

AIDS-HIV Spring 1989: Overview and Update
University of California, San Francisco
School of Medicine

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MED 170.01

**A MULTIDISCIPLINARY SURVEY COURSE ON AIDS AND HIV;
PRECLINICAL ELECTIVE WINTER QUARTER**

Presented by the AIDS Professional Education Project with support from the National Institute of Mental Health and the Departments of Medicine and Psychiatry, UCSF School of Medicine

Schedule of Lectures:

Overview and Introduction -- Harvey S. Bartnof, M.D.

Immunology and Lab Tests -- Daniel P. Stites, M.D.

Infection Control and Health Provider Issues -- Julie L. Gerberding, M.D.

Virology and Vaccine Prospects -- Jay A. Levy, M.D.

Epidemic Perspectives -- Paul Volberding, M.D.

Clinical Manifestations -- Harry Hollander, M.D.

Panel: Persons with AIDS/ARC

Neurologic Manifestation -- Dale Bredesen, M.D.

Oral Manifestations -- Deborah Greenspan, B.D.S.

Dermatologic Manifestations -- Richard Odom, M.D.

Diagnosis and Treatment of Pneumocystis carinii -- David Chernoff, M.D.

Transfusion and Blood Bank Issues -- Herbert A. Perkins, M.D.

Hemophilia and AIDS -- Marion Koerper, M.D.

Pre-AIDS Syndromes -- Donald Abrams, M.D.

Diagnosis and Treatment of Brain Diseases -- John Engstrom, M.D.

Neuropsychiatric Issues -- Jonathan Mueller, M.D. and Margaret Grade, Ph.D.

AIDS: Historical Perspectives -- Guenter Risse, M.D., Ph.D.

Pediatric AIDS -- Peggy S. Weintrub, M.D.

Diagnosis and Treatment of Viral Diseases in AIDS -- Mark A. Jacobson, M.D.

Heterosexuals and AIDS & Women and AIDS -- Constance Wofsy, M.D.

Ethnic Minority Issues -- Mindy Fullilove, M.D.

AIDS Agencies Panel -- AIDS Service Agencies

Legal Statutes & Legal Issues -- Dan Tennenhouse, M.D., J.D. & Ben Schatz, J.D.

Ethics -- Barbara A. Koenig, R.N., PhD. & Molly Cooke, M.D.

Gay/Bisexual Men and AIDS -- Thomas J. Coates, Ph.D. & Jeffrey S. Mandel, Ph.D., M.P.H.

Intravenous Drug Use and Substance Abuse -- Steven Batki, M.D.

The Future of AIDS -- George W. Rutherford, M.D.

OVERVIEW AND INTRODUCTION: WHY AIDS ?

Objectives

1. List three infectious epidemics which have killed at least 20 million people each.
2. List three transmission routes for HIV and three global transmission patterns for HIV.
3. List three subcategories within each of the three transmission routes listed in 2.

4. List four epidemiologic lines of evidence against "casual" contagion of HIV.
5. Describe the correct and incorrect ways to use a condom during sexual intercourse.
6. List ten fears of AIDS.

Introduction

In the fall of 1985, a few U.C.S.F. medical students expressed concern regarding their potential risk of acquiring Human Immunodeficiency Virus (HIV) infection in the clinical setting. After a needs assessment was completed, three fourths of first and second year medical students indicated they would be interested in attending an AIDS elective and over fifty percent indicated they would attend such an elective. As a result, a pilot AIDS elective was held during the spring quarter of 1986. Due to overwhelming interest in the pilot elective, the course was instituted as "AIDS-HIV: Overview and Update" during the winter quarter of 1986. Student feedback and evaluations as well as faculty input led to the curriculum changes for the winter quarters of 1987 and 1988. Given the magnitude of the epidemic in the City and County of San Francisco and the breadth of research being conducted at U.C.S.F. and in San Francisco, many researchers and clinicians are able to contribute to the many-faceted topics within the realm of an AIDS-HIV curriculum.

