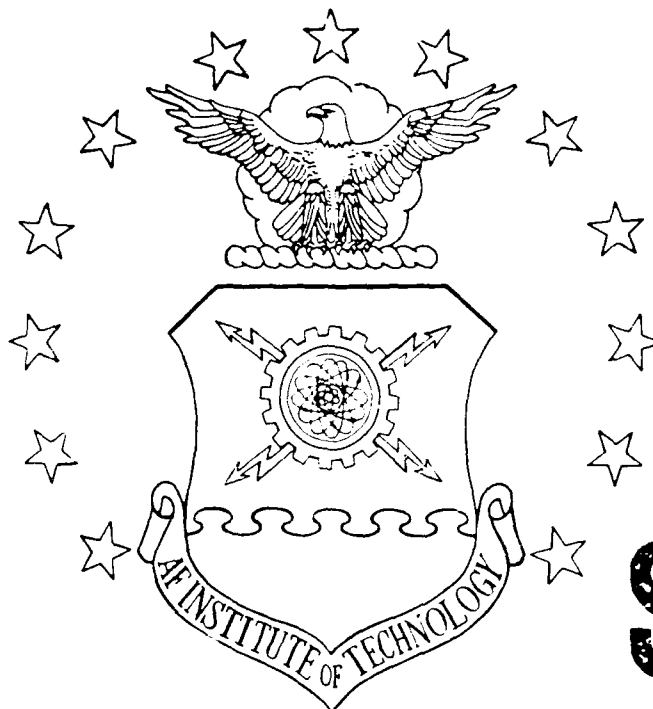


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THE ACQUIRED IMMUNODEFICIENCY SYNDROME
AN AIR FORCE READINESS ISSUE
THESIS

Barbara D. Stearns
Captain, USAF

AFIT/GLM/LSR/89S-58

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THE ACQUIRED IMMUNODEFICIENCY SYNDROME
AN AIR FORCE READINESS ISSUE

THESIS

Presented to the Faculty of the School of Systems and
Logistics of the Air Force Institute of Technology
Air University
In Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Logistics Management

Barbara D. Stearns
Captain, USAF

September 1989

Approved for public release; distribution unlimited

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Abstract

The purpose of this study was to examine present Air Force policy on HIV infection and determine its adequacy for the future based on the predicted course of the AIDS epidemic. Information concerning AIDS and HIV infection for both the general population as well as the Air Force population was reviewed and presented to provide an assessment of the AIDS epidemic in the United States and in the Air Force.

Based on the examination of Air Force policy on HIV infection and the predicted course of the AIDS epidemic, this study did not conclusively determine the adequacy of the policy for the future. At present, Air Force policy on HIV infection appears to be suitable for the reason that the number of HIV infected individuals in the Air Force is insignificant. Nonetheless, because of the great uncertainty involved with the AIDS epidemic there is justification for concern regarding how it will affect the Air Force in the future.

In that respect, this study did reveal that there are certain variables considered crucial to evaluating the impact of the AIDS epidemic in the Air Force. The crucial variables are: the actual number of HIV infected

individuals; predictions of the number to become infected;
the increasing rate of heterosexual transmission for HIV
infection; and lastly, the time frame for seropositive
conversion.

THE ACQUIRED IMMUNODEFICIENCY SYNDROME AN AIR FORCE READINESS ISSUE

1. Introduction and Methodology

General Issue

An infectious and as yet incurable disease, the Acquired Immunodeficiency Syndrome (AIDS) has struck the general population frequently enough to officially qualify as an epidemic (Ember, 1987:50). Members of the United States Air Force are not excluded from this deadly worldwide epidemic. In February 1986, a mandatory screening program to test all active duty and reserve component personnel for the human immunodeficiency virus (HIV) began. The human immunodeficiency virus is the transmittable agent that causes the Acquired Immunodeficiency Syndrome. As of September 1, 1987, 3035 military personnel of the United States services have tested positive for human immunodeficiency virus antibodies (Ember, 1987:56). According to the Memorandum For Air Force Surgeon General, dated November 23, 1988, "The surveillance of military personnel for HIV infection is being accomplished for Force readiness reasons" (Appendix:B.4.). Present Air Force policy permits active duty HIV infected individuals who do not exhibit any signs of clinical illness or other indications of immunologic or neurologic impairment to

remain on active duty at stateside locations. Justification for COB-only assignments for HIV infected individuals is based on the high degree of importance the Air Force has placed on their continued medical evaluation. Based on the aforementioned policy, what will be the effects of the AIDS epidemic in the Air Force?

Specific Problem

Because of Air Force recruitment policies, individuals who test HIV positive as well as those who fall into the HIV high risk groups, defined here as homosexual and bisexual men, intravenous drug users, and hemophiliacs, are denied enlistment or commission (Department of the Air Force, 1988:1-14b). These policies do not, however prevent those already serving from becoming infected. Nor do they prevent individuals recently infected from entering the Air Force because the test used to determine if an individual is HIV infected may not detect the agent for up to 14 weeks after initial infection (Lopez, 1988:189).

Current research reveals the incubation period for the Acquired Immunodeficiency Syndrome to be 10 years $\pm$ 4 to 5 years, dependent on how an individual contracts the disease (Lopez, 1988:193). During the incubation period those individuals who have tested positive for the HIV antibody are medically evaluated to determine fitness for active duty. Even if deemed medically fit, Air Force HIV policy

states that these individuals will be restricted from contingency or battlefield situations in an effort to protect the blood supply (Appendix:E.1.). Because of the nature of combat operations, the flow of supplies into the combat theater could be interrupted. Specifically, medical units in a combat theater charged with caring for the wounded may not have access to whole blood, therefore individuals in the field who are not wounded become the blood supply. In light of the epidemiological data available and the likelihood of the number of HIV infected individuals to increase, does present Air Force policy adequately account for the future ramifications of the epidemic?

Investigative Questions

To determine if present Air Force policy is adequate for the future, the following investigative questions guided the research.

1. What are the objectives of Air Force policy for HIV infected personnel?
2. What is the Office of Primary Responsibility for the policy?
3. Is this the appropriate office?
4. What developments have been made in AIDS research since present Air Force policy was conceived?
5. How do most Air Force personnel contract AIDS?

6. How will the disease progress and affect performance?
7. Are infected individuals more susceptible to illness during the time between infection and seropositive conversion?
8. Is this policy appropriate during wartime as well as peacetime?
 - a. Do personnel requirements differ in wartime?
How much? What AFSCs?
 - b. What is the ratio of fully qualified airmen versus new trainees during combat?
9. Are Army and Navy AIDS policies similar to Air Force policy?

Scope

This thesis does not address any of the implications brought about by the Acquired Immunodeficiency Syndrome epidemic. Specifically, the moral and ethical issues raised by such an epidemic are far too complex to be covered properly, given the time restriction on the study. In order to restrict the research to issues relevant to Force readiness, many issues were not examined. Monetary costs incurred by the government for medical care, temporary disability, or the medical retirements of HIV infected individuals did not seem relevant. As with any life threatening disease, there are psychological implications for HIV infected individuals as well as their superiors,

subordinates, peers, and family members. These psychological implications were not examined in this thesis simply because the subject would be better suited to someone experienced in this area.

This study did however, seek to reveal what, if any, inconsistencies exist between Force readiness objectives and present Air Force policy on HIV.

Methodology

In order to determine if the Air Force's present policy on HIV infection adequately accounts for future implications of the AIDS epidemic, an historical analysis was conducted. This study was best suited to an historical analysis because the researcher must understand what exactly the present situation is in an effort to determine the effect of the AIDS epidemic.

"Historical research is the systematic and objective location, evaluation, and synthesis of evidence in order to establish facts and draw conclusions concerning past events" (Borg and Gall, 1971:260). Locating the needed information for this thesis required the extensive review of many sources because the research data for an historical analysis is collected by means of reviewing the literature (Borg and Gall, 1971:263).

Medical information about the Acquired Immunodeficiency Syndrome and HIV infection is overwhelming. So much

research is underway that new findings are published daily. In order to stay abreast of the most current information the Morbidity and Mortality Weekly Report, published by the Centers for Disease Control was my major source. Also, I established a contact at the HIV/AIDS Division of the Centers for Disease Control, Dr. Scott Holmberg. Dr. Holmberg provided HIV/AIDS raw data on the general population as well as medical expertise in the field of HIV/AIDS. Many medical and professional journals as well as recently published books were also valuable sources.

Finding information about AIDS and HIV infection as it relates to the Air Force, or even the military as a whole, was very difficult to say the least. The priority in the world today is to solve the medical mystery, therefore other forms of AIDS research are scarce. Raw data and expertise concerning Air Force HIV policy was obtained by personal correspondence with LtCol Ronald Warner, the Chief of the Disease Surveillance Section at Brooks AFB, Texas.

The major source document which most of this research is based on is the Air Force's Policy on Identification, Surveillance, and Administration of Personnel Infected With Human Immunodeficiency Virus (HIV), established by the Air Force Surgeon General. This document has been included as an appendix to this thesis.

Lastly, a Defense Technical Information Center (DTIC) search provided limited, but useful source materials.

