The Acquired Immunodeficiency Syndrome (AIDS) and Infection with the Human Immunodeficiency Virus (HIV)

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In 1986, the American College of Physicians and the Infectious Diseases Society of America jointly published a policy statement on the acquired immunodeficiency syndrome (AIDS) (1). The statement that follows expands and updates the previous one, based on knowledge and experience gained in the last 2 years, evolution of professional and public attitudes and beliefs, and recognition of unmet needs. Particular issues emphasized include an explicit acknowledgment of the ethical imperative to care for all patients; recognition of the low but definite risk for transmission of human immunodeficiency virus (HIV) in the health care setting and of the need for observation of universal precautions to minimize this risk; expanded recommendations for routine testing of high-risk patients; recognition of the other ethical duties that may conflict with the need for confidentiality; and recognition of a national leadership gap in public education and public policy development.

Background

The acquired immunodeficiency syndrome was first described in the United States in 1981 (2). By the end of 1987, more than 46,000 cases of AIDS were reported (3), and estimates from the Public Health Service suggest that the total number of cases will reach or even exceed 270,000 in 1991 (4, 5). The disease has been reported throughout the world and is particularly prevalent in central Africa (6).

The lethality of AIDS has been its most impressive and dismaying feature (7). The mean number of months from diagnosis to death is less than 24 (8), and more than 80% of all persons in the United States who have been diagnosed as having the disease for 3 years or more have died (9). One chemotherapeutic drug, zidovudine (azidothymidine, AZT), has some beneficial effect (10, 11) and has been licensed by the Food and Drug Administration (FDA), but the degree to which this drug and others currently under study will alter the natural history of AIDS remains uncertain.

The retrovirus that causes AIDS, the human immunodeficiency virus (HIV), was described in 1983 (12, 13). It is now clear that there are other human immunodeficiency retroviruses that may occasionally cause less virulent disease, but it is believed that the first such virus identified (HIV-1) is the cause of most of the cases of AIDS (14-16).

The first cases of AIDS were described among homosexual men, and a mistaken perception arose that AIDS is a "gay disease." This misperception is at the root of many civil rights issues and societal concerns that have arisen in relation to HIV-infected persons. The risk groups for HIV infection have proved to be remarkably stable since their delineation by the Centers for Disease Control in 1982 (17, 18). Approximately 65% have been homosexual or bisexual men, 8% have been both homosexual or bisexual and intravenous drug abusers, and 16% have been intravenous drug abusers only; others affected include heterosexual contacts of bisexual men and intravenous drug abusers, infants born to HIV-infected mothers, and before the introduction of HIV screening tests, recipients of multiple blood transfusions or blood components, such as patients with hemophilia. In 3% to 5% of patients with AIDS, no risk factors have been identified.

The human immunodeficiency virus has been isolated from blood, semen, bone marrow, tears, saliva, cerebral secretions, cerebrospinal fluid, brain tissue, lymph node tissue, urine, and feces. To date, however, the disease is known to have been transmitted only by sexual contact, by shared contaminated needles, by infected blood or blood products, by infected organ or tissue transplants, and from mother to infant across the placenta or during delivery (19). There is one case of probable mother-to-infant transmission through infected breast milk (20).

It is important to emphasize that all other human interpersonal behaviors are not believed to transmit HIV infection (19, 21). These behaviors include touching, talking, sneezing, hand-shaking, and sharing air space, eating and drinking utensils and toilets. Nonsexual transmission in household settings has not occurred, except...
inpatient costs at $147,000 per patient (28). Subsequent
the first 10,000 patients with AIDS estimated the lifetime
appreciated. An early study by Hardy and colleagues of
posibly designed to meet strict criteria of case definition
on technical problems, and some is due to a rather nar-
reporting of AIDS. Some of the underreporting is based
These estimates are midrange and vary from a low of
factors that may predispose to or promote the develop-
steady 6% to 8% per year in such infected cohorts, sug-
early 60% or more of HIV-infected per-
ons will progress to symptomatic disease (25, 26). It
been a
fected persons constitute the reservoi-
ly all cases now believed to represent AIDS or AIDS-re-
ated complex has been a
immunodeficiency, diarrhea, and wasting; and 10% or more develop chronic neurologic disabilities (23, 24). Furthermore,
the rate of conversion from asymptomatic status to sym-
tomatic AIDS or AIDS-related complex has been a
 stead 6% to 8% per year in such infected cohorts, sug-
gest that eventually 60% or more of HIV-infected per-
 hurts. Some of these are
themselves, some health care professionals to exclude persons with
HIV infection, these implications include lack of confidentiality, loss of job, ostracism from the community, denial of insurance, eviction from housing, exclusion of children from school, refusal of morticians to prepare bodies for burial, and efforts by hospital unions and even
some health care professionals to exclude persons with
AIDS from medical care. In the absence of effective leadership from the federal government, individual states are
beginning to articulate their own positions and to legis-
late their own solutions to these issues. Some of these are
appropriate responses, but some of them are misguided,
in the longer term, counter-productive.