Student evaluations indicate a preference for the varied, multi-disciplinary approach with a number of expert lectures in lieu of one or even a few lecturers. The down side of this approach is that there may be some overlap between lecturer presentations; this appears to be far outweighed by the value of a number of guest lecturers, each with individual expertise.

This year's course has been expanded to twenty-four hours (two units) which now includes four case management lecture hours. All students are encouraged to ask questions of each lecturer, particularly if there is presented information which may seem to be conflicting with other lecturers.

AIDS: Not the First Epidemic

The epidemic of AIDS and related infections due to HIV is not the first infectious disease epidemic in the history of the human race. Western cultures have been spared such epidemics during the last thirty years. This has occurred coincident with the widespread usage of vaccines, antibiotic therapies and improved living standards.

Bubonic Plague. The worst epidemic in recorded history was the Black Death (bubonic plague). Approximately twenty-five million people (one-third of Europe's population) died from bubonic or pneumonic plague during the 1300s. Bubonic plague is contracted from infected fleas which transmit the organism (*pasteurella pestis*) to humans when their first choice animal, the rat, has died in large numbers.

Syphilis. Syphilis is a venereal disease like HIV. Interestingly, syphilis was extremely rare in Europe until 1492, when Columbus returned from America. During the 1490s, waves of epidemics of syphilis appeared affecting men, women and children. One author has described the public opinion towards syphilis over several hundred years. Initially, the reaction was fear and horror. Later, when syphilis was widespread, the attitude was one of indifference. With the Victorian Era, an attitude of sin or obscurantism occurred. Only at the turn of the century, in 1900, did more of an objective attitude begin to prevail. This was most likely due to the discovery of the infectious cause of syphilis, *treponema pallidum*.

Influenza. The influenza pandemic of 1918 through 1920 led to twenty-one million deaths throughout the world and 500,000 deaths in the United States alone.

Leprosy. Before the onset of the antibiotic era in the 1940s, leprosy had affected millions of people throughout the world. Due to deforming lesions on the skin and extremities, "lepers" were sequestered in leprosaria. Some parts of Europe established laws requiring lepers to wear wide brimmed hats and to ring a hand-held bell constantly which they carried while walking in the street to warn others of their presence. Leprosy is felt to be contracted only by close contact between susceptible individuals.

The Emergence of a New Problem

During the late 1970s and early 1980s, gay and bisexual men in New York City, Los Angeles and San Francisco were noted to have an increase in the incidence of white infections in the mouth. These were thought to be due to yeast (*candida*), some of which were later determined to be a new lesion called Hairy Leukoplakia. At this same time, these same individuals were noted to have diffuse enlarged lymph glands (generalized lymphadenopathy) the cause of which was felt to be non-specific. In 1980 and 1981, gay and bisexual men from these areas were found by their physicians to have the cutaneous lesions of Kaposi's Sarcoma, a previously rare cancer. In addition a number had a dry cough and shortness of breath, ultimately leading to the diagnosis of *Pneumocystis carinii* pneumonia (PCP). Due to the increase in requests for a second-line antibiotic (pentamidine) from the Centers for Disease Control, the CDC learned of these outbreaks of Kaposi's Sarcoma (KS) and PCP, a previously rare infection seen only in cancer and transplant patients (secondary to immunosuppressive chemotherapy) or in severely malnourished children. The outbreaks were significant enough for the CDC to publish information in *Morbidity and Mortality Weekly Report*. The July 3, 1982 issue was entitled "Kaposi's Sarcoma and *Pneumocystis* Pneumonia Among Homosexual Men - New York City and California." In a short time, the term "AIDS" was coined, Acquired Immunodeficiency Syndrome.