The extensive review of these sources in conjunction with personal correspondence with experts provided me with a wealth of knowledge concerning the medical aspects of HIV infection as well as policy development and analysis. Therefore, the method for which the conclusions of this thesis were drawn is based on a combination of knowledge concerning the facts and a critical evaluation their impact.

Overview

To set the scene for this entire thesis Chapter II provides a brief review of present knowledge about AIDS and HIV infection. Specifically, it describes the evolution of AIDS, what causes AIDS, how it is transmitted, the course of the disease, and current statistics from the United States population. Lastly, a look at what the future holds for AIDS is presented.

Chapter III supports the basis for this thesis by establishing that the Air Force is affected by the AIDS epidemic. This chapter covers the history of AIDS in the Air Force, how many are infected, how they contracted it, and how the disease will affect their performance.

Chapter IV is a discussion of the factors the Air Force might possibly consider when making policy decisions concerning active duty members who are HIV infected.

Finally, Chapter V outlines the findings of this

research, summarizes the conclusions, and provides recommendations for further research.

II. Background

In order to establish a common frame of reference for this thesis, a brief review of the Acquired Immunodeficiency Syndrome epidemic is presented. Research for this background was conducted at the Wright State University library, the USAF Wright-Patterson Medical Center Library, the School of Systems and Logistics Library, and correspondence with Scott D. Holmberg of the AIDS Program at the Centers for Disease Control. The organization of the review is as follows: the origin of AIDS, recognition of AIDS in the United States, the cause of AIDS, transmission of AIDS, epidemiological data, disease progression, and lastly, the future of AIDS.

Origin of AIDS

The origin of the Acquired Immunodeficiency Syndrome is believed to have been central Africa. Based on the testing of serum samples stored in central Africa dating back to the early 1970s, results have shown a high frequency of HIV infection (Farthing, 1986:14). Central Africa continues to be the region of the world most affected by the epidemic (Imperato, 1987:252). In Kigali, Rwanda, and Kinshasa, Zaire alone, the 1985 estimates for annual incidence of AIDS among adults was 500-1000 cases per one million residents (Quinn, 1987:286). Africa is also the only region with an

equal AIDS incidence sex distribution, the male to female ratio of AIDS cases is 1:1, whereas in the United States the ratio is 13:1 (Quinn, 1987:286).

AIDS in the United States

As of March 21, 1988, 136 countries throughout the world had collectively reported 84,256 cases of AIDS to the Global Programme on AIDS of the World Health Organization. The United States accounts for the majority, over 64% of the cases (Centers for Disease Control, 1988b:286). The reason the United States accounts for the majority of the cases (given the high AIDS incidence rate in central Africa) is explained by the in-place systems and procedures of our reporting system.

AIDS was not officially recognized in the United States until 1981, though testing of serum samples provides evidence for its presence as early as 1979. The Centers for Disease Control suspected "a new disease entity" based on the occurrence of two medical disorders that would not normally appear in the population affected (Batchelor, 1984:853; Batchelor, 1988:1279; Daniels, 1986:1-3). The disorders, *Pneumocystis carinii* pneumonia and Kaposi's sarcoma seemed to be only "markers of an underlying profound defect in the immune system" of affected individuals (Daniels, 1986:2). The Centers for Disease Control established a Task Force to determine the spread and

identify those at risk of being infected (Daniels, 1986:2). Prior to the discovery of HIV as the causative agent, AIDS was defined as a disease that suppresses natural immunity, consequently, an individual is left defenseless against various opportunistic infections that would otherwise not threaten healthy individuals (Batchelor, 1988:1280; Daniels, 1986:2). This definition is still the basic postulate, but revisions to provide a more definitive explanation appear to be ongoing based on new research.

Cause of AIDS

In 1983 the "causative virus" of AIDS was discovered. Three research centers, independently, but at about the same time, determined what the infectious agent was. Each research center gave the agent a different name. Today, by international agreement, the virus is known by the generic term HIV, human immunodeficiency virus (Batchelor, 1984:855; Imperato, 1987:251). "HIV is a persistent retroviral infection" (Lopez, 1988:190). The term persistent means that once an individual has tested positive for HIV infection, with or without symptoms of AIDS, that individual will continue to harbor the infection. The term retroviral refers to the genetic makeup and specific enzyme of the virus that allows it to replicate itself.

This means that its genetic material is not deoxyribonucleic acid (DNA) but ribonucleic acid (RNA). We typically think of RNA in terms of its "messenger" role in the replication of cells. That is, when the double-helix DNA molecule splits apart in preparation for replication, "messenger RNA" functions to gather the appropriate amino acids in the appropriate sequence from within the body and deliver them to each half of the DNA helix. In the case of HIV, however, the RNA is a single, long genetic molecule that can integrate itself into the DNA of the T-4 cell. (Batchelor, 1988:855)

The T-4 "helper/inducer" cell is one type of white blood cell. It directs the body's immune system, specifically T-4 cells tell B-cells to either fight invading germs or retreat. When T-4 cells are infected by HIV, the cells die, reducing the body's ability to effectively fight infection (Batchelor, 1988:854). As more T-4 cells are destroyed, the body is more susceptible to opportunistic infections (Crandell, 1987:42).

Transmission of AIDS

Transmission of the disease occurs when the agent, HIV, is transferred from an infected source to an uninfected source. There are several categorized high risk groups more susceptible to HIV infection than others based on their behavior, occupation, or in the case of infants, the circumstances under which they were carried or born. The modes of transmission relate specifically to how an individual was exposed or came in contact with the virus.

HIV is transmitted primarily in three ways: sexually, through blood-borne routes (usually through exposure to contaminated blood or needles), and, rarely, perinatally. (Lopez, 1988:180)

Collection of epidemiological data for the AIDS epidemic in the United States is primarily done by the Centers for Disease Control. As of March 14, 1988, 56,212 cases of CDC defined AIDS had been reported. Of that number, more than 31,400 individuals have died. In the last 12 months alone, 23,200 cases were reported, an increase of 58% over the previous year (Centers for Disease Control, 1988a:223). Of the 23,200 new cases reported, 68% were among homosexual and bisexual men, 19% were among heterosexual men and women with a history of intravenous drug abuse, and 4% were among heterosexual partners of persons infected or at increased risk for contracting AIDS (Centers for Disease Control, 1988a:224). Also in the last category are persons without other identified risk who were born in countries where AIDS is primarily transmitted heterosexually (Centers for Disease Control, 1988a:224). For children under 13 years of age, there were 416 cases reported (Centers for Disease Control, 1988a:224).

Disease Progression

Once an individual becomes HIV infected certain clinical factors can be detected and measured, but to date it is not possible to determine if, when, and how many individuals will actually contract AIDS (Lopez, 1988:189). Certain

factors are considered contributory to sero-positive conversion. Specifically, drug abuse, repeated exposure to HIV, other concurrent viral infections, and poor nutrition appear to be the promoting factors (Kaplan, Johnson, Bailey, and Simon, 1987:142). It is also known from past studies that the immune function can be influenced by behavior therefore, psychosocial and behavioral variables are considered potential factors (Kiecolt-Glaser and Glaser, 1988:892).

In medical terms, the immune function is measured by the number and functional ability of subgroups of lymphocytes (white blood cells), but because lymphocyte subgroups perform specialized functions, a single immunological test can not determine the competence of an individual's immune system. Also, immunological components are interdependent, therefore, an adverse reaction in one subpopulation of lymphocytes can cause other lymphocytes to react in a like manner, this is known as the "cascading effect" (Kiecolt-Glaser and Glaser, 1988:892).

As mentioned previously, an individual's immune function can be influenced by psychological variables. At present, several studies are examining the implications of the psychological aftermath induced by the shock of one being informed of HIV infection. Accordingly, the state of an individual's immune system at HIV infection, as well as, immediately following notification of infection, appears to

hold the key to determining how rapidly the disease will progress.

Without the knowledge and ability to determine an individual's global state of immunity at confirmation of HIV positive status and subsequent sero-positive conversion, the questions if, when, and how many people will actually contract AIDS, will go unanswered. Preliminary statistics from the Centers for Disease Control, AIDS Program, will at least provide a basis for ongoing research.

Forecast

Determining who will contract AIDS is of utmost importance, but according to the CDC, "accurate estimates of the prevalence and rate of spread of HIV-1 [SIC] infection in the entire U.S. population are not possible at this time" (Centers for Disease Control, 1988a:224). Estimates can not be obtained for the entire U.S. population because only certain subgroups must submit to mandatory testing. Specifically, the subgroups available are blood donors, applicants for military service, and active duty military personnel (Centers for Disease Control, 1988a:224). In the active duty subgroup, specifically U.S. Army personnel who have been tested more than once, 7.7 per 10,000 per year have become infected since their first test (Centers for Disease Control, 1988a:224).

In general, males have higher prevalence rates than females, black and Hispanic minorities have higher prevalence rates than other minorities and whites, and persons between 20 and 45 years of age have higher prevalence rates than persons in other age groups. (Centers for Disease Control, 1988a:224)

The future of the Acquired Immunodeficiency Syndrome epidemic is uncertain. The Centers for Disease Control estimates that there are 1 million to 1.5 million persons in the United States presently infected with HIV. It is not possible to accurately determine how many of the already infected individuals will actually develop AIDS and what the true incubation period will be until the peak of the epidemic is observed. According to experts at the Centers for Disease Control:

The AIDS epidemic is unique in that it was identified and tracked shortly after it was recognized, so that we have not yet observed a peak in AIDS incidence and therefore cannot directly calculate mean incubation periods. (Lopez, 1988:189)

The peak of the disease is defined as the point in time when the number of new AIDS cases begins to decline and continues to decrease or level off. Also, because of the time lag in reporting AIDS cases to the Centers for Disease Control, the experts feel that the peak of the epidemic will not be recognized until 12 months after it has occurred.

