Public Health Service Plan for the Prevention and Control of Acquired Immune Deficiency Syndrome (AIDS)

Foreword

The PHS Executive Task Force on AIDS has developed this framework within which the Public Health Service is working to control and prevent acquired immune deficiency syndrome (AIDS) by the year 2,000. Our comprehensive plan is based on the state of the art since the isolation of the human T Lymphotropic Virus-III and development of the blood test to detect evidence of infection by the virus.

The plan includes broad-scale information and education activities in addition to research efforts to develop a vaccine, and treatments to fight the AIDS virus and restore functioning of the immune system.

Within each of these areas the PHS agencies have developed comprehensive plans of action. Programs to effect behavior changes for persons at risk and provision of up-to-date information on AIDS are important features of the plan, which assumes that a vaccine and effective therapy may not be immediately available. This outline and the specific plans of action are dynamic—as new information becomes available, steps will be modified accordingly.

The plan was developed as a continuation of the Public Health Service's extraordinary efforts to deal with this tragic disease almost since the first cases were reported in 1981.

James O. Mason, MD, DrPH
Acting Assistant Secretary for Health

PURPOSE:

This document provides an outline for the key goals and objectives that must be met to achieve prevention and control of AIDS. The plan calls for action by Federal agencies, State and local health departments, professional organizations, and volunteer groups. Many of the specific objectives cannot be expressed in measurable terms because of inadequate current information, but they are included here even though modifications will be made as more data are generated.

I. PROBLEM:

A. AIDS is a very serious, often fatal, disease caused by the virus HTLV-III.
B. The incidence of AIDS and infection with HTLV-III is increasing steadily in the United States.
C. More persons are known to be infected with HTLV-III than have become ill. The incubation period for AIDS in adults may range from 1 to 6 years or more and in infants from 6 months to 5 years or more.
D. Infected persons may be capable of transmitting infection for many years, even though they may remain asymptomatic.
E. The ability of HTLV-III to persist in the infected individual results in a population of persons who may be at risk for years for development of severe illness.
F. HTLV-III infection is transmitted by infected sexual partners through exchange of body fluids, through equipment used to administer intravenous drugs of abuse, through contaminated blood and blood products, and from infected mothers to infants. Members of all population groups thus exposed are at risk.
G. No effective vaccine or therapy exists.

II. ASSUMPTIONS:

A. A person with a repeatedly reactive HTLV-III antibody test is infected with HTLV-III and able to transmit the virus to others.
B. Psychosocial and medical problems will increase as the number of AIDS cases grows and HTLV-III infection spreads.
C. The more HTLV-III infection is disseminated throughout the population before effective control measures begin, the harder it will be to bring it under control.
D. Because there is no means of intervention during the long incubation period to prevent severe AIDS, a vaccine that prevents infection will be an effective tool for control only after it has been in use for several years. On the other hand if early therapy becomes available to reduce infectiousness in those already infected, and if persons at risk take responsible preventive measures, control of AIDS will be realized much sooner.
E. It is unlikely that a vaccine or therapy to substantially limit transmission will be generally available before 1990.
F. Broad scale prevention and control activities, emphasizing educational and information exchange, must begin in the absence of available vaccine and specific therapy. They should be based on current best public health judgment.
G. Demonstration and evaluation projects are needed to determine the efficacy and cost-effectiveness of prevention and control strategies.

III. GOALS:

A. By 1987, reduce increase in transmission of HTLV-III infection.

B. By 1990, reduce increase in the incidence of AIDS.
C. By 2,000, eliminate transmission of HTLV-III infection with a decline in the incidence of AIDS thereafter.