Within two to three years, several research laboratories identified the etiologic agent of AIDS, later named HIV, Human Immunodeficiency Virus. Much has been learned about the genes of this virus, including its own, detailed regulatory mechanisms. After HIV was discovered, an antibody test was developed, initially to screen the blood supply. When the test was administered to a number of healthy-appearing individuals from the various groups at higher risk, it was determined that large numbers of these asymptomatic individuals had been infected by HIV. Currently CDC data on prevalence of HIV in the groups at higher risk include the following: gay/bisexual men (24-68% seropositive), intravenous drug users (2-72%), hemophiliacs (40-79%), female prostitutes (0-40%), and steady heterosexual partners of HIV-infected persons (9-58%). Later, it was shown that a significant percentage of these "asymptomatic seropositives" still harbored live virus in their blood and sexual fluids (as measured by viral culture); hence these individuals were still sexually contagious. Thus, the entire scope of HIV infection was appreciated: (1) an AIDS iceberg, or triangle, with the disease AIDS representing only the tip; (2) beneath the "water line," a much larger group of persons with AIDS-related conditions, "ARC" (lymphadenopathy, oral thrush, oral Hairy Leukoplakia, etc.); and (3) the largest part of the iceberg representing the asymptomatic infected individuals. Throughout the world, there are currently five to ten million persons infected; the United

States has an estimated 1-1.5 million infected. Throughout the world, there are now over 120,000 persons with AIDS; in the United States there are over 80,000. The three parts of the iceberg or AIDS-HIV triangle indicate that there is a natural progression towards the surface, i.e. a tendency towards worsened disease from asymptomatic into ARC and/or AIDS.

In West Africa, AIDS patients were noted to have a negative reading on the original antibody test. The particular retrovirus which was causing disease in these individuals has a gene sequence which differed by >50% when compared to the original HIV. Thus, HIV-2 was discovered. The current FDA-approved ELISA antibody test kits used in the United States will not turn positive for all sera infected with HIV-2. There have been rare reports of individuals infected with HIV-2 in this country; they were individuals from West Africa who had immigrated to the U.S. Over the last few years, much has been learned about immunodeficiency viruses associated with other species, particularly monkeys and cats.

Human T-Cell Leukemia Virus, type one (HTLV-1), is a retrovirus associated with T-cell leukemia/lymphoma as well as neurologic disease. It is expected that the FDA will license an antibody test for this virus very soon so that the U.S. blood supply will be screened for this agent as well. The nature of a retrovirus is such that it needs to incorporate into the host's genome and use the host's "machinery" to replicate itself. However, a retrovirus may remain dormant within the human genome for many years.

Transmission Patterns

Due to the fact that the disease AIDS was observed in those groups that were at the highest risk for syphilis and Hepatitis-B, it appeared that the etiologic agent of AIDS was most likely transmitted via the same routes that these diseases are transmitted. Indeed, numerous epidemiologic studies have indicated that HIV-1 and HIV-2 are transmitted by one or more of three ways:

1. Blood contact with infected blood transfusion recipients from 1977 through 1985, rarely after; intravenous drug users who share needles and syringes; hemophiliacs who received factor VIII transfusions through 1985; and the rare health professional who acquired HIV infection associated with a needlestick injury or other mucocutaneous exposure to HIV-infected blood;
2. Bidirectional sexual contact (including heterosexual man to woman, heterosexual woman to man, gay/bisexual man to man via receptive anal intercourse or insertive anal intercourse, and lesbian contact);
3. Perinatal, from mother to newborn (during pregnancy, possibly at time of delivery, or after birth via breast milk).

Three global HIV patterns exist. These patterns reflect the population(s) into which HIV was first introduced. The first pattern occurs in North America, Europe, Oceania (Australia and New Zealand) and urban Latin America. The predominant modes of transmission in these areas include homosexual/ bisexual contact and intravenous needle/syringe sharing among drug users.

The second transmission pattern exists in Central Africa and the Caribbean. In these parts of the world there are negligible numbers of cases in the groups affected by transmission pattern 1. Instead a heterosexual and perinatal pattern predominates. Therefore transmission pattern 2 countries have many more affected women (approx. 50%) and newborns.

The third transmission pattern occurs in Asia, the Mid-East and Eastern Europe. In these parts of the world, there are relatively few AIDS cases reported. Predominantly, cases are represented by sexual contact with individuals from other parts of the world (either gay/bisexual or heterosexual). A few cases occurred via imported clotting factor concentrates from the United States. Certain cofactors may be involved in countries where transmission pattern type 2 exists, i.e. the use of non-sterile needles during cultural procedures, and possibly, infibulation, the ritual of genital scarring.