Mathematical models used to calculate the mean incubation period are unable to overcome these problems, therefore without knowledge of the distribution of incubation periods, researchers can not determine what proportion of HIV infected individuals will seroconvert.

Based on statistical analysis, it appears to be certain that the direction of the AIDS epidemic will be determined by intravenous drug users (Lopez, 1988:183). The results of several studies of homosexual men have shown that the rate of HIV infection among homosexual males has declined (Lang et al., 1987:326; Polk et al., 1987:61; Winkelstein et al., 1987:321). The decrease in the homosexual infection rate is probably due to the information provided to educate this population about their risk.

This decline is attributed to changed sexual practices by homosexual men in response to the epidemic: fewer sexual partners, fewer anonymous partners, and safer sexual practices. (Lopez, 1988:181)

The HIV infection rate among intravenous drug users is at the opposite end of the spectrum. Intravenous drug users, even those in drug addiction treatment programs, continue to become infected at an alarming rate (Lopez, 1988:183). This high risk group is seen as the link to the heterosexual population (Drucker, 1987:256; Imperato, 1987:252; Lopez, 1988:183).

The degree and rapidity of spread outside of this center will be directly related to the frequency of sexual contacts and the number of sexual partners, variables likely to be affected by public health education activities now underway. (Imperato, 1987:252)

Until all information on AIDS and HIV infection has been collected, predictions will remain uncertain.

Two hundred and twenty-seven leading biomedical researchers and medical scientists were surveyed by Lopez

Harris and Associates to determine their thoughts on the future of AIDS (Imperato, 1987:254). The results of the survey were: one million Americans will develop AIDS by the year 2000 and 19% believe a cure for AIDS will be found by the end of the century. Forty-six percent of a smaller subset of specialists that dealt specifically with prevention and treatment predicted a safe and effective vaccine to be available between 1990 and 1999 and 28% of the same subset foresee a cure by the end of the century (Imperato, 1987:254).

At present the Centers for Disease Control estimates that there are 1 to 1.5 million persons in the United States infected with HIV. Even though research is incomplete, the AIDS epidemic has undoubtedly affected the Air Force. Because the Air Force population is not excluded from this epidemic, the number of HIV infected individuals and rate of infection in the Air Force could have an impact on our capability to perform our required mission. Therefore, it is imperative new findings be examined to determine if the Air Force's present HIV policy is adequate for the future or if changes are necessary.

III. AIDS in the Air Force

Air Force Policy on HIV Infection

General guidance for HIV surveillance of the Air Force population and administration of HIV infected individuals in the Air Force is provided in an Air Force policy letter, Memorandum for Air Force Surgeon General, policy on Identification, Surveillance, and Administration of Personnel Infected With Human Immunodeficiency Virus (HIV), dated November 23, 1988. This policy includes guidance for both reservists and guardsmen as well as active duty members. The content of the policy is very broad but most importantly, directive in nature. Because the policy is so broad some areas are subject to interpretation. Therefore those charged with carrying out this policy have some responsibility for determining within the limits established by the policy, appropriate action for the Air Force as well as disposition of infected individuals.

The Acting Assistant Secretary of the Air Force for Readiness Support, Eric Thorson, has directed that Air Force policy on HIV infection be reviewed annually and updated if necessary to reflect current developments in research and technology. This thesis is concerned with how the policy affects Force readiness, therefore an examination of the evolution and specific guidance related to Force readiness for AIDS/HIV infection in the Air Force was conducted. A

copy of Air Force policy on HIV infection has been provided as an appendix for the convenience the reader.

History of AIDS in the Air Force

AIDS was first recognized in the Air Force in 1983 when an ophthalmologist referred a patient to Wilford Hall Medical Center at Lackland AFB, Texas, because the patient exhibited an immune system deficiency (Thomas, 1989:15). Wilford Hall Medical Center was the most logical choice as a referral site because the doctors there had an existing pool of knowledge concerning the human immune system previously developed from their work in the bone marrow and kidney transplant programs. Wilford Hall stands today as the Air Force's one and only AIDS research facility. Every Air Force member who tests positive for the HIV antibody is sent to Wilford Hall to have more tests, counseling, and stage of infection determined (Thomas, 1989:14). Also, virtually all, 99%, of HIV infected individuals choose to participate in the AIDS research program at Wilford Hall providing a wealth of knowledge to the worldwide community on AIDS.

Once serologic evidence exists an individual who is HIV infected must have a medical evaluation to determine fitness for continued service (Appendix:C.1.). The medical evaluation is used to classify the HIV infected individual into one of six stages of infection. Using the Walter Reed classification system developed at the Walter Reed Army Institute of Research, individuals are evaluated based on

specific medical criteria (Crandell, 1987:42). Table 1 lists the six stages and criteria.

Table 1

Walter Reed Classification System

STAGE	HTLV-III Antibody	Chronic Lymphadenopathy	T Helper Cells/mm ³	DHS	Thrush	O.I.
WR 1	+	-	>400	NI	-	-
WR 2	+	+	>400	NI	-	-
WR 3	+	+/-	<400	NI	-	-
WR 4	+	+/-	<400	P	-	-
WR 5	+	+/-	<400	P/C	+/-	-
WR 6	+	+/-	<400	P/C	+/-	+

HTLV-III ANTIBODY is defined as the presence of antibody to the structural proteins of HTLV-III as determined by Western Blot techniques. HTLV-III virus isolation also fulfills criteria to document infection.

CHRONIC LYMPHADENOPATHY is defined as two or more extrainguinal sites with lymph nodes greater or equal to 1 cm in diameter persistent for more than 3 months.

T HELPER CELLS quantitatively determined and expressed as cells/mm³. Quantitative depletion must be persistent for at least 3 months for Stage 3 classification.

DELAYED HYPERSENSITIVITY (DHS) is defined as within normal limits (WNL) when an intact cutaneous response to at least two of the following 4 test antigens is observed: tetanus, trichophyton, mumps and candida. A partial (P) response is defined as an intact cutaneous response to only one of the above 4 antigens. The letter C represents complete cutaneous anergy to all 4 test antigens.

THRUSH is defined as clinical oral candidiasis including a positive KOH preparation.

OPPORTUNISTIC INFECTION (O.I.) is marked as positive when infections such as pneumocystis carinii pneumonia, Central Nervous System (CNS) or disseminated toxoplasmosis, chronic cryptosporidiosis, candida esophagitis, disseminated histoplasmosis, CNS or disseminated cryptococcosis, disseminated atypical mycobacterial disease, extrapulmonary tuberculosis, disseminated nocardiosis, disseminated CMV, or chronic mucocutaneous herpes simplex occur.

(Department of the Air Force, 1986; U.S. Army Physical Disability Agency, 1987).

The testing program is required for every member on active duty, reservists, and guardsmen at a minimum of biennially. Blood is drawn at his or her base of assignment and sent to a contracted laboratory for testing. The laboratories use one of the two available Federal Drug Administration (FDA) approved blood tests to screen for evidence of HIV infection. The test, the Enzyme-Linked Immunosorbent Assay (ELISA), is the least costly, but also the least reliable, therefore the second test, the Western Blot (WB) is administered to an individual upon arrival to Wilford Hall Medical Center to confirm the previous positive result. If the result of the Western Blot test confirms HIV infection, then the individual undergoes a series of medical tests that are designed to evaluate his or her physical state based on the criteria (see table 1). For instance, an individual upon examination is determined to have chronic lymphadenopathy (positive indication for more than 3 months), the quantitative measure of his T Helper Cells per mm^3 is less than 400 (persistent for more than 3 months), delayed hypersensitivity (DHS) is normal, and there are no indications of thrush or opportunistic infection. If the above described condition existed, this individual would be considered at WR stage 3.

The six stages of HIV infection are medically testable and provide medical personnel throughout the Air Force a common definition for the extent of infection. The purpose

of categorizing individuals into one of the six stages is to determine, based on current medical knowledge, if the individual is medically fit to remain on active duty. Air Force policy on HIV infection states that:

Individuals with serologic evidence of HIV infection, who show no evidence of clinical illness or other indication of immunologic or neurologic impairment related to HIV infection, shall not be separated solely on the basis of serologic evidence of HIV infection. (Appendix:C.1.)

As mentioned previously in Chapter 1, this same policy restrict infected individuals to stateside locations and nondeployable units.