There is a compelling need for a national program emphasizing prevention and coordinated services that can be managed at the local level. This program should focus on preventing infection through education and behavior modification. Efforts in primary prevention should include the education of adolescents and young adults regarding the transmission of HIV, the encouragement of abstinence or monogamous sexual relationships, and ways to reduce the risk of transmission through use of condoms and avoidance of shared needles and drug paraphernalia. Secondary prevention for those already infected with HIV should focus on educational efforts to minimize their risk of transmitting the virus to other persons.

The American College of Physicians and the Infectious
Diseases Society of America support such educational activities and urge physicians to take a leadership role in putting an end to the increasing and often unfounded public anxiety associated with this disease.

Positions

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 patients with AIDS and AIDS-related conditions as well as HIV-infected patients with unrelated medical problems. The denial of appropriate care to patients for any reason is unethical.

Physicians who have the primary responsibility for patients' well-being must provide high-quality, nonjudgmental care without regard to their own personal risk, real or perceived. Physicians and nurses alike are charged by the ethics of their healing profession to treat patients with all forms of sickness and disease. It is inappropriate for any health care professional to compromise the treatment of any patient, including those with transmissible, lethal diseases such as AIDS, on the grounds that such patients present unacceptable medical risks. This fundamental principle of medical ethics cannot be compromised.

The obligation to provide care to all patients, regardless of personal risk, whether real or perceived, is deeply rooted in medical history and medical ethics. Observance of this ethical imperative by the medical profession in the past, however, has been inconsistent at best (32). Many physicians are known to have fled from the Black Death in Europe during the 14th century, and from the Great Plague of London in the 17th century. Nonetheless, in the last 100 years, physicians have unhappily cared for patients whose diseases were known to place them at personal risk; well-known examples include typhoid fever, yellow fever, tuberculosis, poliomyelitis, pandemic influenza, and hepatitis B. Since the advent of antibiotic agents, however, virtually an entire generation of physicians has grown accustomed to providing patient care in an environment essentially free of personal risk for serious infectious disease.

A patient-physician relationship is established by a patient choosing a physician and the physician agreeing to provide care. The physician thereby incurs a moral responsibility to provide the best care possible. If a physician feels inadequate or incapable of providing such care for established patients in a given circumstance, the physician is ethically bound to refer the patient to a competent colleague who is able and willing to provide such care (33). Refusal of a physician to care for a specific category of patients, such as patients who have AIDS or who are HIV-positive, for any reason, is morally and ethically indefensible.

The practice of medicine is a societal trust and carries with it a societal responsibility. If medicine wishes to retain its respected status as the healing profession, we must continue to provide the best possible care to our patients, regardless of personal risk. To do less threatens the very nature of the patient-physician relationship, makes a mockery of our professional heritage, and violates the very essence of being a physician.

2. Physicians and other health care professionals are urged to become fully aware of potential risks and problems encountered in caring for HIV-positive patients and patients with AIDS and to take appropriate steps to minimize them. Such problems include the risk of HIV transmission, economic problems, and personal psychology stresses.

Epidemiologic data suggest that the risk of transmission of HIV infection from patients to health care workers is very low, but not zero. Three prospective studies to determine the risk of documented percutaneous or mucous membrane exposure to blood or body fluids of HIV-infected patients have been carried out in the United States (34-36). Of the more than 1300 exposed health care workers evaluated in these studies, 4 became positive for HIV antibody; three of the seroconversions occurred in persons who had no other documented risk factors for infection. These three seroconversions occurred after needle-stick injuries; no seroconversions occurred after approximately 400 mucous membrane exposures. Thus, the risk of HIV transmission after percutaneous exposure appears to be on the order of 0.5% (19). The risk of infection with this virus from such exposure is thus very low, in marked contrast to the risk of hepatitis B virus infection (6% to 30%) after similar kinds of exposures.