Heterosexual intercourse is the predominant method of HIV transmission in Central Africa. Epidemiologic studies of prostitutes support this fact. Cases of AIDS attributable to heterosexual intercourse are increasing in the United States. Several risk factors have been implicated in heterosexual and/or gay/bisexual transmission of HIV. These include:

1. genital ulcers (Herpes Simplex Type II, syphilis or chancroid);
2. the presence of chlamydiae (the most common VD in the US) for heterosexuals;
3. oral contraception usage in women (studies from Central Africa only);
4. a lack of circumcision in the insertive male partner (heterosexual transmission in Central Africa);
5. receptive anal intercourse for both women and gay/bisexual men.

The risk of sexual transmission appears to increase with worsening stages of HIV disease. Many epidemiologic studies from western countries have indicated that HIV is not "casually transmitted", i.e. via airborne, droplet or even food or insect vectors/mosquitoes. These reasons include:

1. an uneven sex distribution of HIV;
2. an uneven age distribution of HIV;
3. household and family members of persons with AIDS;
4. health professionals providing care for persons with AIDS.

The discipline of infectious diseases intuitively demonstrates that infection transmitted through air, by food, or by mosquitoes would lead to a relatively even sex distribution, and a relatively even age distribution in susceptible individuals. In the U.S., reported AIDS cases through September, 1988 reveal that 91% (66,892) of AIDS cases reveals a clear clustering in individuals in their 20s, 30s and 40s, typical of other kinds of venereal diseases, e.g. syphilis, gonorrhea, herpes simplex II (genital), and genital warts (human papilloma) virus. This merely reflects the most sexually active portion of the population. Examining pediatric (i.e. under age 13) AIDS cases in the U.S. reveals a very skewed age distribution. A majority are diagnosed before the age of two (perinatal transmission), with fewer aged three through seven (mostly blood transfusion), and very small numbers in the eight to twelve range (mostly hemophiliac boys, some blood transfusion, rare needle sharing and very rare sexual abuse).

The CDC/Montefiore study of HIV infection in family members of AIDS patients reveals that, even in close contact in a family or household interaction, HIV is not transmitted. In these studies, 93 to 99% of family members have shared the toilet, bathroom and kitchen facilities, with over 118,000 cumulative days sharing these areas. Forty-three percent shared eating utensils, yielding a cumulative of 20,108 days sharing; 59% shared drinking glasses for a cumulative of 28,275 days

sharing. Eighty percent kissed on the cheek yielding 66,698 days of personal interaction in this personal interaction. Of the individuals enrolled in these studies, a few were HIV-infected. They were either sexual partners of the index AIDS case, or children born of infected mothers. The vast majority were HIV antibody negative. Most individuals in these studies have been followed for at least 2-3 years.

Last, there have been over 3000 health care professionals enrolled in prospective studies examining the risk of occupational HIV exposure. These studies have shown a few individuals to be HIV infected. Interviews have revealed that some admitted to risk behaviors outside of the workplace environment; however, some became infected by needlestick exposure. The current risk of HIV infection from a needlestick exposure from an HIV-infected person is 0.4% per needlestick. Evidence against HIV transmission through insect vectors includes:

1. no detectable HIV replication in insects of insect cell lines in vitro;
2. no transmission in vitro by interrupted feeding experiments;
3. no epidemiologic evidence for insect transmission among household and neighborhood contacts of Belle Glade, Florida AIDS patients.

Prevention of Sexual Transmission

Barring abstinence, the use of latex condoms is helpful in preventing sexual transmission of HIV as well as other organisms which cause sexually-transmitted diseases. Condoms are known to rupture, often because individuals are not using them correctly. When being used, condoms should:

1. have no air in the tip;
2. have 0.5 cm empty space at the tip to accommodate the ejaculated semen;
3. be placed only onto an erect penis;
4. have added water-base lubrication (e.g. KY jelly, etc.).