HIV Infected Personnel in the Air Force

The Disease Surveillance Section at Brooks AFB, Texas, maintains and reports all Air Force statistics on HIV infection. At the end of the first phase of Air Force total-force testing, September 30, 1988, 582 individuals on active duty were found HIV positive of the 609,664 tested, for a rate of 0.95 per 1000. Of the 71,641 Air Force Reserve personnel tested, 115 were HIV positive for a rate of 1.61 per 1000. Ninety-one out of 103,634 Air National Guard individuals tested positive for the HIV infection for a rate of 0.88 per 1000. Also included in the total-force screening program are statistics on accessions. For the period October 1, 1985 to September 30, 1988, the number of accessions tested was 104,791. Fifty-three individuals tested positive for a rate of 0.51 per 1000. According to

LtCol Ronald Warner, Chief, Disease Surveillance Section, every member in the Air Force has been tested at least once (Thomas, 1989:15; Warner, 1989). The second phase of total-force screening began October 1, 1988. Individuals testing positive previously were excluded from the second screening. Seven months into the second screening period, 53 out of 188,437 active duty members have tested positive, for a rate of 0.28 per 1000. Air Force Reserve and Air National Guard personnel found infected were 7 out of 16,770 for a rate of 0.42 and 5 out 23,300 for a rate of 0.21 per 1000, respectively. Only one individual out of 5,321 accessions has tested positive for this same period. As of April 30, 1989, a total of 783 active duty Air Force members have tested positive for the HIV antibody. Of the 783 individuals who were confirmed HIV positive while on active duty, 148 were tested prior to the initial force screening and therefore are not included in the force screening statistics. Table 2 shows the division of HIV infected individuals by stage and disposition.

Table 2

AIDS data for Air Force Members

<u>STAGE</u>	<u>TOTAL</u>	<u>DEAD</u>	<u>SEP/RET</u>	<u>TDRL</u>	<u>RTD</u>	<u>UNKN</u>
WR 1	335	1	80	24	230	0
WR 2	251	2	39	64	145	1
WR 3	53	2	1	48	2	0
WR 4	26	0	3	23	0	0
WR 5	32	3	1	28	0	0
WR 6	82	40	2	40	0	0
UNCLASS	2	0	2	0	0	0
UNKN	2	1	1	0	0	0
TOTAL	783	49	129	227	377	1

TDRL-Temporary disability retirement

RTD-Continuing active duty

Presently, 377 Air Force members who are HIV infected remain on active duty. As can be seen from table 2, 49 have died, 129 have either separated or retired, 227 are on temporary disability retirement, and the status of one is presently unknown (Wolfe, 1989:2).

Sources of Infection

Because of the ramifications of the disease, HIV infected individuals are hesitant, to say the least, about revealing high risk behavior that may have led to their infection. At Wilford Hall, one-to-one patient interviews are conducted for the purpose of uncovering such behavior. Patients are informed of their rights to decline answering these sensitive questions and most choose to do just that. At the completion of a patient's initial evaluation at Wilford Hall, the HIV infected individual is given a mail-in

survey. The survey is composed of the same sensitive questions that were asked in the one-to-one interview. It is the hope of the researchers at Wilford Hall that the patient is assured of anonymity and confidentiality by means of the survey and therefore will respond. The patients are even asked to mail the survey prior to leaving the San Antonio area, as to prevent the possibility that it may be traced to the base they are returning to. Even with these safeguards and assurances, the response rate is only approximately 20%. Of the 20% that respond, approximately 80% reveal homosexual or bisexual behavior and almost 12% admit to repeated contact with prostitutes (Warner, 1989). The remaining 8% either decline answering the question or state that they have no known risk factors (Warner, 1989). Because of the low response rate, it is difficult to infer that these results are indicative of the rest of the Air Force HIV infected population.

Personnel Performance Factors

As alluded to throughout this paper, there are many unknowns about HIV infection and disease progression. It is clear though, that guidelines are needed to provide decision makers the necessary information to determine if an HIV infected individual is capable of performing on the job. One of the unknowns, which is of critical importance to the Air Force, is whether HIV infection will affect a person's

ability to perform. Ascertaining the physical and mental state of these HIV infected individuals is extremely important to determine when they should be released from active duty and placed in another status for the benefit of the Air Force and the individual.

As mentioned earlier, infected individuals are categorized into one of six stages of the Walter Reed Classification System. At one time, this classification system was used by the Air Force as the basis for discharge. If individuals tested HIV antibody positive and showed no clinical signs of AIDS (stages 1-4) they were allowed to remain on active duty. Once clinical symptoms developed (stages 5 and 6), medical discharge was warranted. However now, the classification system is no longer used as the basis for discharge, but rather, the clinical symptoms are used in conjunction with a psychological evaluation to determine an individual's fitness for active duty (Crandell, 1987:42). At initial confirmation of HIV infection, the Air Force convenes a Medical Evaluation Board including a Physical Evaluation Board (Appendix:C.1.). Based on the above mentioned procedure, these boards examine the immunologic and neurologic evidence (or lack thereof) and determine if individuals are eligible to remain on active duty.

Even if considered fit for duty, any HIV infected individual can reject the board's recommendation and elect

to be released from active duty. Of the 356 individuals in the separated/retired and temporary disability retirement list (TDRL) categories in table 2, approximately 75% requested release from active duty. The other 25% were released on the board's recommendations because of physical or psychological impairment. According to various sources who manage the programs in the Air Force for HIV infection, the individuals who requested release did so because of the embarrassment of being HIV infected or because they perceived overt as well as covert forms of discrimination against them (Warner, 1989).

Those HIV infected individuals that chose and are allowed to remain on active duty in the Air Force are evaluated at least once a year at Wilford Hall Medical Center to determine how the disease is progressing (Appendix:B.6. and Thomas, 1989:14). At present, research is on-going to determine the effects of HIV infection on individual performance. Ninety-nine percent of Air Force active duty HIV infected individuals volunteer to participate in the AIDS research program at Wilford Hall. Of the more than 300 HIV infected individuals reevaluated at Wilford Hall thus far, 15 percent have shown signs of the disease progressing to a more severe level (Thomas, 1989:15). Until the results of more studies of this nature are available, determination of an HIV infected individual's performance is limited to what is presently known. Based on

current research, there is no evidence to suggest an HIV infected individual, prior to seroconversion, is less capable of performing on the job than an uninfected individual. The exception of course is when an HIV infected individual suffers from psychological impairment related to HIV infection. Hopefully, research of this type will provide decision makers with sound information that will lead to more definitive answers as to how HIV infected individuals will perform.

IV. Considerations for Policy Decisions

Purpose of Air Force Policy on HIV Infection

What is the objective of Air Force policy on HIV infection? Is it to completely eradicate the disease in the Air Force through screening and separation? As one reads the policy on HIV infection it does not appear that eradication of the disease is the intent of the Air Force at all but instead, it is to accommodate those already infected and to prevent enlistment or commissioning of HIV infected individuals from the general population. No objective statement as to the purpose is found in the Air Force's written policy. However, it does state that, "surveillance of military personnel for HIV infection is being accomplished for Force readiness reasons" (Appendix:B.4.). No further explanation of "Force readiness" as related to AIDS/HIV infection is mentioned or referenced in the policy. One is left to assume by reason of default that the Air Force has determined that force readiness might be compromised depending on how widespread the epidemic becomes. The policy also states that, "all active duty and reserve component military personnel shall be screened for serological evidence of HIV infection every two years" (Appendix:B.3.). The Air Force clearly assumes that the best way to deal with the problem is by testing and identifying those infected. Guidance for the disposition of

those infected was established and is updated based on the results of screening the force.

Because the policy is vague in these areas, it can be surmised from these statements that the Air Force considers the AIDS epidemic a potentially devastating threat to the strength of the Air Force. Based on the previous assumption, policy makers must be concerned with how their decisions will affect combat strength in any defense posture, during peace, limited conflict, major conflict, or even global war. With this in mind, will it be necessary to pursue and perhaps develop a different policy that will account for each of these situations.

Strategy and Policy

Manpower and personnel needs of the Air Force are based on national strategy. Depending on how widespread the epidemic is in the Air Force and the general population, the Air Force may have to deal with the possibility of not being able to meet manpower and personnel requirements. At present, the number of HIV infected individuals is insignificant, therefore future manpower and personnel needs do not appear to be an issue in policy decisions. But, if the numbers of HIV infected individuals in the Air Force as well as the general population were to increase drastically, the Air Force may find it necessary to increase the rate of accessions. For example, for each individual needed, adding

1.1 individuals to the force might be necessary to meet the requirements.

The most recent report to the Domestic Policy Council on the prevalence and rate of spread of HIV and AIDS states that the actual number of AIDS cases in the general population is higher than that previously predicted. The predictions for 1986 and 1987 were 15,800 and 23,000 cases, as compared to the actual cases, 17,100 and 25,200, respectively (Centers for Disease Control, 1988c:551). Another notable finding was an increase in heterosexual transmission cases to 3.6% of all cases for the year following September 1987 from 2.6% for the year preceding September 1987 (Centers for Disease Control, 1988c:551). This is significant to the Air Force, since it is assumed, because of recruiting policy, that the majority of Air Force members become infected by means of heterosexual transmission (Department of the Air Force, 1988).

Though these are only predictions and the findings are from a limited time period, they can help to assess today's policy and provide possible considerations for future policy.

Present Air Force policy on HIV infection addresses not only infected individuals on active duty, but also, recruits for enlistment, candidates for commissioning, reserve, and national guard personnel. Each group, recruits, active duty members, reservists, and guardsmen is managed differently.