Three cases of apparent HIV transmission to seronegative health care workers through non-needle-stick percutaneous exposure or mucous membrane exposure were reported in the Spring of 1987 (37). The occurrence of these three cases reemphasized the importance of regarding all blood and body fluids as potentially infectious.

Guidelines from the Centers for Disease Control (38) and the American Hospital Association (39) reemphasize the principle of universal precautions, that is, the use of gloves for any anticipated direct contact with blood, mucous membrane, or other body fluids of all patients; the use of masks when aerosolization of blood-contaminated body fluids is anticipated; and the use of protective eye-wear when blood splashes are anticipated. These guidelines also reemphasize the precautions to be taken with needles and sharp instruments, the use of equipment to minimize the need for mouth-to-mouth resuscitation, and appropriate sterilization and disinfection procedures.

These kinds of barrier techniques that interrupt the transmission of blood-borne infections have been in use for many years. Although there are no concrete data about the effectiveness of such barrier techniques in preventing the transmission of HIV, substantial data indicate their effectiveness in preventing transmission of hepatitis B (19). Use of barrier techniques has the added benefits of protecting patients from other kinds of nosocomial infections and protecting health care workers from other blood-borne diseases (40). It is self-evident that, to be effective, universal precautions must be applied in all health care settings, not only hospitals and
emergency rooms, but also ambulatory care centers and physicians' offices.

Potential economic problems in caring for patients with AIDS and HIV infection should be recognized. Many patients with AIDS, as their diseases progress, lose their jobs, health insurance coverage, and in some instances, all of their financial assets. Such circumstances must not be allowed to compromise patient care. That patient care not be refused because of inability to pay is another historic principle in medical ethics and must not be compromised in caring for patients with AIDS (33). The whole issue of financing the care of patients with AIDS awaits broad solutions involving a coordinated response of both the public and private sectors (30).

Health care workers may also be reluctant to care for patients with AIDS because of the stressful psychological and emotional dimensions. In the long term, these patients do poorly despite optimal care, or they develop new infections as soon as one is successfully treated. Hospitalizations are often prolonged, and legitimate questions can be raised about the cost-benefit ratio of procedures that physicians may begin to view as futile. These patients are typically young and critically ill. Many health care professionals find it difficult to discuss the relevant issue of foregoing life-sustaining treatment, such as intubation or cardiopulmonary resuscitation, with such patients.

The stress of caring for these patients can be alleviated as the clinically achievable goals of medical therapy are clearly defined and communicated both to the patient and among the staff. Professional support groups, often interdisciplinary in nature and composed of physicians and other professionals involved in caring for patients with AIDS, have also been very useful in this regard. When treatment no longer provides therapeutic benefit, supportive care, including control of pain and other symptoms of discomfort, should be provided. Hospice and nursing home care should be encouraged. Attention to patients' needs for supportive care can relieve much anxiety and reluctance on the part of health care professionals who are caring for patients with AIDS.

3. Elected leaders, employers, community service organizations, welfare agencies, public housing authorities, prison officials, and school officials are urged to become fully informed and to educate others about HIV infection, and particularly to understand the limited mechanisms by which the virus can be transmitted. Dissemination of such knowledge should serve to guide public policy development, to alleviate discrimination against those who become infected with the virus, and to limit the further spread of infection.

Persons in positions of public responsibility such as those outlined in position 3 must understand the basic concepts of transmission of HIV and then educate their constituents accordingly. Transmission of HIV appears to require parenteral, open skin, or mucous membrane contact with contaminated blood or body fluids. Good evidence shows that even close and prolonged familial exposure to persons infected with HIV will not transmit the virus (21). Because HIV appears not to be transmitted by casual contact, there is no justification for restricting social or professional relations with HIV-infected patients when transmission of body fluids is not likely.

Children with HIV infection who attend school or day-care centers may present additional risks for transmission due to their immaturity and to the uncontrollable nature of physical contact among children. The Centers for Disease Control, the American Academy of Pediatrics, and the National Education Association have advocated that children who lack control over their body secretions or excretions, who are prone to biting, spitting, or vomiting, or who have open skin lesions should be placed in a restricted school environment (41, 42). However, school children with HIV infection who do have control over bodily functions should be allowed to attend class in a normal setting. The American College of Physicians and the Infectious Diseases Society of America support this policy as one that protects school children without unnecessarily discriminating against all young persons with HIV infection.