Condoms should only be unrolled prior to usage and a new condom should be used for each episode of sexual intercourse. Oil-based lubrications should not be used with latex condoms, since they may cause the latex barrier to chemically degenerate. Animal skin condoms have been shown to allow passage of HIV as well as hepatitis B. Oral sex (semen contact into the oral cavity) appears to have transmitted HIV infection in a few reported individuals. Cunnilingus (oral contact to female genitals) appears to have transmitted the infection in a lesbian couple. Deep French kissing with the exchange of saliva appears to be a low-risk sexual behavior, probably due to the low concentration of virus particles in this body fluid. The virus has been isolated from nearly every body fluid examined. However, the only fluids which have been implicated in transmission include blood, semen, breast milk and vaginal/cervical fluids. Highest concentrations are found in cerebrospinal fluid, semen and blood. A number of items readily available easily inactivate HIV. These include: soap and water, bleach (sodium hypochlorite) best diluted with water in a 1:10 or 1:100 dilution; 3% hydrogen peroxide, 70% rubbing alcohol, 70% drinking alcohol, mycobacteriocidal hospital disinfectants, acid, as well as the spermicide non-oxynol 9. The use of non-oxynol 9 with condoms presumably would provide more protection than condoms alone should the condom rupture. Whether non-oxynol 9 is able to inactivate HIV-infected lymphocytes transmitted during sexual intercourse has yet to be fully evaluated.

Current Epidemiological Trends

In the U.S., the current distribution of reported AIDS cases among the various groups at higher risk are as follows: (1) homosexual/bisexual contact: 62%; (2) heterosexual IV drug user: 19%; homosexual and IV drug user: 7%; (3) hemophilia: 1%; (4) heterosexual: 4%; (5) transfusion recipients: 3%; (6) undetermined: 3%. Newly reported U.S. AIDS cases reveal a decrease in the percentage of those who acquired HIV infection by homosexual/bisexual male contact and homosexual male/IV drug usage. Newly reported U.S. AIDS cases reveal a percentage increase in heterosexual IV drug users, heterosexual cases and transfusion recipients (reflecting earlier infections now manifesting in disease). Analysis of the 3% of cases initially reported as undetermined reveal that 74% of these are reclassified into a known transmission category (after a second interview) while 26% remain undetermined.

Racial/ethnic minority groups are disproportionately represented in the AIDS epidemic when compared to the U.S. population. Blacks constitute 11.5% of the US population; however, in the AIDS population they comprise 26.5% of the patients. Latins comprise 6.4% of the U.S. population; however they comprise 13.1% of the AIDS population. A closer examination of blacks and Latins in the AIDS epidemic reveals that they comprise 41% of the total U.S. AIDS cases, 71% of AIDS in women, 71% of heterosexuals with AIDS and 76% of children with AIDS. American Indians, Alaskan natives, Asians or other Pacific Islanders, are represented in the AIDS epidemic, although in very small numbers to date. These data represent a challenge to deliver AIDS prevention strategies to racial and ethnic minority groups.

Classification and Progression of HIV Disease

The CDC has defined four classification groups of HIV, designated I-IV.

- I. Acute retroviral infection. This is manifested by a mononucleosis-like syndrome, including fever
- II. lymphadenopathy, sore throat, and sometimes gastrointestinal symptoms and a rash. Stage I infection is commonly observed in needlestick-acquired infection among health professionals.
- III. Asymptomatic infection, i.e. individuals who recover from the acute retroviral syndrome, or those who are found to be infected with HIV without symptoms or signs of disease.
- IV. Persistent generalized lymphadenopathy.
- V. Symptomatic disease. Group IV is divided into additional subgroups A through E:

- (A) represents constitutional disease, i.e. weight loss, fever, night sweats;
- (B) neurological disease;
- (C) secondary infectious diseases (both AIDS and "ARC");
- (D) secondary cancers;
- (E) other conditions.

Projections from the San Francisco Hepatitis B cohort study indicate that the progression to AIDS increases with time: 4%

progression rate in 3 years; 9% progression in 4 years; 14% in 5 years; 22% in 6 years; 34% in 7 years; 38% in 8 years; 42% in 9 years. Certain blood parameters have been shown to be specific markers for disease progression. These include:

1. a decline in the number of CD4-positive subset of lymphocytes;
2. the presence of p24 antigen;
3. anemia;
4. declining p24 antibody;
5. elevated Beta-2 microglobulin.