In an effort to analyze policy affects, the guidance and impending results for each group will be examined.

Accessions

Since personnel for the Air Force are drawn from the general population, it would be appropriate to examine how policy affects military applicants. The Air Force and Air Reserve Component are denying enlistment or commission to individuals with serologic evidence of HIV infection.

The rationale for this policy is: The condition existed prior to appointment or enlistment; the Air Force avoids potential medical costs; the possibility that the individual will not complete his or her service commitment; clinical evidence indicates that individuals with serologic evidence of HIV infection may suffer adverse and potentially life-threatening reactions to some live virus immunizations administered at basic training; an individual with serologic evidence of HIV infection is not able to participate in battlefield blood donor activities or other blood donation programs; and presently, there is no way to differentiate between individuals with serologic evidence of HIV infection who will progress to clinical disease and those individuals who will remain healthy. (Thorson, 1988:A.1.)

This policy is enforced by testing all applicants for enlistment and candidates for commissioning during the initial entry physical or in the preappointment program.

Because the epidemic is so widespread and applicant screening is mandatory, the critical question is, will this policy reduce the number of applicants? According to the Centers for Disease Control, a study conducted at six urban and suburban sentinel hospitals has revealed that the infection rate for military recruits thus far is three to

four times less than that for the patients admitted for reasons not associated with HIV infection (Centers for Disease Control, 1988c:552). The study concluded that the infection rate is higher for these hospital patients simply because they exhibit certain risk behaviors that would exclude them from military service (Centers for Disease Control, 1988c:552). Of course the pool of acceptable individuals for military service has decreased, but accession HIV testing shows this number to be insignificant. Since accession screening began in the Air Force, 110,112 applicants have been tested, of that number, 54 were HIV antibody positive for a rate of 0.49 per thousand (Wolfe, 1988 and 1989).

If our nation's strategy/defense posture were to change however, the number of applicants lost due to HIV infection could require the Air Force to adopt a different policy in situations calling for other than normal peace-time operation. In a Vietnam-type situation in which the draft is used to meet personnel requirements, individuals do not choose the military but are selected. Of course selection is predicated on a medical evaluation but the military will be screening all those individuals considered fit for service. As the study above suggests, the general population exhibits a higher HIV infection rate than those presently applying to enter the Air Force. Because the general population is the source of personnel in a draft

situation, it may be more difficult to meet personnel requirements. In a situation of this nature, the policy may have to be modified in order to meet the needs.

AIDS and the Total Force Concept

Force readiness in the Air Force is based on the total force concept. Air Force active duty and the Air Reserve Forces make up the total force. The Air Reserve Force is comprised of the Air National Guard, Selected Reserve, and Standby Reserve components. The Ready Reserve, a combination of Air National Guard and Selected Reserve, is essential to force readiness. Fifty percent of the Air Force's Military Airlift Command (MAC) combat-ready aircrews, 40% of its strategic airlift maintenance force, 47% of the aerial port force, almost 75% of the MAC medical crews, half of the AC-130 gunship crews, and nearly 25% of all C-130 tactical airlift crews are provided by the Selected Reserve (Air Force Reserve, 1989:120). The National Guard provides 85% of the fighter-interceptor force, half of the reconnaissance force, 59% of the tactical air support, 34% of tactical airlift, one-quarter of the tactical fighters, 18% of the air refueling capability, 17% of rescue and recovery capability, and 5% of the strategic airlift capability (Air National Guard, 1989:122). The 1988 total war requirement for Air Force personnel was 829,129.

Of that total, Air Reserve Forces constituted 23% of our fighting force (Deputy Chief of Staff, 1988).

The successful integration of each component when the situation dictates will to a large extent determine how effective the Air Force fighting capability will be. HIV surveillance for each of these components is managed separately, using guidance from the Air Force. The Disease Surveillance Section at Brooks AFB, Texas maintains statistics for each of these segments of the Air Force population. As can be seen from table 3, the Air Force Reserve appears to be the most affected by the AIDS epidemic.

Table 3
Total Force Screening Data

<u>Component</u>	<u>Number Tested</u>	<u>Number Positive</u>	<u>Infection Rate</u>
Active duty	798,101	635	0.80
Reserve	88,411	122	1.38
Guard	126,934	96	0.76

Infection rates are per thousand (Wolfe, 1988; 1989).

The figures in table 3 reflect the entire number tested since the beginning of the screening program on February 28, 1986 until April 30, 1988.

In the first phase of total force screening, 71,641 members of the Air Force Reserve were tested. One-hundred and fifteen were found to be HIV antibody positive, for a

very high rate of infection of 1.61 per 1000. Seven months into the second phase of screening, 16,770 have been tested. So far only seven have tested positive for a 0.42 per 1000 rate of infection. Until the second phase of testing is complete it would be premature to suggest that the Air Force take action based on this figure.

Since the Air Force Reserve is a substantial element of the total force, it would be appropriate to examine the actions of the Air Force dealing with those reservists who are HIV infected. Presently, Air Force policy prohibits reservists with serologic evidence of HIV infection from extended active duty (more than 30 days) except under conditions of mobilization (Appendix:C.2.). Furthermore, if reservists are HIV infected and are not on extended active duty, or in the case of the Air National Guard, not on extended full-time National Guard duty, then their unit commander can, on a case-by-case basis, determine if it would be in the best interest of the Reserve Forces to employ them in the Selected Reserve, otherwise they will be involuntarily transferred to the Standby Reserve. As with active duty members who are infected, reservists who are infected and allowed to remain in the Selected Reserve are restricted to assignment to nondeployable units and positions (Appendix:C.2.).

If the rate of infection for the Air Force Reserve remains high and in the event that the requirements exist to

activate reserve units for deployment, will this policy affect national defense? This question is problematic and can not be answered conclusively but, if not considered, the possible affects to force readiness could be crippling. Also, even though the rate of infection for the Air National Guard is not as high as that for the Selected Reserve, the same question is applicable for the Guard because of the criticality of their support to the total force concept. Moreover, all the factors being discussed are as critical to the active duty component as they are to the other components.

The critical factors here, as with the active duty force, are: one, how many individuals will become infected; two, how many nondeployable manpower slots are available; and three, will strategy/defense posture motivate policy change? Based on the predictions of how many will become infected, it might be necessary for policy makers to consider the possibility of limiting the number of nondeployable manpower slots available for HIV infected individuals. Also they, the policy makers, should conduct defense posture assessments to determine differing personnel needs.

The information for predictions is limited. The Air Force could base its predictions on statistics accumulated from the general population by the Centers for Disease Control, but drawing conclusions from these statistics would

infer that the Air Force population is similar to the general population, which is clearly not true (Imperato, 1987:252). On the other hand, the Air Force screening data already gathered came directly from the Air Force population and perhaps more closely approximates what the future holds. Granted that the screening data were compiled over a limited time period, the Air Force data in conjunction with facts known about HIV infection, heterosexual transmission, seropositive conversion, and AIDS itself, should provide the closest approximations obtainable.

Second, policy makers must decide how many nondeployable positions can be filled with individuals who are HIV infected as well as determine a course of action in the event the number of HIV infected individuals exceeds the allotted number of nondeployable slots. It is possible that nondeployable position openings could become limited. I think this is an issue that has moral as well as legal implications. Unit size and deployable status are established by regulation. In addition, nondeployable positions are limited by the mission of the unit considering the unit's personnel requirements and number of deployable positions.

If the number of HIV infected individuals on active duty were to increase markedly, it is possible that a unit, active duty Air Force or Air Reserve force, with a limited number of nondeployable slots might conceivably have to

staff all the nondeployable positions with HIV infected individuals.

Each position in a unit, whether deployable or nondeployable, is assigned an Air Force Specialty Code (AFSC). This code is used to identify the training and requirements necessary to perform that particular job. Individuals possessing such AFSCs must be matched with the appropriate position. Depending on the specialty requirements of each unit's nondeployable positions, the number of HIV infected individuals in the unit, and their AFSC, this may not be possible. If an HIV infected individual's AFSC does not match that of an available nondeployable position, what are the alternatives? This type of situation would put the Air Force in the predicament of deciding whether to retrain the infected member or transfer the individual to a unit where such a position is available. Even if this type of problem does not arise, all the nondeployable slots for a particular unit could be filled with HIV infected (and other medically nondeployable) individuals. The Air Force must then decide what action is appropriate in the event another individual from the unit becomes HIV infected? Will the Air Force give permanent change of station orders to the HIV infected individual to fill a nondeployable slot in another unit? Policy does not presently address such situations.

Another force readiness issue concerns overseas requirements. By maintaining HIV infected individuals on active duty and limiting their assignments to stateside nondeployable positions, the rest of the Air Force will have to fill the gaps that result. Thus some active duty members will have to serve more than the usual time at overseas locations. At a time when overseas imbalances already exist, more severe problems could arise. Policy does not address this point either.

Lastly, policy changes concerning HIV infected individuals presently serving on active duty might be necessary if our national strategy/defense posture were to change. As an example, if the Air Force were involved in a substantial conflict, the availability of experienced personnel would be critical. By restricting HIV infected members to nondeployable stateside positions, where a conflict is hopefully not going to occur, the Air Force limits its fighting capability by not using these individuals in their ultimate specialty, not to mention the loss to the Air Force of their value as trainers to meet personnel requirements in the event of a draft. This contingency occurs if the number of active duty individuals who are HIV infected increases dramatically.

