoms during intercourse reduces the risk for HIV transmission, it does not totally eliminate it. "Safe sex" is certainly safer sex, but it is not risk free. Only in a monogamous relationship in which neither partner is infected is sexual activity free of risk.

Position 7

We encourage continued research into the causes, prevention, and treatment of HIV infection and AIDS. In addition to biomedical aspects, research into psychosocial and economic issues related to AIDS should be increased. Studies of the effectiveness of various types of educational interventions on behavior modification are critically important.

Rationale

The explosive growth in knowledge about HIV infection and AIDS in the past 10 years is astonishing. This knowledge will have profound application in human biology, specifically with regard to human retroviruses and oncogenesis. The response of the biomedical research community to the challenge of AIDS and the leadership roles of the National Institutes of Health and the CDC should be acknowledged and commended. Nevertheless, it is apparent that most of the task remains to be completed and that considerable research must yet be done before this disease is fully understood and controlled.

Highest priority should be given to prevention of HIV infection. Educational efforts, more effective barrier protection, and psychosocial research that focuses on improving preventive strategies are presently the most promising avenues toward that goal. Particularly important are the development of techniques for promoting "safer" sexual practices and for limiting illicit drug-related activities, especially among adolescents, young adults, and hard-to-reach minority groups.

Several candidate vaccines are being developed, and some are undergoing phase I-II clinical trials. Phase III trials of potential HIV vaccines present difficult methodologic and ethical problems but nonetheless must be done. Although progress has been rapid in the development of potential vaccine candidates, most authorities believe that an effective pre-exposure HIV vaccine will probably not be available before the year 2000.

The second priority is to develop an efficient and responsive system to provide care to all patients with AIDS. Special efforts must be made to reach women and minority groups. A major research effort is needed to explore all aspects of the care of patients with AIDS, not just the purely clinical care of the hospitalized patient. Long-term efforts to understand and favorably influence the sociologic, psychiatric, and economic consequences of HIV infection and AIDS are also needed. The goal should be out-of-hospital care that maintains a patient as a productive individual within the community for as long as possible, coupled with a supportive environment with an emphasis on comfort and human dignity when independence is no longer possible. Public and private sector funding must be increased to provide social and home services, housing, hospice care, and continuing health care to persons with AIDS.

The third priority is the development of improved antiretroviral therapies and therapeutic and prophylactic regimens for the opportunistic infections and malignancies that affect persons with HIV infection. Although substantial strides have been made in the development of effective chemotherapy, the development of more effective and safer chemotherapeutic agents remains a priority. Further, therapies that can safely and effectively be provided on an ambulatory basis or in the home need to be developed and evaluated. The need for
inclusion of women and minority groups in clinical trial groups must be emphasized.

Medical schools, postgraduate training programs, and continuing medical education programs must educate present and future physicians to care for HIV-infected patients, and patients with AIDS with compassion, understanding, and a thorough knowledge base. Sexual history taking and counseling must be given major emphasis.

The challenge is clear. Support from both the public and private sectors is needed for public education, basic and applied research, health services research, and health care delivery. Federal, state, and municipal governments are encouraged to fill the existing leadership gaps in these areas. We believe that the resources and skills of all segments of our society will be required to control this disease. Such an effort will require enormous financial resources and the expertise of many disciplines. To do less will risk catastrophic morbidity and mortality well into the future.

Addendum

Since this statement was written, we have become aware of several instances of household transmission of HIV infection. Recently, Fitzgibbon and colleagues (73) reported transmission of HIV infection from one child to another without documented sexual, percutaneous, or demonstrable blood contact. Sequence analysis of the HIV proviral DNA from the two isolates showed a high degree of relatedness. Numerous opportunities existed for unrecognized blood contact, because the source child had frequent nosebleeds, bleeding from the mouth, and lacerations. These rare instances of household transmission emphasize that HIV infection is a blood-borne pathogen and that accidental blood exposure can occur within home settings (74). No new or previously unsuspected mechanisms of transmission have been identified.

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