Legal Rights and Duties in the AIDS Epidemic

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This article provides an overview of some major areas of legal concern in which the AIDS epidemic is having an impact. The rights of infected individuals to testing, treatment, and confidentiality are reviewed, and emphasis is given to their claims to nondiscrimination regarding access to health care, employment, housing, education, insurance, and related interests. Infected persons' duties to contain transmission of AIDS are outlined under principles of criminal and civil law, including liability for provision of contaminated blood products. Uninfected people's general rights to protection are considered, and health professionals' and authorities' rights and duties are given more detailed attention. In conclusion, some legal developments outside the United States are reviewed.

THE IMPACT OF THE ACQUIRED IMMUNODEFICIENCY SYNdrome (AIDS) on human interactions mediated by law has been felt at all levels of society. Early questions about legal protections against the spread of infection are now balanced by questions about the rights of those infected with the human immunodeficiency virus (HIV) and about confidentiality and nondiscrimination. The recognition of such AIDS patients as children infected prenatally or recipients of contaminated blood in transfusions has mitigated an early response within the general population that those infected were culpable and undeserving of legal rights (*1, 2*).

Governmental responses to the AIDS epidemic, at least in the United States, have in part been punitive, reinforced by a conviction that infection comes from outside and that only a few citizens bear responsibility for causing infection. New immigration laws have been proposed, on the view that national boundaries can be secured against invasion by the virus that causes the disease. An extension of attributing the spread of AIDS to restricted populations is seen in legislative proposals targeting prisoners and prostitutes for compulsory testing and control.

While initial legislative proposals often have been moralistic and largely irrelevant to pragmatic management of the problem, private individuals and organizations have invoked laws in practical pursuit of their perceived interests. Fears of infection in the workplace, educational system, hospital and health care system, and, for instance, because of shared housing, have led to resourceful invocations of the law. Conventional legislation against sodomy and illicit drug-taking has proved ineffectual and perhaps counterproductive in containing the spread of infection. In this overview of legal rights and duties in the AIDS epidemic I focus in minor part on laws newly enacted and predominantly on legal principles that are invoked by motivated individuals and interest groups.

It is conventional jurisprudence that a legal right available to one person depends on a legal duty that binds others. Competing interests may each claim a different right and the other's correlative duty. Litigation requires courts of law to resolve conflicting claims, but in the absence of authoritative rulings mutually incompatible claims to rights are likely to be asserted. Thus, although in the following sections I discuss claimed rights, the identification of a right is often indeterminative of which right the courts of final authority would hold to prevail over others.

Infected Persons' Rights

Testing and treatment. Access to voluntary testing for exposure to HIV is not dependent on the status of the applicants as members of low-risk or high-risk populations. However, rights to testing and to treatment may be only theoretical where, under principles of private law, health professionals have no reciprocal duty to enter into contracts with prospective patients. Public hospital and health authorities are likely to accept a volunteer's right to be tested where this appears to be in the public interest, but might charge nonresidents of their areas the commercial cost of the testing service (*3*). Similarly, private sector agencies might recognize the right to be tested, but condition it on due payment.

Those who prove HIV-positive, and who even without testing are in high-risk populations, such as actively homosexual and bisexual men, drug-takers who have shared needles or syringes, and hemophiliacs and others who have used blood products [particularly before late 1985, when blood product screening in developed countries became relatively reliable (*4, 5*)], may claim a right to additional care. Counseling a person before testing, and before or after giving the test results, is considered essential by public health professionals, to give advice both on safer life-style options and on implications of a finding of seropositivity. The rates of clinical depression and suicide among persons testing positive or suspecting positivity reinforce the claim to due counseling (*6*).

The rights of AIDS patients to medical care apply to the conditions of disease they suffer because of their lack of immunity. These patients have the rights to appropriate care that is routinely available from public or private health insurance plans according to the prevailing local pattern of health service funding. Their right to coverage is in no way diminished when their disease is indirectly attributable to voluntary life-style factors.

No right to treatment of AIDS per se can be claimed while no treatment exists. Rights to unproven therapies are more contentious and revive controversies similar to those raised when laetrile was offered as treatment for cancer (*7, 8*). Personal autonomy and rights to the benefits of science that are not yet recognized by conservative health service and drug approval administrations may be invoked. A legal compromise may be that health authorities compelled to

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permit use of such treatments can decline to pay for them (*7, 9*).