The approach to patient care, employment, housing, institutionalization, and education should be based on knowledge of the actual risks of infection and not on speculation or unwarranted fears. Thus, the education of persons in positions of public authority or responsibility is of paramount importance. Strong leadership from the Federal government would be a major help toward realization of that goal (43). 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 point is particularly important for police, firemen, emergency medical technicians, and other persons in similar positions.

Social prejudice against HIV-infected persons is a public problem that threatens the very 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.

4. Testing for HIV antibody should be used only when it will benefit the patient or contacts to whom the virus may have been transmitted, or for protection of the public health.

The enzyme immunoassay to detect antibody to HIV was licensed in March 1985. Because the goal of such testing was to screen HIV-positive blood out of the nation's blood supply, the tests were designed to be as highly sensitive as possible. This purpose has been served, and transfusion-associated HIV infection has occurred only in rare instances of blood donated during the "window" of time between HIV infection and the appearance of HIV antibody as detected by enzyme immunoassay (44). However, the large number of false-positive results from
enzyme immunoassay requires great caution in interpreting positive results in low-risk populations (45).

The sensitivity of the currently licensed enzyme immunoassay tests is at least 99% when they are done under optimal laboratory conditions. Under these circumstances, the probability of a false-negative test is very low, except during the first several weeks after infection before detectable antibody is present. A small number of infected people may not develop detectable antibody for several months or more after exposure (46); the potential infectivity of such persons before they have developed antibody is not known.

The specificity of the currently licensed enzyme immunoassay test is approximately 99% when repeatedly reactive tests (that is, two consecutive positive tests) are considered. To increase the specificity even further, a confirmatory test, most often the Western blot test, is used to validate repeated reactive enzyme immunoassay results. The Western blot test is highly specific when strict criteria are used to interpret the test results.

Thus, the full testing sequence consists of repeatedly reactive enzyme immunoassay tests, coupled with a positive confirmatory Western blot test. This testing sequence, if positive, is highly predictive of HIV infection, even in a population with a low prevalence of infection. In contrast, the predictive value of even repeatedly reactive enzyme immunoassay tests alone, without confirmatory Western blot testing, in a population with an HIV prevalence of 0.2%, is little better than 28%. As the prevalence of infection in the population under study increases, the predictive value of repeatedly reactive enzyme immunoassay tests alone increases to 98% in a population with an HIV prevalence of 20%. The point to be emphasized, however, is that in a low-risk population, with a prevalence of HIV infection of less than 0.5%, fully half or more of all repeatedly reactive enzyme immunoassay tests will represent falsely positive tests. The more specific Western blot testing is, therefore, crucial to identify true HIV infection. It is important to understand the sensitivity and specificity of the currently available tests when considering issues of HIV testing and population screening, and when notifying patients of positive test results. A patient should not be considered infected, nor informed of a positive test result until the full test sequence, including the Western blot test, is completed and confirmed to be positive.

A new generation of diagnostic tests that will have significant impact is under development (47-49). The new tests may minimize the problem of false-positive enzyme immunoassay tests, perhaps to provide prognostic information unavailable with current tests, and to detect HIV antigen during the period between infection and development of antibody. We encourage the rapid development and introduction of tests that show improved performance.

There are many possible reasons for testing, but the overriding reason is to enable physicians to provide counseling directed at behavior change in seropositive persons to prevent transmission of the virus. Other justifiable reasons for testing include medical diagnosis, therapeutic decision-making, reassurance for worried healthy persons, and large-scale anonymous testing to define the extent of asymptomatic HIV infection in the population (22).

Three levels of testing should be clearly distinguished; these are mandatory testing, routine testing, and voluntary testing.

Mandatory testing is the testing of certain individuals or groups specified by law or regulation. In the United States, all military personnel are now required to be tested. Regulations are being developed for mandatory testing of federal prisoners and immigrants. There is uniform testing of blood donors, and donors of organs, tissue, and semen. The American College of Physicians and the Infectious Diseases Society of America support these existing testing programs, but we do not believe that further expansion of mandatory testing in low-risk populations is appropriate. Because of strong evidence that HIV cannot be transmitted by casual contact, it is not in the public interest to require the testing of persons whose social or sexual lifestyles render them unlikely to have been exposed to the virus. Thus, we believe that it is inappropriate to require health care employees, food service workers, or personal service workers such as barbers or manicurists to be tested serologically for HIV infection as a condition of employment. Similarly, widespread mandatory premarital testing is unlikely to be cost-effective, and we believe it is inappropriate.