AIDS cases diagnosed in 1986 in San Francisco and elsewhere are living longer, i.e. 13.9 months median survival compared to 10.1 months median survival in earlier years. This is associated with earlier diagnosis, anti-pneumocystis prophylaxis and possibly therapy with azidothymidine (AZT, currently called zidovudine or Retrovir).

The initial double blind placebo-controlled trial of zidovudine indicated numerous benefits at the end of one-half year of taking drug for AIDS and severe ARC patients (latter group defined by <200 CD4 lymphocytes). These benefits included: decreased mortality, fewer recurrences of new opportunistic infections, less severe opportunistic infections, improved immunologic function, maintained or improved performance status, weight gain, and improved neurologic function. As a result of this trial, the FDA licensed the drug; it is the only FDA-licensed therapy for AIDS or ARC. Continued benefits with zidovudine are seen at 12 to 18 months after onset of administration, as well as in pediatric AIDS patients, and possibly in AIDS-related Kaposi's Sarcoma. Toxicities include nausea, vomiting, low white and red cell counts, myopathy, and potential rebound meningo-encephalitis. Ongoing studies of zidovudine are attempting to ascertain potential benefits in asymptomatic seropositive individuals, those with lymphadenopathy, and health providers who have sustained needlesticks from known HIV-infected patients.

Non-Biomedical Issues

We have witnessed three epidemics in AIDS: the first includes a silent epidemic of individuals becoming infected unknowingly and infecting their sexual partners and/or needle-sharing partners. After a few years the second epidemic of the disease AIDS was recognized. When communities and society began to appreciate the onset of a new infectious disease epidemic, the third epidemic in AIDS began to appear: the epidemic of social reaction, fear, and even hysteria. Anyone who has witnessed this epidemic can appreciate that the social and psychosocial aspects of the epidemic are most significant. Many investigators have demonstrated an inverse correlation between knowledge of AIDS and fear of AIDS; similarly as knowledge increases, fear tends to wane.

The fears of AIDS are many. Initially, the fear of AIDS is a normal, human emotion. Fears of AIDS include:

1. fear of disease and/or fear of infecting loved ones;
2. fear of an infectious disease which has no cure and no vaccination;
3. fear of death and dying, including: a protracted, wasting illness; fear of disfigurement; fear of isolation; fear of pain; fear of losing control of one's mental abilities; fear of losing control of one's bodily functions including gastrointestinal/urinary continence, and blindness; and the fear of losing one's ability to generate income;
4. fear of dying young;
5. fear or discomfort of sex and sexuality or "promiscuity";
6. fear of sexually-transmitted diseases;
7. fear or disapproval of homosexuality, its lifestyle and universality;
8. fear or disapproval of illicit IV drug usage;
9. fear or disapproval of prostitution and prisoners;
10. fear of uncertainty (of not knowing one's HIV status);
11. fear of censure or disclosure;
12. fear or prejudice against ethnic minorities;
13. fear of blood;
14. fear or discomfort with helplessness.

Until one can recognize one's own personal issues and fears mentioned above, it would be difficult to provide care as a health professional for the person infected with HIV, much less deal with the epidemic outside the health care environment. Health professionals are not immune from the fears of AIDS; indeed, there is a finite, albeit small, risk of nosocomial (hospital-acquired) infection due to HIV. Documented HIV seroconversion from needlesticks and AIDS cases among health professional without other known risk have occurred among nurses, laboratory workers, physicians, medical students, nursing students, housekeeping personnel, dentists and others. (As a result of the AIDS epidemic, newer infection control guidelines have been implemented to help protect the health professional from HIV infection via the nosocomial route. These have been called "body substance isolation" or "universal precautions." These include:

1. washing hands in between patients;
2. wearing disposable gloves when likely to be touching body substances, mucous membranes or non-intact skin;
3. wearing a plastic apron when clothing is likely to be soiled;
4. wearing mask and eye wear when likely to be splashed with body fluids;
5. not recapping or manipulating needle/syringe units or other sharp implements and disposing of them in designated disposable containers.