Patients with AIDS may also demand the exemption of potential treatments from the regular process of drug approval, which usually requires premarketing trials extending over a longer time than the patients are likely to survive. Some would-be entrepreneurs have invoked legal defenses of the necessity to save life to found a right to supply unproven drugs to AIDS patients. Jurisprudentially, however, no such right may exist and claiming it may at most be only an excuse for illegal supply of a drug (*10*).

Confidentiality. Rights to confidentiality of test results are frequently compromised by legislation and judicially declared law concerning the duty and privilege of an individual to warn of anticipated peril. Public health legislation often compels reporting of otherwise confidential information of, for instance, contagious, infectious, or sexually transmitted diseases to designated authorities (*11*). Such authorities and their officers must protect data from improper release, but in some cases may undertake tracing of contacts in ways that identify patients. Claims of rights to confidentiality are reinforced by policy arguments that the possibility that seropositive results may be released improperly will deter members of high-risk populations from submitting to testing (*12, 13*).

At various points the law mandates and tolerates disclosures of sensitive and potentially harmful medical information. It is a matter of jurisprudence whether such disclosures constitute permissible breaches of confidentiality or limits beyond which the protected right to confidentiality does not extend. There is growing recognition that the physician-patient relation creates a legal obligation on the physician toward an identifiable third party who may be endangered by the patient. The Supreme Court of California has summarized the principle in the observation that: "The protective privilege ends where the public peril begins" (*14*). The protective duty owed to third parties may be discharged by warning them of the source and nature of danger or notifying public authorities that exercise the state's police powers, which include public health authorities.

All states require that specified "listed" or "notifiable" diseases be reported to public health departments. AIDS is uniformly notifiable, but AIDS-related complex (ARC) usually is not. A few states, including Arizona, South Carolina, and Wisconsin, expressly require reporting of positive HIV-antibody tests, but others such as Minnesota have more generally expressed provisions that require reporting of any "case," "condition," or "carrier state" relating to listed diseases, including AIDS (*15*). Reports of anonymous epidemiological monitoring may be unobjectionable, but if reports will disclose identities, they may deter people who fear they may be infected from approaching physicians or hospitals (*13*).

Where medical confidentiality is not limited by a duty of disclosure, courts may recognize a privilege of disclosure if exercised in good faith to protect another against perceived serious risk. Disclosure of only necessary information is protected, and publication must be confined to persons with a need to know for protection of the threatened vital interest (*16*). This protection of disclosure is part of the law's accommodation of necessity to act to preserve human life. Disclosure is based on a reasonable perception of danger—the privilege of disclosure covers the situation in which an individual is informed of positive HIV-antibody test results that prove to be false positives.

Nondiscrimination Laws

Because the rights to confidentiality of people who have been exposed to (or who are actually infected by) the virus are so compromised in law that their status may become known, they have to invoke related rights to nondiscrimination as disabled or handicapped persons (*17*). Private persons and bodies in some states are governed by antidiscrimination legislation only when government is involved, such as through financing or subsidizing a private enterprise. Patients affected by AIDS and ARC may establish their disabled status, but asymptomatic patients showing seropositivity have an unconfirmed status as disabled persons (*18*). They are not handicapped according to common law or statutory definitions (*19*) and face limitations primarily through restrictions of life-style they adopt and through others' responses to them.

Health care. Rights to nondiscrimination in health care are important particularly if hospitals and health care facilities test patients for HIV antibodies and health professionals are disposed to deny services to proven seropositive patients. Attending physicians, hospitals, and health facilities have duties not to abandon their existing patients, but when hospital or facility admission is refused and health professionals decline to enter into treating relationships (*20*), nondiscrimination rights become central to the affected persons' welfare. Legislation, notably in California, Wisconsin, and Michigan, prohibits health professionals from discriminating against persons having or suspected of having conditions associated with AIDS (*21*).

Employment. Retention and acquisition of employment may depend on rights of nondiscrimination (*22*). If AIDS, ARC, or seropositivity does not impair employment performance or place other employees or the employer's customers at risk, discrimination on grounds of health status is unjustifiable. Further, where impairment or risk of infection exists, a right may be claimed to alternative work deployment where there is neither impairment nor risk to others before dismissal is justifiable. City ordinances, notably in California, and legislation, most explicitly in Wisconsin, regulate employers' use of HIV-antibody tests (*2, 23*).