In conclusion, the Air Force has many factors to consider and hard choices to make. If the number of HIV infected individuals increases drastically and force

readiness is really the driver behind AIDS/HIV policy, then the Air Force will have to reconsider its position on several of the issues brought to light in this paper.

V. Conclusions and Recommendations

Summary and Conclusions

The purpose of this research was to determine if the Air Force's present policy on HIV infection would be adequate for the future by considering the course of the AIDS epidemic. Within this context, the task was viewed from several different perspectives to find any important factors that might play a role in changing policy. The situations proposed were hypothetical but were necessary to fully exploit "worst-case" scenarios. A thorough review of what is presently known about HIV infection and AIDS was conducted to identify the critical variables that could have an impact on policy. Identifying and defining the variables in question would, without a doubt, assist policy makers in ascertaining the most appropriate action.

After careful examination of the Air Force's policy on HIV infection, I have concluded that even though the policy appears to meet the needs of the Air Force at the present time, because of the great uncertainty involved with the AIDS epidemic, one should not judge the future adequacy of the policy in light of current AIDS research. Instead this thesis concludes that the impact of the AIDS epidemic on the Air Force is not only dependent on the course of the epidemic but also on the foresight of the Air Force. Specifically, given that maintaining force readiness is the

objective of the Air Force's HIV policy, then the variables I have presented will have to be considered and policy changes made to reflect their potential impact.

Deterministic Factors

The following variables were found to be crucial to evaluating the impact of the AIDS epidemic on force readiness: actual number of HIV infected; predictions of number to become infected; the form of transmission; and lastly, the time frame for seropositive conversion.

Numbers of HIV Infected

The procedures for determining the actual number of HIV infected members of the Air Force have already been established and are continuing. This system alone and its results are not sufficient as a base for decisions. The results of the identification and surveillance policy provide only a "snapshot" view of how many are HIV infected. It does not account for how many are infected but not yet detectable by means of the approved tests. Because of the limitations of medical science HIV infection can go undetected for up to 14 weeks. The number in this category is likely very small but none the less of concern. Although the results of the screening program are certainly necessary as part of the systematic process for determining policy, it is also necessary for those given the responsibility of

making policy not to overlook potential shortcomings of the screening program or be misled by the results.

Predictions

For the sake of force strength in the future, predictions for the number of HIV infected should be made. Many estimates for the future, the number of accessions necessary to meet all requirements, the number of deployable Reserve Force units and personnel, and the number of experienced personnel on active duty necessary to meet any contingency, are dependent upon personnel projections based on national strategy. The AIDS epidemic has and will continue to influence recruitment policy as well as retention policy. Since the Air Force precludes applicants from the opportunity to serve based on serologic evidence of HIV infection, then the Air Force may need to recruit aggressively more applicants to make up for a possible deficiency created by the epidemic. The same applies to retention. If HIV infected members are allowed to remain on active duty in assignment restricted status (i.e., nondeployable positions), there may be a need to increase the rate of accessions to meet manpower and personnel requirements.

Transmission Mode

The manner in which HIV infection is transmitted is a critical variant in determining and possibly controlling how widespread the epidemic will be in the Air Force population. The Air Force data regarding transmission mode of those already infected is incomplete and therefore of limited value. Because so few (approximately 20%) of the HIV-infected individuals in the Air Force are willing to reveal how they may have contracted the infection, one can not base conclusions on these results alone. Thus it would seem appropriate for the Air Force to consider alternative courses of action based on the data available from the worldwide community as well as on the preliminary data available from its own research.

Though it may not appear that intravenous drug abuse is a problem in the Air Force, it certainly is having an impact on the spread of AIDS in the general population. This population, intravenous drug abusers, exhibits the highest increase for incidence of AIDS and is seen as the link to the heterosexual population. The Air Force should be very concerned with this alarming fact. Not particularly because the rate of infection has increased for IV drug abusers but, because the Air Force assumes that the majority of its members contract HIV infection through heterosexual contact.

Air Force recruitment policy attempts to preclude all IV drug abusers from entering the Air Force. Recruitment

policy or even AIDS/HIV policy can not prevent Air Force members or their dependents from engaging in unprotected sexual activities with the general population.

The latest data from the Centers for Disease Control reveals that heterosexual transmissions are increasing. A one percent increase in heterosexual transmission was reported to the Domestic Policy Council on the Prevalence and Rate of Spread of HIV and AIDS from a total of 2.6% of all AIDS cases for the period of October 1986-September 1987 up to 3.6% of all cases for October 1987-September 1988. A one percent increase may not appear to be significant at this time but given several years of a one percent above the year before increases, it does depict a grim picture for the future of the heterosexual population of the United States. Given the evidence of increasing HIV infection, the heterosexual population could parallel the rate of AIDS incidence seen in the homosexual/bisexual and intravenous drug abuser populations.

Seropositive Conversion

The final variable I foresee as having an impact on Air Force HIV policy in regards to force readiness is the time required for seropositive conversion. Because the time between HIV infection and AIDS related complex (ARC) or full blown AIDS can be as much as 10 years $\pm$ 4 to 5 years, the future for those infected is uncertain.

One of the elements that the Air Force uses to base accession projections for the future is estimates of career-committed airmen. Currently the impact of the AIDS epidemic does not present a problem for accession projections because the number of HIV infected individuals on active duty is small. Were the number of infected individuals on active duty and included in the category, "career committed" to increase significantly then the Air Force would have to consider and perhaps even exclude the total number of HIV infected individuals from their estimates of career-committed individuals. This type of action might be necessary when one takes into account the unpredictable nature of the incubation period for the disease.

Recommendations for Further Research

Because of the time restrictions on the study, many factors that were not directly relevant to force readiness were not examined. These factors could have an indirect impact on policy and therefore studies should be conducted to determine the extent of their impact.

First, monetary cost to the Air Force for health care of active duty infected individuals as well as other health care beneficiaries should be studied. This would provide the Air Force with a base for determining present as well as future needs. For instance, will more medical facilities be required to provide treatment for HIV infected individuals, active duty as well as other health care beneficiaries?

Second, another monetary consideration worth analyzing is the amount expended by the Veterans Administration in the form of disability payments to those who choose to be released from active duty even though they are considered fit for duty. This could be a considerable amount if the trend continues, hence the Air Force with the assistance of other government agencies may find it necessary to make changes based on the results.

Lastly, performance on the job of HIV infected individuals should be examined. Studies to evaluate both physical ability (or disability) as well as psychological effects are necessary. A comparative study of individuals who are HIV infected with a group who are not infected should be undertaken to determine if there are any significant differences between the groups in the performance of their duties. Because of the physical and psychological impact of HIV infection, a study of this nature might reveal that certain jobs or specific tasks might be too strenuous or overwhelming for HIV infected individuals.

Futhermore, if certain specialties are found to be unsuitable for HIV-infected individuals because of physical or psychological factors then possibly the Air Force would have to further restrict the assignments of individuals who are HIV infected.

Appendix: Memorandum for Air Force Surgeon General
Air Force HIV Policy

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November 23, 1988

MEMORANDUM FOR AIR FORCE SURGEON GENERAL

SUBJECT: Policy on Identification, Surveillance, and Administration of Personnel Infected With Human Immunodeficiency Virus (HIV) - ACTION MEMORANDUM

This memorandum implements revised DOD policy and supersedes previous Air Force policy guidance on this subject.

The revised policy is established relative to Air Force members, candidates for accession, and military health care beneficiaries with serologic evidence of infection with Human Immunodeficiency Virus (HIV), formerly referred to as HTLV-III. This policy is intended to reflect current test technology, knowledge regarding the natural history of this disease, the risks to the infected individual incident to military service, the risk of transmission of disease to noninfected personnel, the effect of infected personnel on the function of the unit, and the safety of the blood supply. These policies are adopted as interim guidance and will be reviewed within one year.

A. ACCESSION

1. Individuals with serologic evidence of HIV infection (Food and Drug Administration approved enzyme immunoassay [EIA] serologic test for the HIV antibodies, and if repeatedly reactive, also positive with the immuno-electrophoresis test [Western Blot]), are not eligible for commissioning or enlistment in the United States Air Force. The rationale for this policy is: The condition existed prior to appointment or enlistment; the Air Force avoids potential medical costs; the possibility that the individual will not complete his or her service commitment; clinical evidence indicates that individuals with serologic evidence of HIV infection may suffer adverse and potentially life-threatening reactions to some live virus immunizations administered at basic training; an individual with serologic evidence of HIV infection is not able to participate in battlefield blood donor activities or other blood donation programs; and presently, there is no way to differentiate

between individuals with serologic evidence of HIV infection who will progress to clinical disease and those individuals who will remain healthy.

a. Applicants for enlistment shall be screened for serological evidence of HIV infection at the Military Entrance Processing Station (MEPS) or the initial point of entry to military service. Applicants for the delayed enlistment program, tested by MEPS, will be retested if 180 days have elapsed from the day of MEPS testing to arrival at the initial entry point. Candidates for commissioning shall be screened for serologic evidence of HIV infection during their preappointment and/or precontracting physical examination and again as part of the commissioning physical examination.

b. Administration of officer applicants who are ineligible for appointment due to serologic evidence of HIV infection shall be in accordance with the following provisions:

(1) Enlisted servicemembers, who are candidates for appointment through Officer Training School (OTS), shall be disenrolled immediately from the program. If OTS is the individual's initial entry training, the individual shall be discharged. If the sole basis for discharge is serologic evidence of HIV infection, an honorable or entry level discharge, as appropriate, shall be issued. An individual who was on extended active duty prior to entry into OTS, but does not demonstrate immunological or progressive clinical illness, shall be retained in enlisted status unless the individual requests separation as referenced in paragraph D.3. of this memorandum.