Mandatory testing of high-risk populations might seem appropriate; it is widely believed, however, that such an approach would only drive potentially HIV-infected persons away from the health care system. We do not, therefore, believe that increased mandatory testing would be productive.

Routine testing is the testing of certain individuals or groups recommended by health care providers and consented to by the person to be tested after counseling. We believe that such routine testing should be increasingly recommended, particularly in populations known to be at higher than baseline risk (22). Specific examples might include persons who may have sexually transmitted diseases, intravenous drug abusers, persons who identify themselves as at risk, women of childbearing age with identifiable risks for HIV infection, persons who received blood transfusions between 1978 and April 1985, and persons planning marriage in which one or both partners may be at increased risk. Testing for diagnostic purposes should be encouraged in persons undergoing medical evaluation with selected clinical signs and symptoms such as generalized lymphadenopathy; unexplained dementia; chronic unexplained fever, diarrhea, or weight loss; or with diseases such as tuberculosis. Testing is also useful in many instances to aid in therapeutic and management decisions.

We do not believe that all persons admitted to hospitals should be tested on a mandatory or routine basis. We do support, however, the concept of increased routine testing for HIV antibody in high-risk populations. It may be appropriate, therefore, for hospitals in certain geographic, high-prevalence areas to consider routine testing
of selected subpopulations shown to have an increased prevalence of HIV infection.

Routine testing for HIV antibody in any health care setting raises a number of significant concerns, all of which must be addressed. First, the patient must be appropriately informed of the potential consequences of testing before being asked to give consent to be tested. Second, testing must be inextricably linked to and accompanied by appropriate counseling for confirmed seropositive patients, provided by properly trained persons. Third, care must not in any way be conditional on consenting to be tested or on the results of the test; in other words, care must be provided in a nondiscriminatory fashion. Finally, confidentiality safeguards must be in place to limit knowledge of the test results to those directly involved in the care of infected patients, to contacts who may have been exposed, or as required by law or regulation. Confidentiality and antidiscrimination measures should, in fact, be guaranteed by law.

Voluntary testing, which is defined as a person wishing to be tested for HIV infection, should be made available to any such persons, including health care professionals.

Some health care professionals have advocated serologic testing of patients when exposure to large amounts of patients' blood may be anticipated. Specific examples include those patients having major operative procedures and those being treated in critical care units, especially if there is uncontrolled bleeding (38, 40). Decisions about the desirability of establishing such testing programs should be made by individual institutions, with physician input, and testing may be done if the patient consents. If such testing programs are carried out, however, negative test results must not be allowed to convey a false sense of security, because the enzyme immunoassay test will not be positive during the incubation period of HIV infection.

It is important to reemphasize that identification of HIV-infected patients in the health care setting must not result in denial of needed care or in the provision of suboptimal care. Adherence to universal blood and body fluid precautions, recommended for the care of all patients, will minimize the risk of HIV transmission from patients to health care personnel. The added benefit to universal precautions of knowing a patient's HIV status if any, is unknown, and in any case, such information is not likely to be available in emergency or outpatient settings.

Health care workers who sustain accidental percutaneous puncture or direct mucous membrane exposure to blood or body fluids from a known patient source present an ethical dilemma if the patient refuses to consent to an HIV-antibody test; the accidentally exposed health worker has a legitimate interest in the HIV-antibody status of the source patient. A few states have enacted legislation that permits an HIV test to be done without individual informed consent in such situations; some hospitals in states in which individual informed consent is not mandated have incorporated into their general consent for admission and treatment a provision indicating that, in the case of accidental exposure, the patient's blood may be tested for both hepatitis B and HIV infection. The American College of Physicians and the Infectious Diseases Society of America believe that, in situations of accidental exposure (with formal documentation of the incident), the patient's blood may ethically be tested for HIV infection without individual informed consent; the patient should, of course, be counseled and informed.

Transmission of HIV from infected health care professionals to patients has not been reported but is a theoretical possibility. Transmission of hepatitis B virus from health care professionals to patients has been documented in rare situations in which the involved health care professionals had very high concentrations of hepatitis B virus in their blood (much higher than those that occur with HIV infection) (50, 51). Additionally, the health care professionals sustained deep puncture wounds while doing invasive procedures or had exudative lesions that allowed the virus to contaminate instruments or open wounds of patients.