It appears that other employees' fears of working at close quarters with an infected person that lead to disruption in the workplace are not sufficient in themselves to justify the person's dismissal. As the U.S. Supreme Court has observed on prohibited discrimination: "Society's accumulated myths and fears about disability and disease are as handicapping as are the physical limitations that flow from actual impairment" (*24*). Courts may occasionally be sympathetic to employers' extraordinary hardship because of customer or even coworker preferences, but have not been sympathetic in race and sex discrimination suits. A restaurant owner known to employ an HIV-infected waiter or chef, for instance, might consider himself to have legitimate grounds for dismissal of that employee. Unusual hardship because of an employee's AIDS or ARC may be claimed to constitute a "just cause" for discharge under collective bargaining agreements, although seropositivity alone probably would not be justification (*25*).

Housing. Infected persons may have to consider their legal rights in order to keep or obtain housing. Zoning prohibitions against group homes for the infected raise legal issues of substantive and procedural rights to have planning legislation properly applied. More common, however, are invocations of rights against public and private landlords and participants in the housing market. Public housing is often subject to antidiscrimination laws, and these may also apply to private housing, but their application beyond racial, sexual, and marital-status distinctions is contentious unless the laws clearly prohibit handicap or disability discrimination (*26*).

Tenants who are infected or are in high-risk categories of infection have no better rights than other tenants to lease renewals or against eviction for breach of applicable clauses in tenancy agreements, and they benefit no more than others from tenant-security laws governing rental agreements. Clauses in tenancy agreements on eviction for misconduct or "good cause" may be

applied, for instance, against criminal drug-users (*27*). Consumer protection laws now often reinforce tenants' rights to resist landlords, however, because leases and rental agreements are viewed less as property transactions than as landlords' service undertakings.

Consumer protection legislation may also work to the disadvantage of infected persons. The sale of accommodation formerly occupied by such persons was historically governed by the principle "let the buyer beware." Legislation or case law may have been developed, however, that requires disclosure of invisibly unsafe conditions in property and of material facts that significantly reduce its value (*27*). An HIV-infected occupant as such apparently leaves no risk in a home that jeopardizes its safety, but knowledge of the former occupancy may lower the resale value (*27, 28*).

Education. School-aged children with HIV infection and their parents who invoke rights and indeed obligations under compulsory school attendance laws may be resisted through argument based on public health laws on contagious and infectious diseases, through picketing, boycotts of schools by other parents and children, and worse. Rights of access to public education below school-leaving age are not necessarily certain, but are increasingly viewed as a matter of entitlement (*29*). Compulsory school attendance laws seem in principle to confer corresponding rights. Admission may depend, however, on immunization and hygiene tests that HIV-infected children fail. The U.S. Supreme Court has upheld laws conditioning public school attendance on vaccination (*30*), and similar laws requiring proven immunity from contagious disease have been approved at lower levels of courts as a valid exercise of police power even in the absence of emergency or threatened epidemic (*31*). Again, children's rights of school attendance, in the absence of an imminent danger of spread of disease, have been based on laws prohibiting discrimination on grounds of handicap (*32*), and establishment that seropositivity is a handicap.

More refined arguments may be made that the right to an education cannot be satisfied through public provision of isolated instruction (*33*), since an important component of education is socialization with peers. The right of peer contact may be unenforceable at one level in that other children may be directly and indirectly induced to ostracize an infected child, but the right may be asserted against a public school board rather than against other children. The claim will be for an opportunity of broadly defined classroom education, not for achievement of an educational outcome. If educational malpractice claims against school and education authorities gain recognition, however, failure to achieve standards of literacy and other skills in children may become actionable.

Insurance. The ability to obtain insurance protection has been a source of bitter controversy (*34*). Seropositive applicants have complained of discrimination when denied insurance coverage, and private insurance companies have complained of exploitation and abuse by AIDS patients. Health insurance is distinguishable from disability and life insurance, but all forms of insurance are subject to legal principles of fiduciary obligation. Because parties seeking insurance know their circumstances better than those offering coverage, they are required to redress the imbalance of power derived from knowledge by making full and frank disclosure of material information. Knowledge of HIV infection appears material, but problematic is whether knowledge of membership in a high-risk group must be disclosed. The law often imputes knowledge to those who should make relevant inquiries to obtain it. An insurance policy may be voided in legal principle for lack of an insured's due disclosure of what is, or should be, known.