IV. OBJECTIVES:

A. Continue to clarify the epidemiology and natural history of HTLV-III infection.
   1. Maintain current epidemiologic surveillance of AIDS cases in the United States.
   2. Monitor the incidence of HTLV-III infection by geographic areas and among major high-incidence groups.
   3. Define diagnostic criteria for AIDS and other conditions associated with HTLV-III infection.
   4. Evaluate the usefulness of surveillance of other AIDS-related conditions.
   5. Determine:
      a. How frequently and under what circumstances HTLV-III infection persists in an infected individual.
      b. The efficiency of virus transmission by route of exposure, magnitude of exposure (dose), and other conditions.
      c. The severity of disease in relation to time and source of infection.
      d. The time frames for development of antigens and antibodies to HTLV-III in blood of infected individuals.
      e. The role of host factors and cofactors, including interaction with other organisms, in disease risk.
   6. Develop and evaluate new diagnostic tests for HTLV-III and improve existing assays.
   7. In order to clarify risk factors and protective factors for HTLV-III infection and AIDS, conduct epidemiologic investigations in various groups including:
      a. Homosexual/bisexual men.
      b. IV drug users.
      c. Persons with hemophilia.
      d. Recipients of units of blood or blood components containing HTLV-III.
      e. Both seropositive pregnant women to determine pregnancy outcome and the infants born to them.
      f. Heterosexual partners of infected individuals or of those at risk (e.g., prostitutes).
      g. Members of households of infected individuals.
      h. Health care, dental, and laboratory workers.
      i. Populations in countries where AIDS becomes prevalent.

B. Continue to implement national, State, and community risk reduction and education programs as early prevention and control measures.
   1. Provide current information on AIDS to all segments of the American public. Special efforts will be made for:
      a. Individuals at increased risk for AIDS to effect behavior change, which currently is the only mechanism available to prevent infection.
      b. Health care providers to increase diagnostic, treatment, and counseling services.
      c. Researchers to increase dissemination of their findings to speed the development of vaccine, therapy, and other intervention measures.
      d. Other groups including unions, management, blood collection agencies, high-risk group organizations, and educational authorities to disseminate accurate information to those who may have a responsibility for persons with HTLV-III infection.
   2. Develop specific prevention and control recommendations through consensus building among key individuals and groups.
      a. Convene representatives of relevant groups and organizations to generate specific recommendations for the control of AIDS among the following groups at high risk:
         (1) Homosexual and bisexual men, including representatives of black and Hispanic groups.
         (2) IV drug users.
         (3) Heterosexual persons with multiple sex partners.
         (4) Female partners of men at high risk, with special emphasis on perinatal transmissions.
         (5) Haitians and central African entrants to the United States.
         (6) Recipients of blood and blood products, organs, and tissues and artificially inseminated women.
      b. Convene representatives of State and local government agencies and professional and community groups concerned with research, the provision of care, educational aspects, and psychological aspects of AIDS to assist in coordinating appropriate programs.
   3. Encourage the implementation of community risk reduction and health education programs to effect behavior change regarding high-risk sexual practices and the use of IV drugs.
      Strong efforts will be especially useful in those geographic areas where high-risk groups do not have high rates of infection.
      a. Provide targeted education for groups and individuals at risk regarding specific high-risk behaviors.
      b. Provide risk reduction programs for high-risk groups and individuals to enable them to make the needed changes in their behaviors.
   4. Provide medical referral and counseling programs to persons who request testing or who know their antibody status as a result of blood or plasma donations.
   5. Continue to reduce opportunities for virus transmission through blood and blood products.
      a. Encourage voluntary donor deferral.
      b. Screen all units of blood and plasma.
      c. Require donor deferral lists for persons with reactive tests.
      d. Inactivate HTLV-III in all blood components and products where feasible.
   6. Encourage testing for donors of organs, tissues, cells, and semen for antibody to HTLV-III.
   7. Reduce opportunities for virus transmission through environmental measures.
      a. Encourage hospital and laboratory personnel to follow recommended precautions with patients or specimens known or suspected to be HTLV-III positive.
      b. Use effective disinfectants on contaminated equipment.

c. Encourage proper personal hygiene among infected persons.