(2) Individuals in preappointment programs, such as Reserve Officer Training Corps (ROTC), shall be disenrolled from the program. However, the Secretary of the Air Force, or designee, may delay disenrollment to the end of the academic term (i.e., semester, quarter, or similar period) in which serologic evidence of HIV infection is confirmed. Disenrolled participants shall be permitted to retain any financial support through the end of the academic term in which the disenrollment is effected. Financial assistance received in these programs is not subject to recoupment, if the sole basis for disenrollment is serologic evidence of HIV infection.

(3) Air Force Academy cadets shall be separated from the Air Force Academy and discharged. The Secretary of the Air Force or designee may delay separation to the end of the current academic year. A cadet granted

such a delay in the final academic year, who is otherwise qualified, may be graduated without commission and thereafter discharged. If the sole basis for discharge is serologic evidence of HIV infection, an honorable discharge shall be issued.

(4) Commissioned officers in DOD sponsored professional education programs leading to appointment in a professional military specialty (including, but not limited to medical, dental, chaplain, and legal/judge advocate) shall be disenrolled from the program not later than the end of the academic term in which serologic evidence of HIV infection is confirmed. Disenrolled officers shall be administered in accordance with Air Force regulations. Except as specifically prohibited by statute, any additional service obligation incurred by participation in such programs shall be waived, and financial assistance received in these programs shall not be subject to recoupment. Periods spent by such officers in these programs shall be applied fully toward satisfaction of any preexisting service obligation.

2. Applicants for reserve component accession shall be screened for serologic evidence of HIV infection during the normal entry physical examinations or in the preappointment programs established for officers. Those individuals with serologic evidence of HIV infection, who are required to meet accession medical fitness standards in order to enlist or be appointed, are not eligible for military service with the reserve components.

B. DISEASE SURVEILLANCE AND HEALTH EDUCATION

1. Controlling the transmission of HIV and safeguarding the health of those already infected through early identification are both dependent on an effective disease surveillance and health education programs.

2. Health education with resultant behavioral modification is presently the only effective way to control the spread of the HIV. Specific AIDS prevention education is mandatory for all Air Force active duty personnel and civilian supervisors. Appropriate movies, video tapes, booklets, pamphlets, and handouts will be reviewed, evaluated, and recommended by the Aerospace Medical Consultants Division (HQ USAF/SGPA) for use in conducting education programs. Nonsupervisory civilian employees and Air Force dependents should be encouraged to attend education programs.

3. Active duty and reserve component military personnel shall be screened for serological evidence of HIV infection every two years. HIV positive active duty personnel will be referred to Wilford Hall USAF Medical Center (WHMC) for complete clinical and immunological evaluation in accordance with the standardized clinical protocol issued by ASD(HA). The patient's immediate commander will be contacted to obtain any additional information concerning the individual's personal behavior or related disciplinary problems as part of risk assessment. Reserve component members not on extended active duty are ineligible for medical evaluation in military medical treatment facilities (MTFs). These individuals shall be counseled regarding the significance of a positive HIV antibody test and referred to their private physicians for medical care and further counseling.

a. HIV rescreening of all active duty, Guard, and Reserve personnel will begin October 1, 1988 and continue through September 30, 1990. All members must be HIV tested at least once during this period.

b. Special testing

(1) Since the HIV is transmitted primarily through sexual contact, all military personnel diagnosed as having syphilis (all stages), gonorrhea (all forms), chancroid, lymphogranuloma venerum (LGV), any chlamydial urogenital infection, and granuloma inguinale shall be tested for HIV, regardless of previous testing. All health care beneficiaries presenting to sexually transmitted disease (STD) clinics shall be offered HIV testing and HIV counseling.

(2) Intravenous drug users are also at high risk. All Air Force military personnel entering formal drug rehabilitation programs shall be tested when entering such programs, regardless of previous testing. All health care beneficiaries entering drug rehabilitation programs shall be offered HIV testing and counseling.

(3) Considering the risk of prenatal, perinatal, and postnatal transmission of HIV, active duty women who are pregnant shall be tested when presenting at the prenatal clinic. This test may be used to satisfy the total Force screening test and/or the next scheduled periodic retest, as long as the test is performed by the HIV testing contractor. All pregnant health care beneficiaries shall be offered HIV testing.

(4) Air Force medical personnel should carefully use barrier techniques at all times when handling blood and other body fluids. All MTFs should have written, locally adapted policy on HIV surveillance for medical personnel accidentally exposed. Testing of medical personnel after accidental exposure to blood or body fluids should be accomplished when indicated.

(5) Special testing of other personnel may be accomplished when ordered by the attending physicians as part of a medical workup where indicated by medical history and other findings, such as behavioral risk factor, unexplained prolonged fever, and weight loss with generalized lymphadenopathy. The clinical indication must be in accordance with current medical standards and clearly documented in the medical record. These clinical tests should be accomplished locally and without regard to previous testing.

(6) For military personnel making a permanent change of station move to overseas locations, including consecutive overseas tours, the HIV test will be reaccomplished if the current test result reporting date is over 180 days.

(a) The "180 day period above" is the six months prior to "notification" of overseas assignments. An individual does not have to be HIV tested within six months of his or her departure date.

(b) If an individual is notified of an overseas assignment with temporary duty (TDY) of less than 179 days enroute, the individual need only to have been HIV tested during the six months prior to overseas assignment notification and will not require HIV retesting during the enroute TDY.

(c) If an individual is notified of an overseas assignment with TDY greater than 180 days enroute, the individual must have been HIV tested within six months prior to assignment notification, plus he or she must be HIV retested during the enroute TDY. This is necessary due to the length of the TDY.

(d) If an individual is sent to an enroute TDY with an anticipated CONUS assignment and the assignment is changed to overseas during the enroute TDY, the individual must have been HIV tested within six months prior to the overseas assignment notification date.

(e) If the individual has not been HIV tested during the six months prior to notification (see B.1.b.(6)(d)), then HIV testing should be accomplished prior to the departure overseas.

(f) Military personnel going TDY for 179 days or less to CONUS or overseas locations need not be HIV tested prior to TDY.

(7) Results from blood donor screening tests, as currently performed by the Red Cross or other blood collection agencies, cannot be used in the Air Force HIV total Force screening and epidemiologic information gathering program.

4. The surveillance of military personnel for HIV infection is being accomplished for Force readiness reasons. It is also essential that all reasonable efforts be made to protect and educate other health care beneficiaries as an effective means to contain this disease.

a. An HIV/AIDS education program shall be provided by active duty medical facilities for the Air Force beneficiary community. Voluntary HIV serologic screening should be offered to all beneficiaries of the military health care system in accordance with recommendations of the US Public Health Service, and as indicated by standard medical practice. For example, HIV serologic screening should be offered to dependent beneficiaries presenting at STD disease clinics, drug rehabilitation units, and prenatal clinics.

b. Mandatory screening of civilian employees for serologic evidence of HIV infection for sponsorship, employment, or assignment overseas is not authorized, except pursuant to valid requirements imposed by the host country. Testing and the use of test results will comply with policies to be developed by the Assistant Secretary of Defense (Force Management and Personnel), in coordination with the Assistant Secretary of Defense (Health Affairs), Assistant Secretary of Defense (International Security Affairs), and the DOD General Counsel. Information and guidance on civilian issues is contained in an ASD(FM&P) memorandum of January 22, 1988 and Federal Personnel Manual (FPM) Bulletin 792-42 of March 24, 1988. This mandatory screening does not apply to contractor personnel, family members, or foreign nationals. Problems that arise with host nations concerning testing of these civilians will be addressed at that time.

c. Beneficiaries, who are concerned about whether they have been exposed to HIV, should consult appropriate health care providers through the established appointment system. Medical evaluation, including the HIV test, shall be determined by the attending physician.

5. The medical assessment of each exposure to and/or case of HIV infection seen at a MTF shall include an epidemiological assessment of the potential transmission of HIV to other persons at risk of infection, including sexual and other intimate contacts and the family of the patient. This information is vital to provide appropriate preventive medicine counseling and to the continued development of scientific knowledge regarding the natural history and transmission patterns of HIV. The occurrence of HIV infection, or serologic evidence of HIV infection, shall not be used as a basis for any disciplinary action against an individual; however, the individual will be ordered by the immediate commander to follow preventive medicine requirements. It will be made clear to the individual that ignoring counseling, and knowingly risking the transmission of HIV to others at a later time, may result in administrative/disciplinary action. (See Attachment 1 for detailed procedures.)