Health insurance is particularly costly to provide to the population of AIDS patients, not only because of high treatment costs but also because sufferers tend to be young and have thus not paid premiums long enough to permit insurers to accumulate capital. Life insurance is similarly costly, and companies cite patients with full-blown AIDS taking out large policies at high premiums for the short time before they die, when their beneficiaries, who may have contributed to payment of premiums, recover the high sums insured. Insurance company problems are aggravated by their common practice of contracting to offer group insurance to classes of persons not dependent on individual health examination (*35*).

Those claiming rights of insurance say that it is discriminatory to require the population with AIDS to furnish the funds they cause to be spent, when other populations, such as alcoholics and elderly drivers, are not expected as a group to cover their costs. Distribution of costs over an undifferentiated population is said to be the function of insurance. Further, health insurance and disability insurance in the United States have remained largely privatized, unlike in most other developed countries, because government has been persuaded by the insurance industry that the industry can provide adequate coverage. Government regulation requires that companies do so comprehensively, without discriminating unduly against the sick and handicapped. Patients with AIDS cause large but limited health care expenditures, but companies are particularly apprehensive of uncontrollable costs of maintaining the health of seropositive insureds.

Rights of HIV-infected people to insurance depend significantly on government regulators of the insurance industry disallowing AIDS-based discrimination, such as by exclusions from coverage and prohibitive premiums (*36*). Regulation may prohibit or control questioning of applicants (*37*), but also may permit limits on coverage when health information is not given or applicants do not agree to testing. Conditions may also be set for testing, such as that it be medically indicated and not simply based on life-style.

Related areas. A sizable array of additional activities exists that may be subject to laws governing discrimination against AIDS patients or HIV-infected persons. Public sporting or recreational clubs may fear members inadvertently exchanging such body fluids as perspiration and saliva, which have not been shown to cause infection, and blood. Public ambulance and paramedical services seem to deny their purpose when they refuse assistance to persons who are sick due to AIDS, and these services and privately operated common carriers may be liable under antidiscrimination laws (*21*). Embalmers, funeral homes, and cemeteries may be reluctant to manage corpses of AIDS patients, but may violate rights of AIDS victims' families to proper and prompt disposal of relatives' remains (*21*).

A number of bills have been introduced in state legislatures to control the right of HIV-infected persons to marry (*38*). Drawing on conservative laws that made satisfactory testing for certain sexually transmitted diseases a condition of obtaining marriage licenses, some have urged that no marriage license be issued without a negative antibody test result (*39*). This condition appears constitutionally flawed (*40*), would have no effect on homosexual couples who cannot legally marry, and seems overreaching in attempting to enforce the moral duties couples contemplating marriage owe each other. Further, it is counterproductive to prevent informed couples, one or both of whom are infected, from marrying, since their sexual fidelity to each other is better encouraged than obstructed. This issue requires attention to be given to the legal duties of infected persons.

Infected Persons' Duties

Criminal law. HIV-infected persons are bound by criminal laws that govern offenses ranging from the most heinous classical crimes to relatively minor modern administrative infractions (*41*). Some

jurisdictions, such as Florida and Idaho, have introduced a new crime of willfully or knowingly exposing another to the AIDS virus, but most jurisdictions seem able to rely on existing offenses of (attempted) homicide (*42, 43*) and, for instance, assault with a deadly weapon. The latter was successfully charged in Minnesota when an infected prisoner bit two prison guards (*42, 44*).

Those who know of their infection, but still have sexual relations without condoms, and infected drug-takers who share needles or syringes may be charged with attempted murder or assault with intent to kill, although if their intent to kill cannot be shown the charge will be dismissed or reduced. Manslaughter may be charged against those proved to have caused death when they knew or should have known of their liability to transmit the infection. Blood donation when it was possible that the donor was infected is difficult to charge. Such an offense might be prosecuted as manslaughter or negligent killing if death were to be caused, but would not otherwise be indictable if the purpose of donation was to have the blood tested and rejected, with notification to the donor if it tested positive for HIV antibodies.