Since transmission of HIV from infected health care professionals doing invasive procedures to their patients has not been reported and would be expected to occur only rarely, if at all, the American College of Physicians and the Infectious Diseases Society of America do not recommend routine testing of health care professionals to prevent transmission of HIV. The observance of universal blood and body fluid precautions by HIV-positive health care professionals, including physicians, will serve to further minimize any risk of transmission of HIV to patients. The same principle of confidentiality applies just as much to HIV-infected health care workers as to any other person. We believe that HIV-infected physicians, if otherwise able to care for patients (for example, do not have evidence of cognitive impairment due to brain infection), present virtually no risk of HIV transmission to their patients.

5. Counseling and educational efforts, rather than policies promoting physical restriction or quarantine, are appropriate methods for controlling the spread of HIV infection.

Individual counseling and public education about the ways in which HIV infection can be transmitted are appropriate ways to control its spread. The behaviors that are known to transmit the virus, such as sexual contact and the sharing of intravenous needles, are usually consensual and voluntary, and many persons can be persuaded to change their behavior if adequately informed and counseled. Effective health education regarding the hazards of engaging in high-risk activities is at present the single most important approach to controlling the epidemic spread of this disease. Public education requires leadership at the local, state, and federal levels. Individual counseling is clearly the responsibility of health care professionals. For that reason, it is important to reemphasize that testing and appropriate counseling must always be directly linked. In addition to describing behaviors known to minimize risks of transmission, counseling of HIV-positive patients must also outline behaviors that present no risk of transmission, including normal inter-
The quarantine of persons with AIDS or persons who have been exposed to HIV and presumed capable of transmitting the virus, is an invasion of individual liberty and privacy. Such a policy would, in all likelihood, result in the nonreporting of many AIDS cases, and the loss of cooperation of risk-group members that is critical to further understanding of HIV-related diseases. Quarantine has been advocated in some states for the very small number of persons with HIV infection who persistently refuse to curtail sexual activity or the sharing of intravenous needles, or who otherwise persist in behavior that poses the risk of transmission to others. Although such a policy may occasionally be effective in preventing transmission in specific situations, it certainly cannot effectively control a virus that is frequently transmitted by persons who are unaware that they are carriers. The judicial system will ultimately decide whether persistent behavior by a person known to be HIV-infected that exposes another to the risk of HIV transmission represents a criminal offense. Such proceedings in this hitherto unknown area of law have already begun.

6. 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.

Health care professionals caring for patients with AIDS and testing persons for antibody to HIV should be sensitive to the individual patient's needs for confidentiality and to his or her right to privacy. Patients with AIDS risk societal ostracism, and in many cases, loss of jobs and housing if their disease is known. Homosexuals and intravenous drug abusers believed to have infectious diseases may evoke condemnation of their lifestyle by others and may find themselves discriminated against and socially isolated.

Great public misunderstanding about the significance and predictive value of the HIV-antibody test remains. The scientific community generally accepts that persons whose results are reproducibly seropositive, and confirmed by a Western blot test, have been infected with HIV; those persons are also believed to be infectious. The test does not predict, however, which infected persons are at risk for developing AIDS or other clinical diseases caused by the virus. The potential discriminatory impact of public knowledge of a person's HIV seropositivity is, therefore, enormous. Thus, the American College of Physicians and the Infectious Diseases Society of America believe that physicians and hospitals have the obligation to maintain confidentiality of their medical records and not disclose information to outside sources without the patient's consent.

There are, however, situations in which the health and welfare of other persons may take precedence over the duty to maintain confidentiality (33, 52, 53). There is a concurrent duty to warn or to inform, and this duty extends to present or recent sexual contacts, to persons with whom an HIV-positive person has shared intravenous needles, and to any other persons who are likely to have had contact with the infected person's blood or body fluids. In many instances, HIV-infected patients will recognize the responsibility to inform their sexual or other contacts and will do so voluntarily. Indeed, counseling should reinforce the concept that the HIV-infected patient is obligated to inform his or her contacts. If the HIV-infected patient refuses to inform others, however, the physician must consider his or her responsibility to protect the health and welfare of the patient's spouse or other contacts. Clear guidelines on this sensitive issue do not exist, but it is clear that, under some circumstances, the duty to inform will take precedence over the duty to protect confidentiality. In some jurisdictions in which reporting positive tests for HIV antibodies is mandated by law, public health authorities will assume this responsibility; in these instances, the physician's responsibility is discharged by appropriate reporting to the relevant public health jurisdiction. When a physician acts in good faith under the law to disclose test results for the protection of contacts, he or she should be protected against legal challenge by the seropositive person.