The potential risk of work-site infection with HIV has been a troubling issue for health professionals. A Modified Morin Belief Scale is useful in risk reduction of nosocomial HIV transmission. These beliefs include the recognition and understanding that (for health professionals):

1. AIDS is a dreadful disease and I am at risk for it in my profession;
2. Professionally-acquired HIV infection is potentially avoidable. Certain infection control behaviors will lessen the threat of my acquiring HIV in my workplace environment;
3. I can manage new, low-risk infection control behaviors which will lessen the threat of my acquiring HIV, and I can still lead a fulfilling life as a health professional;
4. I am willing and able to discuss universal precaution guidelines with my patients, colleagues and other health

professionals, which lessen the threat of my acquiring HIV in the workplace setting;
5. My health professional peers and community will support these new universal precaution behaviors.

Research and industry have and will continue to develop new devices which will further limit the risk of nosocomial HIV transmission to health professionals.

Fears of AIDS are closely linked to several ethical issues. These include:

1. obligation to care for patients with AIDS, ARC or other HIV infection;
2. patient confidentiality;
3. responsibility to protect others from HIV infection;
4. decisions about therapeutic intervention and terminal care.

All health professional groups have oaths which would preclude unethical behavior towards a group of patients with one type of infection. All professions have their risk.

The San Francisco Response

The City and County of San Francisco has the highest density of AIDS cases of any location in the United States with over 5000 recorded cases and over 3000 deaths. The community has responded in a most unique way leading to a plethora of AIDS-related service agencies. In-patient and out-patient AIDS-HIV services include medical, nursing, mental health and social services. Community-based services include sub-acute, intermediate and skilled nursing care, as well as home health and hospice care, and in-home assessments. Practical support and emotional support of AIDS patients are facilitated by the Shanti Project, San Francisco AIDS Foundation, and numerous other agencies. These agencies are listed in the Appendix of this syllabus.

Last

The notion of disease attribution is an old one in recorded history. In the history of medicine, there always appears to be a sector of society which believes that the "infected" deserve their disease. This can be traced back to the syphilis epidemics of the late 1400s. Public policy issues arise in the epidemic where the public health of society is pitted against the civil liberties of individuals. These civil liberties include rights of privacy, rights of confidentiality, rights of children with AIDS to attend schools, and rights of babies with AIDS to be raised in a loving, caring environment. The public health of society would include the duty to warn and the duty to protect, as we have with partner notification in other kinds of venereal diseases. Unique, creative solutions need to be sought to address both the public health and civil liberties issues in this epidemic.

Education has been and will continue to be of paramount importance in limiting additional infections and decreasing AIDS fears. Marked behavioral changes have been observed in the gay/bisexual male communities in San Francisco and elsewhere. Rates of primary and secondary syphilis in gay/bisexual men as well as rates of rectal gonorrhea have plummeted in many urban areas in the United States. However, education alone will not completely solve the epidemic. Problems in controlling the HIV pandemic include:

- 1 non-unified goals;
2. "perfect world" notion;
3. scope of reference;
4. invincibility;
5. attitude change and behavior modification;
6. "NIMBY" syndrome ("Not In My Back Yard,");
7. economic resources.

Part of the silver lining in the HIV pandemic will be the research discoveries made over the ensuing years which will enable us to understand, prevent and treat other diseases about which we currently have limited knowledge. One can envision newly-gained knowledge through HIV research which will enable health providers to better prevent and treat other viral diseases, other immune-related diseases, other oncological diseases and autoimmune diseases. One can anticipate significant potential advances in the areas of recombinant DNA technology, recombinant synthetic vaccines, biological response modifier therapy, as well as immuno-modulating therapies.

Assimilating the information presented in this overview and in this course will better enable the student to:

1. understand HIV-related biomedical and psychosocial issues;
2. educate patients and others about HIV, thereby limiting further transmission;
3. interact, counsel and treat HIV-infected patients in a non-judgmental, caring and professional manner;
4. minimize the risk of acquiring HIV while providing care to patients.