Risking the transmission of AIDS may lead infected persons to be charged with related offenses. Prostitution-based crimes may be charged when paid sexual relations are involved, and even without commerce, sodomy may be charged in cases of both unprotected and protected homosexual sex (*45*). Drug offenses may similarly be pursued when they are the origin of risk of transmission (*46*). More specifically, offenses relating to the running of such enterprises as gay clubs and bathhouses may be charged, although these may shade into zoning or comparable regulatory infractions. Charges relating to sexually transmitted diseases may be pressed where the law penalizes infected persons' failure to report, to seek testing or treatment, or to remain celibate, but enforcement questions are then raised regarding infections such as AIDS that are transmissible both sexually and nonsexually.

Civil law. Noncriminal law seeks to deter harmful conduct not by imposing punishment, but by such means as ordering wrongdoers to pay compensation for the injuries they have caused (*47, 48*). The duty of care that the tort of negligence requires to be observed is often supplemented by statutes that require proper care of others. Civil actions arising from transmission of AIDS range from wrongful death claims for wrongfully causing a victim to die to so-called "wrongful birth" (*49*) or "wrongful life" (*50*) claims. The latter charge is brought by or on behalf of a child who contracted infection in utero (*51*). The essence of such a claim is that, where the infection was unavoidable, the child should not have been conceived or born. Lingering doctrines of parental immunity may protect mothers against suit, but render liable those other than their husbands whose wrong caused their infection or pregnancy. Few jurisdictions, in fact, recognize wrongful life actions, and, because liability to such action may lead to abortion, some jurisdictions have prohibited them (*52*).

Sexual transmission of HIV fits within the rather unclear framework of legal liability for spreading venereal disease and, for instance, herpes (*53*). The duty each person has to protect a sexual partner against a contagious disease (*54*) is defined by the policy of the law to require infected persons to exercise ordinary caution. Those who know or reasonably should know of their liability to have and therefore to transmit HIV are responsible to inform or otherwise protect sexual partners. In contrast, an asymptomatic sex partner not in a high-risk group may not be liable for failing to recognize presence or risk of infectivity.

A party seeking compensation is legally required to show that infection was caused by breach of duty by the party sued. The long incubation period of AIDS may obstruct the tracing of an alleged source and make it difficult to establish that party's wrongful nondisclosure or failure to follow prudent sexual behavior, or the plaintiff's seronegativity prior to the sexual encounter and low-risk conduct thereafter. Further, even when causation can be shown, a defense exists that the plaintiff voluntarily accepted the risk of infection. This defense is defined by the legal principle that requires persons voluntarily placing themselves at risk to protect themselves (*54*). Many claims for venereal infection and pregnancy, and defenses to paternity and child maintenance claims, have failed on grounds of the assumption of risk doctrine. Some courts compromise through recognizing a claim for spread of infection, but reducing recoverable compensation by finding that the claimant contributed to the injury (*47*).

Liability for battery is unlikely since consent is a full defense, and consent need be only to the sexual encounter in general rather than to an act of the specific nature and quality that occurred. Ignorance of a sexual partner's infection does not convert voluntary intercourse into rape in criminal law, and is equally unlikely to convert it into battery in civil law. A claim for fraudulent misrepresentation may succeed, however, if an infected person deliberately gives an assurance of noninfectivity that induces the sexual act (*55*). An assurance may be made by silence when a trust or fiduciary obligation of disclosure arises, as in marriage or other confidential relationship. Other tort claims may be for inflicting emotional damage or causing outrage by deliberately risking AIDS transmission, and for causing psychic injury through negligently spreading infection, although courts may find particularly the latter claim too speculative and open to abuse.

Liability for provision of contaminated blood products concerns both blood donors and intermediate processors such as hospitals and blood banks (*56*). They may bear liabilty to recipients, however, only when their actual negligence can be shown and not under legal principles that impose strict (no-fault) liability on producers of certain items (*57*). Product liability principles are inapplicable where supplying blood is considered to be a service rather than a commodity transaction, as it is in most states at least in clinical cases (as opposed to large volume blood sales). Blood product consumers' rights of informed decision-making on use of products entitles them to general information on the origin and safety processing of materials they propose to receive, although information may have to be given only on their request. They have no right, however, to identifying information about specific blood donors (*58*).