A number of state health authorities now require reporting of confirmed HIV seropositive tests, and other state health authorities as well as the Centers for Disease Control are moving in this direction. The American College of Physicians and the Infectious Diseases Society of America support such reporting to local authorities. Disease reporting for public health purposes is well established in American public health and has included infection and disease surveillance; identification of at-risk persons in populations; epidemiologic analysis by time, place, and person; intervention strategies appropriate to the epidemiologic pattern of transmission; health education; skillful contact tracing in selected circumstances; and utmost care in the confidential management of sensitive information. These established public health techniques should prove useful in limiting HIV infection, but a major expansion of resources in most public health departments for these activities will be necessary to accomplish the goals.

Insurance carriers have, for obvious reasons, great interest in the results of HIV tests of persons they insure or are considering insuring, whether for health insurance or life insurance. We recognize the economic implications of AIDS for the insurance industry. Insurance carriers may have legitimate interests in the HIV-antibody status of persons applying for life insurance, particularly in high-risk geographic areas of the country, and if they are single men between the ages 20 and 40, for example, and are seeking insurance for large sums. Confidentiality concerns within the insurance industry must be adequately addressed, particularly in instances of employee group insurance, either for health or life insurance. Access to HIV-seropositivity data in insurance industry data banks must be carefully controlled. The issue of health insurance is somewhat more complicated, and its ultimate resolution depends heavily on decisions yet to be made on how the enormous health care cost of AIDS is to be paid.
One suggested approach is to treat HIV-positive persons as a shared risk pool, with all health insurance carriers as well as the federal, state, and local governments participating in the coverage of that pool (30). Reported instances of health care insurers revoking coverage after learning that an insuree was HIV-positive are deplorable. Health care insurers have an obligation to continue coverage to persons already insured.

7. Physicians should incorporate into their practices standard procedures for taking complete sexual histories of their patients and should assume responsibility for candid communication with and education of persons known to be at risk for HIV infection. The need to modify sexual practices to prevent transmission of infection should be stressed. In addition, physicians are urged to take a major part in educating the public to eliminate misconceptions about AIDS.

AIDS represents a prime example of the hazards of a health information gap, as evidenced by the unprecedented (in recent times) public and professional anxiety toward a disease. In earlier years, some appropriate apprehensions were aired because many important facts about the disease were unknown. In 1988, however, many of the previously unanswered questions about AIDS have been answered, and it is incumbent on physicians to provide this information 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 make special efforts to keep well informed, even if they do not have patients with AIDS or AIDS-related conditions in their practice. Important areas to consider include an understanding of the basic concepts of infection transmission in general; the nature of HIV transmission; the significance of a positive test for HIV antibody; and the guidelines for risk reduction, including the concepts of “safe sex,” that currently are being promoted within risk groups (31, 54).

Physicians are often reluctant to discuss the sexual preferences and practices of their patients. However, AIDS, as a predominantly sexually transmitted disease, now emphasizes the learning of the sexual history of patients, particularly new patients. To be less than explicit with patients at risk for AIDS and to avoid discussing the consequences of their behavior is to neglect seriously the physician’s responsibility to educate 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 views the subject.

Guidelines on “safe sex” are widely available, particularly within risk groups. These guidelines generally encourage the following:

1. Avoidance of sexual contact with persons suspected of having AIDS or a positive HIV-antibody test.
2. Avoidance of receptive anal intercourse.
3. Avoidance of sexual contacts with multiple partners.
4. Avoidance of sexual contact with people who use intravenous drugs.
5. The use of condoms during sexual intercourse.
6. Avoidance of oral-genital contact and open-mouthed, intimate kissing.

These guidelines are reasonable and sensible, and are believed, but not generally proven, to minimize the risk for HIV transmission (55, 56). It should be noted, however, that the use of condoms during intercourse is known to reduce but not totally eliminate the risk of HIV transmission (57, 58). “Safe sex” is certainly safer sex, but it is not wholly free of risk.

Further guidelines recommend that any man who has had sex with another man since 1977 should not donate blood, plasma, body organs, other tissue, or sperm (59). In addition, seropositive women should not breast-feed their babies. Other precautions include advising persons against practices such as being shaved or tattooed or having their ears pierced in places where proper sterilization of equipment is not assured.