C. Design and evaluate improved prevention and control measures.
   1. Develop and evaluate better approaches for detecting infection.
      a. Determine antigenic, genetic, and other variation among HTLV-III isolates.
      b. Develop and evaluate new antigen tests.
      c. Cooperatively develop guidelines for use of currently available and new tests.
   2. Develop and evaluate active immunoprophylaxis.
      a. Convene scientific advisory committees to plan for development and evaluation of vaccines.
      b. Characterize HTLV-III antigens biochemically and structurally to determine the specific component parts of the virus against which the antibodies generated by a vaccine would react.
      c. Develop specific candidate vaccines including subunit products, synthetic peptides, genetically synthesized antigens, and others.
      d. Develop new means of preparing, packaging, preserving, and transporting vaccine.
      e. Develop new, effective methods for delivering vaccine to substantial numbers of people.
   3. Develop and evaluate passive immunophylaxis, using artificially prolonged antibody.
   4. Develop and evaluate drug and biologic therapy including antivirals, immune stimulants, and combinations of these.
      a. Evaluate existing candidate compounds in laboratory systems and clinical trials.
      b. Design, produce, and evaluate new drugs based on results with existing compounds.
      c. Develop new immune stimulants and test available stimulants in animals or clinical research objects; investigate reconstitution of immune system, e.g., bone marrow transplantation.
      d. Test immune stimulants combined with antiviral therapy against HTLV-III.
      e. Evaluate host factors and possible cofactors.
   5. Develop and improve animal models to accomplish studies that cannot be done with humans or *in vitro* systems.
      a. Test candidate vaccines and drugs in chimpanzee and rhesus monkeys, which are the only animals shown thus far to be infected with HTLV-III.
      b. Use existing animal models and seek new species for study of animal retroviruses related to HTLV-III, e.g., feline leukemia in cats and retrovirus infection in nonhuman primates. Study agents that control these viruses.
   6. Assure that adequate facilities exist to support studies in the development and evaluation of vaccines, antivirals, and immune stimulants listed above.

D. Design and promote prevention and control programs that will enhance effectiveness by incorporating new intervention tools (vaccines/antivirals) as they become available.

Designing a National Disaster Medical System

EDWARD N. BRANDT, Jr., MD, PhD
WILLIAM N. MAYER, MD
JAMES O. MASON, MD, DrPH
D. EARL BROWN, Jr., MD
LOUIS E. MAHONEY, MD, DrPH

Dr. Brandt was formerly Assistant Secretary for Health, Department of Health and Human Services, and Chairman of the Principal Working Group on Health of the Emergency Mobilization Preparedness Board. He is currently Chancellor of the University of Maryland at Baltimore. Dr. Mayer is Assistant Secretary of Defense for Health Affairs. Dr. Mason is Acting Assistant Secretary for Health at the Department of Health and Human Services, and Acting Chairman of the Principal Working Group on Health of the Emergency Mobilization Preparedness Board. Dr. Brown is Associate Deputy Chief Medical Director for Programs, Planning and Policy Development of the Veterans Administration. Dr. Mahoney is Special Assistant to the Chairman of the Manpower Task Force of the Principal Working Group on Health of the Emergency Mobilization Preparedness Board.

Tearsheet requests to Dr. Mahoney, National Disaster Medical System, Rm 18-74, Parklawn Bldg., 5600 Fishers Lane, Rockville, MD 20857.

Synopsis

The National Disaster Medical System (NDMS) is a partnership of private and public sectors to provide care to the victims of great disasters. The system is being developed as a voluntary cooperative effort of four major Federal agencies, State and local governments, and the American professional and hospital communities.

A medical response component will include 150 disaster medical assistance units capable of clearing or staging operations in a disaster. Each unit will comprise three 29-person teams containing physicians, nurses, medical technicians, and support personnel and will include a 16-person unit command and support element. An evacuation component will be founded on the military aeromedical evacuation system, augmented by civilian aircraft and other transportation resources. A hospital component will enroll 100,000 pre-committed beds in hospitals throughout the nation.

The system is designed to care for up to 100,000 casualties arising from a massive peacetime disaster or an overseas conventional military conflict.

The National Disaster Medical System will be implemented over a period of 3 to 5 years. The authors recommend that all parts of the American health care community join in support of the system.