In addition to liabilities under general civil laws, infected persons may bear special liabilities, for instance, to involuntary detention on grounds of dangerousness or incompetency arising under mental health legislation. Dementias objectively discernible by psychological tests appear to occur in over 50% of AIDS patients (*59*), and other neurological conditions associated with different stages of disease development may bring affected persons within controls of mental health systems. Indications for engagement of mental health laws include general dangerousness, danger of spreading HIV infection, inability to maintain self-care and, for instance, microcephaly in children born with HIV infection.

Uninfected Persons' Rights to Protection

Persons not infected with HIV have numerous legal rights to protect their own welfare and that of others that their infection might endanger, such as their unborn children. Their rights correlate to others' duties, notably infected persons' obligations to exercise due care not to transmit HIV. Health professionals have special duties to screen and control agents of HIV transmission such as blood, to warn of known risks outside their control, and to advise on conduct and life-style that will reduce risk of infection. Obser-

vance of others' rights must be carefully judged, however, because persons' rights to be informed and counseled, when served by aggressive and directive counselors, may endanger their rights not to be unduly alarmed. The rise of the medical malpractice action for induction of cancerphobia (*60*) and of, for instance, clergy liability for negligent counseling causing or aggravating distress and suicidal tendencies (*61*), indicates a line between rights to be informed about AIDS and not to be harmed by misinformation. Uninfected persons may have to compromise their preferred conduct or life-style when they lack rights to receive the protective services or devices they want; prisoners may be unable to receive condoms, for instance (*43, 62*), and illicit drug-takers may have no claim to clean needles or syringes. Where legal rights to goods or services exist in principle, they may be unavailable to indigents (*9*) because while other persons or bodies have duties not to obstruct access to such goods or services, they have no duties to supply them without charge. Legal rights to self-provision of costly preventive services or treatments may alone be inadequate to ensure their availability.

Rights and Duties of Health Professionals and Authorities

Several jurisdictions have recently enacted laws of differing scope and terms that allow AIDS patients to be detained and isolated (*15*), but historic unrepealed laws are frequently found to contain isolation and quarantine powers (*63*). Particularly in developed countries, public health standards have so improved and epidemic disease has become so infrequent that it is easy to forget that legislation once led public officers to exercise the state's police powers with considerable invasiveness and coercion. Compulsory testing for venereal disease and the subjection of prostitutes to detention, quarantine, and internment are well within living memory: during World War I more than 30,000 prostitutes were incarcerated in federally supported institutions in the United States (*64*). Legislation accommodated both moral and public health panic, both of which are apparent in some responses to AIDS.

Some health authorities have proposed that they have legal powers of nonconsensual screening of high-risk populations for AIDS. The military initiated screening in 1985 and has tested over 3 million individuals (*65*), on the explanation that, in combat, the military constitutes its own supply of transfusable blood. Particularly targeted by other screening programs have been such legally accessible groups as immigrants and refugees, prisoners, convicted prostitutes, and known drug addicts. Several proposals invoke control measures traditionally used to contain airborne contagious diseases, and often reflect misunderstanding of the principal modes of AIDS transmission. Requests that public health authorities exercise existing or newly acquired legal rights of quarantine presume that this is a preferable means of disease containment. More specific proposals have been made to use legal powers, which include due-process protections, to isolate "incorrigible" or "recalcitrant" persons aware of their infection who continue to engage in high-risk conduct dangerous to others despite warnings given by health professionals (*11*).

Hospital staff make a case for a legal right of routine (that is, involuntary) screening of patients on admission because of the risk they present of exposing hospital personnel to their body fluids. Apart from inapplicability of such testing to emergency admissions, particularly trauma cases, results of testing may yield little useful information. False-positive results will lead to the same precautions as true-positive results, but true-negative results may indicate only that the incubation period of HIV infection has not been sufficient. Routine precautions that are available, and those that hospital authorities often legally require to be taken against hepatitis may achieve a high level of protection. The AIDS policy of the American Medical Association rejects mandatory testing of hospital patients (*66*).