The very title “doctor,” from the Latin docere, to teach, implies a responsibility to share knowledge and information. Physicians must be explicit with their patients about AIDS. Proper education regarding the known risks of contracting or transmitting infection is the responsibility of the physician, not only for his or her patients, but also for the persons with whom that patient may have contact.

In addition to individual patient education, physicians are encouraged to offer their services to public educational activities so that accurate information can be provided. Examples of such activities include community forums, public service announcements on television and radio, the production of brochures and other written materials, and telephone hotlines. It is particularly important to inform adolescents and young adults before they begin sexual activity about HIV and its transmission, and ways to minimize risks.

As the number of persons with AIDS continues to grow, biomedical researchers will receive further encouragement to bring a scientific solution to this problem. The concerns of society for the means of controlling the spread of the virus will probably increase as well. If so, there will be a growth in the prevalence of proposals for inappropriate testing and restrictions of individuals’ rights. During this period, well-informed physicians will be in a key position to prevent irrational societal responses, to comfort those most concerned, and to care for those infected with the AIDS virus.

8. The American College of Physicians and the Infectious Diseases Society of America encourage continued research into the causes, prevention, and treatment of AIDS and AIDS-related conditions. 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.
The explosive growth in knowledge about AIDS, its clinical manifestations and natural history, about HIV infection and its natural history, and about the virus itself in the past 7 years is nothing short of astonishing. The virus has been identified and its molecular structure and function are known, at least in part. Many of its genes have been cloned and inserted into other expression vectors to define function and to facilitate vaccine development. A new generation of diagnostic tests is under development, including a test for HIV antigen, and is expected to appear in the next several years. These new tests should diminish the problem of false-positive results and perhaps yield prognostic information. An enormous amount of information has been collected and published relating to the disease itself and to its many manifestations. Epidemiologic studies have defined major routes of transmission and the natural history of HIV infection is known, although not yet with great precision. Knowledge gained about HIV infection 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 Centers for Disease Control, should be acknowledged and commended. All of this new knowledge notwithstanding, 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, that is, steps to minimize further spread of HIV infection in the uninfected population. Educational efforts and vaccine development are presently the most promising avenues toward that goal. Thus, a major effort is needed to develop and evaluate educational and marketing techniques that will result in behavioral modification to diminish high-risk behavior and thus limit the spread of HIV infection in the community. Particularly important are the development of techniques for promoting safer sexual practices and for limiting illicit drug-related activities, particularly among adolescents, young adults, and hard-to-reach minority populations.

Several candidate vaccines are under development, and one is undergoing phase I clinical trial. Field trials of potential HIV vaccines present difficult technical as well as social and ethical problems, but nonetheless must be carried out. Although there has been rapid progress in the development of potential vaccine candidates, most authorities believe that an effective HIV vaccine is still at least 10 years away.

The second priority is to develop an efficient and responsive system to provide care to all patients with AIDS. 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 with AIDS. Long-term efforts to understand and favorably influence the sociologic, psychiatric, and economic consequences of AIDS and AIDS-related illness are also needed. The emphasis should be on out-of-hospital care that maintains the patient with AIDS as a productive person within the community for as long as possible and that provides a supportive environment with an emphasis on comfort and human dignity when productivity is no longer possible. By necessity, there must be both increased public and private sector funding to provide social and home services, housing, hospice care, and continuing health care to persons with AIDS. In addition, efforts to evaluate the most effective means of accomplishing these tasks must be carried out.

The third priority is improved therapy for patients with AIDS. Although substantial strides have been made in the development of effective chemotherapy, and zidovudine (AZT) has now been released, the development of more effective and safer chemotherapeutic agents remains a major priority. The optimal time in the course of HIV infection and development of AIDS at which to begin chemotherapy must be clearly defined. Similarly, improved therapies for the many opportunistic infections that occur in patients with AIDS, and therapies that can safely and effectively be provided on an ambulatory basis or in the home need to be developed and evaluated.

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

The charge to all of us, then, is clear. Continued study of all aspects of AIDS and HIV infection is necessary if this disease is to be controlled. Support from both the public and private sectors is needed for basic and applied research, health services research and delivery, and education. Federal, state, and municipal governments are encouraged to fill the existing leadership gaps in this area, so that persons in positions of public responsibility at all levels of government may effectively educate their constituents. The American College of Physicians and the Infectious Diseases Society of America recognize that the resources and skills of all segments of our society will be required if the plague of AIDS is to be controlled. Such an effort will require the investment of billions of dollars and the expertise of many disciplines. To do less, however, will risk catastrophic consequences for society.

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