Health care workers have stronger legal remedies against their employers than they have against AIDS patients to protect their own well-being. Under occupational safety and health laws, they are entitled to high standards of personal safety in their work environments (*21*). Hospitals and comparable facilities must train and equip their staff for safe practice and enforce legally mandated standards of protection. Availability and use of gloves and gowns are minimum conditions of safety; provision of such clothing and of sterile equipment protecting both patients and staff members is to be expected. New U.S. federal guidelines (*20*) to protect health care workers, reflecting earlier recommendations of the U.S. Public Health Service and the American Hospital Association, stress that all patients be viewed as potentially infected, and the Occupational Safety and Health Administration has power to penalize hospitals and other medical facilities that fail to observe prevailing safeguards to protect health care workers. Staff who suffer work-related infection may take legal action against their employers or present claims before workers' compensation boards.

Health care workers, including physicians and nurses, who feel inadequately protected against AIDS-infected patients may decide to withdraw from the workplace or decline to treat known AIDS patients or identified members of high-risk groups (*20*). They may be in breach of service contracts unless it can be shown that the employers were in breach of express, implied, or legislated provision on employee protection, or that withdrawal was for adequate cause. Whether refusal of professional services to AIDS-infected persons, for instance, by hospital staff not bound by contracts, legally justifies condemnation as misconduct by the disciplinary tribunal of a licensing authority has not yet been litigated (*67*).

Authorities with legal responsibility for individual health protection of dependent or captive populations often aim to prevent sexual and drug-related conduct for reasons of morality, discipline, and policy, not simply to contain HIV infection. Prisons, adolescent correctional facilities, group homes, and, for instance, homes for retarded persons may accordingly be reluctant to offer instruction in safer sex practices and to make condoms available (*62*). Denying mentally incompetent persons means of self-protection in indulging their sexual instincts and leaving anyone exposed to risk in the sexually brutal or callous conditions that prevail in some prison and comparable facilities open authorities to legal liability to nonculpable victims of HIV infection that reasonable care could have prevented.

Public health authorities and public and private sanitation undertakings have legally enforceable duties to dispose of pathological and comparable wastes in a manner that protects both handlers and communities from risk of infection. Laws on public nuisance must be observed in waste storage and disposal, and waste collection must be under instructions and supervision that are protective of personnel. Legal duties must be observed under specific legislation, contract law, negligence law, and occupiers' liability and land law on escape of dangerous materials brought onto or otherwise nonnaturally accumulated on premises.

International Legal Developments

International collaboration on the epidemiology, control, and searches for cures of AIDS, ARC, and HIV infection is gathering momentum, particularly through the instrumentality of the World Health Organization (WHO) (*68*). Legal and regulatory initiatives

are essentially national, however, with minor exceptions regarding international travel, where collaboration has occurred to reduce obstacles to transit (*69*). The Health Legislation Unit of WHO continues to amass an unrivaled collection of information on different countries' enacted and proposed laws specific and relevant to aspects of AIDS. Particularly through the Unit Director, information is promptly and systematically published in the WHO's quarterly journal *The International Digest of Health Legislation* and synthesized in various other publications (*70*).

Legal rights and duties outlined above reflect general approaches in jurisdictions of the United States and other countries of the common law tradition such as England, Canada, Australia, New Zealand, and many other members of the British Commonwealth. The prominence given to constitutional provisions in the United States is not common, however, in other jurisdictions. By 9 December 1987, 128 countries had reported at least one AIDS case (*71*) and have had to engage their legal systems at different levels in management of clinical and public health aspects of these cases. Legislative proposals elsewhere often parallel U.S. developments on, for instance, reporting requirements and control of high-risk populations and immigrants. Several countries, such as Sweden (but not the United Kingdom), have used regulatory changes to bring AIDS infection within existing legal frameworks governing sexually transmitted and contagious diseases.

Coercive legislation has been specially enacted in Austria (*72*) and in Bavaria [West Germany (*73*)] that controls prostitutes, and in the latter provides for compulsory testing of suspected persons, prisoners, and refugees. Infected persons are required to inform prospective partners in sexual and other contacts of their liability to transmit infection. Aliens may be denied residence permits and, if medical orders are disregarded, may be deported. In April 1987, Iraq went further and required compulsory testing of returning nationals (*74*). In August 1987, the Soviet Union adopted strong measures (*75*) for mandatory testing of selected Russian and foreign citizens and stateless residents, with liability to expulsion for non-Russian citizens who evade testing. Up to 5 years of incarceration may be imposed on those who knowingly expose others to risk of infection, and up to 8 years if infection is actually transmitted.

Countries in some regions of the world where AIDS is widespread, such as Central Africa, have been slow to invoke or implement laws. Much legislation in the early to mid-1980s in Europe and, for instance, Australia, was concerned with control of blood donations and screening of blood products, and may have contributed to success in reducing transmission of infection by this route. Other laws tend to reflect the conviction that the disease is primarily of alien origin and to adopt stereotypical views of the necessity to protect national boundaries against outsiders. Marginal domestic groups may also receive stereotyped attention. For instance, in June 1986, Guatemala introduced remarkably detailed AIDS regulations (*76*) to control women prostitutes; female employees in bars and cafés; dancers in bars, shows, nightclubs, and cabarets; and women working in men's saunas and massage parlors. The United States, in whose state legislatures 51 bills on AIDS were passed in 1986 (*77*) and 550 such bills were introduced in the first 8 months of 1987 (*78*), may be pioneering recognition, however, that AIDS has become a feature of the environment.

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The Brain in AIDS: Central Nervous System HIV-1 Infection and AIDS Dementia Complex

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Infection with human immunodeficiency virus type 1 (HIV-1) is frequently complicated in its late stages by the AIDS dementia complex, a neurological syndrome characterized by abnormalities in cognition, motor performance, and behavior. This dementia is due partially or wholly to a direct effect of the virus on the brain rather than to opportunistic infection, but its pathogenesis is not well understood. Productive HIV-1 brain infection is detected only in a subset of patients and is confined largely or exclusively to macrophages, microglia, and derivative multinucleated cells that are formed by virus-induced cell fusion. Absence of cytolytic infection of neurons, oligodentrocytes, and astrocytes has focused attention on the possible role of indirect mechanisms of brain dysfunction related to either virus or cell-coded toxins. Delayed development of the AIDS dementia complex, despite both early exposure of the nervous system to HIV-1 and chronic leptomeningeal infection, indicates that although this virus is "neurotropic," it is relatively nonpathogenic for the brain in the absence of immunosuppression. Within the context of the permissive effect of immunosuppression, genetic changes in HIV-1 may underlie the neuropathological heterogeneity of the AIDS dementia complex and its relatively independent course in relation to the systemic manifestations of AIDS noted in some patients.

IT IS NOW CLEAR THAT INFECTION WITH HUMAN IMMUNODEFICIENCY virus type 1 (HIV-1) is complicated by a dementing neurological disorder, the AIDS dementia complex, which is both a common and an important cause of morbidity in patients in advanced stages of infection (*1*). It was not long after the recognition of AIDS in 1981 that reports began to appear of an unusual encephalopathy in affected patients (*2*). Initial efforts to identify and classify this neurological syndrome were directed toward identifying an underlying opportunistic infection (*3*), but misgivings with this approach arose as more detailed clinical-pathological studies were performed (*1*, *4*) and as a parallel disorder was observed in children, who are less prone to opportunistic brain infections (*5*). Identification of the retroviral etiology of AIDS allowed introduction of the hypothesis that HIV-1 itself might infect the brain and directly cause dementia. This hypothesis, accounting for the frequency and unique character of both the clinical syndrome and its neuropathology, also found support in precedents of retrovirus brain infections of animals that had been studied as models of neurodegenerative disorders. In particular, comparisons were made with visna virus, the prototype lentivirus, which shares considerable biological similarity and some genetic homology with HIV-1 (*6*). This rapidly led to identification of HIV-1 in brains of demented patients, first by Southern blot analysis and in situ hybridization (*7*) and subsequently by other techniques (*8–16*).

Although considerable progress has been made in characterizing and understanding this new neurological disorder, many questions remain regarding both its clinical and biological features (*17*). In this article we review the clinical, epidemiological, and pathological aspects of the AIDS dementia complex and discuss some of the principal unresolved issues regarding its viral pathogenesis.

Clinical Features of AIDS Dementia Complex

Patients with the AIDS dementia complex present with a variable, yet characteristic, constellation of abnormalities in cognitive, motor, and behavioral function (*1*). Perhaps the salient aspects of the

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