6. All HIV positive individuals shall be evaluated at least annually. Such longitudinal epidemiological information is crucial to define the natural history of HIV infection and provide guidance for further policies. Reevaluation schedules and procedures for HIV positive active duty personnel will be established by WHMC.

7. All military medical treatment organizations, including physicians, hospitals, medical clinics, other health care facilities, and clinical laboratories, shall notify promptly the cognizant military health authority whenever a diagnosis of HIV infection is made or whenever laboratory examination of any specimen derived from the human body yields microscopic, cultural, immunologic, serologic or other evidence indicative of infection with HIV. Since all the Air Force active duty cases are referred to WHMC for evaluation, treatment and disposition, reporting of AIDS and HIV infections by telegraphic means in accordance with AFR 168-4, Administration of Medical Activities, paragraph 12-131, is not required, except for those cases when death occurred outside of WHMC.

a. Upon notification of an individual with serologic or other laboratory or clinical evidence of HIV infection, the cognizant military health authority shall undertake preventive medicine intervention. This

intervention shall include counseling of the individual and others at risk of infection (such as his or her sexual contacts who are military health care beneficiaries) regarding transmission of the virus, coordination with military and civilian blood bank organizations to trace possible exposure through blood transfusion or donation of infected blood, and referral of appropriate case-contact information to the cognizant military or civilian health authority.

(1) All individuals with serologic evidence of HIV infection, who are military health care beneficiaries, shall be counseled by a physician or designated health care provider regarding the significance of a positive antibody test. They shall be advised of the mode of transmission of this virus, the appropriate precautions and personal hygiene measures required to minimize transmission through sexual activities and/or intimate contact with blood or blood products, and the need to advise any past sexual partners of their infection. Women shall be advised of the risk of prenatal, perinatal, and postnatal transmission during past, current, and future pregnancies. The beneficiary shall be informed that he or she is ineligible to donate blood, sperm, and organs and shall be placed on a permanent blood donor deferral list.

(2) Epidemiological investigation shall attempt to determine potential contacts of the patient with serologic or other laboratory or clinical evidence of HIV infection. The patient shall be informed of the importance of case-contact notification to interrupt disease transmission, and shall be informed that contacts will be advised of their potential exposure to HIV. Individuals at risk of infection include sexual contacts (male and female), children born to infected mothers, recipients of blood and blood products, organs, tissues, or sperm, and users of contaminated intravenous drug paraphernalia. Those persons identified to be at risk, and who are eligible for health care in the military medical system, shall be advised to see their military health care provider for tests and evaluation. Military members identified to be at risk shall be counseled and tested for serologic evidence of HIV infection. Other beneficiaries, such as retirees and family members, identified to be at risk shall be informed of their risk and offered serologic testing, clinical evaluation, and counseling. Anonymity of the HIV index case shall be maintained unless reporting is required under paragraph B7(d).

b. Spouses of HIV positive reserve component members will be notified of their potential exposure either

by Air Force health care providers or by local civilian public health care authorities and advised that they may receive serologic testing and counseling on a voluntary basis from Air Force MTFs. Specific notification procedures and required procedures to designate all spouses notified to receive testing and counseling will be developed by the Air Force Reserve Command Surgeon (HQ USAF/REM) and the Office of the Air Surgeon, National Guard Bureau (NGB/SQ).

c. The names of other individuals identified to be at risk, who are not eligible for military health care, shall be provided to local civilian public health authorities unless prohibited by the appropriate state or host nation civilian health authority. Anonymity of the HIV index case shall be maintained unless reporting is required under paragraph B.7.d.

d. Communicable disease reporting procedures of civilian authorities shall be followed to the extent consistent with this memorandum through liaison between the military public health jurisdiction and the appropriate local state, territorial, federal, or host-nation health jurisdictions.

e. When a member has been evaluated and diagnosed as HIV positive at WHMC, the commander of the servicing MTF will notify the immediate commander of such fact and all necessary information to properly supervise the member.

8. The USAF School of Aerospace Medicine, Epidemiology Division, will gather data on the epidemiology of HIV infection for the Air Force. The Air Force reference laboratory, within the Epidemiology Division, will also perform quality control on all Air Force and Air Force contract laboratories performing HIV tests. The Department of the Army, as lead agency for infectious disease research, shall budget for and fund all DOD research efforts in accordance with guidance provided by ASD(HA).

9. Due to the high priority assigned to the continued medical evaluation of military personnel with serologic evidence of HIV infection, such individuals shall only be assigned within the United States and not be deployed overseas. Additionally, military personnel with serologic evidence of HIV infection shall only be assigned to nondeployable units and positions. Further, in order to protect the health and safety of military personnel with serologic evidence of HIV infection and of other military personnel, the assignments of such personnel may be limited with respect to the nature and location of the duties performed in accordance with operational requirements.

Although, these assignment limitations based solely on serologic evidence of HIV infection are limited to health and safety reasons, commanders may consider factors in addition to the serologic evidence of infection under appropriate Air Force regulations on a case-by-case basis. For example, if there is evidence of misconduct or emotional instability on the part of the member, a commander, with the advice of appropriate staff agencies, may determine under the appropriate governing regulation that the member should be restricted from Personnel Reliability Program (PRP) or Sensitive Compartmented Information (SCI) duties. In this regard, see paragraph F on the use of information.

C. RETENTION

1. Active duty personnel with serologic evidence of HIV infection shall be referred for a medical evaluation for documentation of fitness for continued service in the same manner as personnel with other progressive illnesses. Evaluation will be conducted in accordance with the standardized clinical protocol referenced in paragraph B.3., above. In addition, a Medical Evaluation Board (MEB) shall be convened, to include a Physical Evaluation Board (PEB), when appropriate, in accordance with the applicable Air Force regulation. Individuals with serologic evidence of HIV infection, who show no impairment related to HIV infection, shall not be separated solely on the basis of serologic evidence of HIV infection.

2. Reserve component members with serologic evidence of HIV infection are ineligible for extended active duty (duty for a period of more than 30 days) except under conditions of mobilization. Reserve component members, who are not on extended active duty (duty for a period of more than 30 days), or who are not on extended full-time National Guard duty, and who show serologic evidence of HIV infection, shall be transferred involuntarily to the Standby Reserve, only if they cannot be utilized in the Selected Reserve. The unit of assignment commander will determine on a case-by-case basis whether the member can be utilized in the Selected Reserve based on the factors in paragraph B.9.

D. SEPARATION

1. Military personnel, who are infected with HIV and who are determined to be unfit for further duty, shall be retired or separated pursuant to Chapter 61, Title 10, United States Code as implemented in DOD Directive 1332.18 of February 25, 1986 or Section 1004(c), Title 10, United States Code.

2. Military personnel with serologic evidence of HIV infection, who are found not to have complied with lawfully ordered preventive medicine procedures, are subject to appropriate administrative and disciplinary action which may include separation. (See Attachment 1 for procedures to administer order and sample order.)

3. Voluntary separation of military personnel with serologic evidence of HIV infection under Air Force regulation, if requested by the individual, is permitted. The miscellaneous reasons section of the applicable Air Force regulation will be used.

E. SAFETY OF THE BLOOD SUPPLY

1. Armed Services Blood Program Office (ASBPO) policies, Food and Drug Administration guidelines, and accreditation requirements of the American Association of Blood Banks shall be followed. All HIV positive individuals identified through any screening program will be questioned about previous blood donations, as part of the Air Force expanded blood bank look-back program. They will also be entered into a DOD permanent donor deferral listing. In the event that units of blood cannot be screened for infectious agents prior to transfusing (contingency or battlefield situations), the ASBPO shall provide guidance to operational units, in coordination with all military departments.

2. The Air Force Look Back Program will trace potentially infectious blood to ensure that donors are HIV tested and counseled, if necessary. Questions concerning procedures should be directed to the Medical Readiness Division (HQ USAF/SGHR), AUTOVON 297-5054.

3. The Air Force policy is to discourage directed blood donations (also known as designated donation), since there is no evidence that this source of blood is any safer than blood supplied through the blood bank program. Directed blood donations are allowed pending implementation of the ASBPO policy, based upon local circumstances and physician concurrence.

F. LIMITATIONS ON THE USE OF INFORMATION

1. Information obtained from laboratory tests for HIV performed under this memorandum may not be used as the basis for separation of the Air Force member, except for a separation based upon physical disability or as specifically authorized by this memorandum. Laboratory test results confirming the serologic evidence of HIV infection may not be used as an independent basis for any disciplinary or

adverse administrative action. However, such results may be used for other purposes including:

- a. In a separation for physical disability.
- b. In a separation under the accession testing program.
- c. In a voluntary separation for the convenience of the government.
- d. In any other administrative separation action authorized by policy.
- e. In any other manner consistent with law or regulation (e.g., the Military Rules of Evidence) including:

(1) To establish the HIV positive status of a member who disregards the preventive medicine counseling or the preventive medicine order, or both, in an administrative or disciplinary action based on such disregard or disobedience.

(2) To establish the HIV positive status of a member as an element of any other permissible administrative or disciplinary action (e.g., as an element of proof of an offense charged under the Uniform Code of Military Justice).

(3) To establish the HIV positive status of a member as a proper ancillary matter in an administrative or disciplinary action (e.g., as a matter in aggravation in a court-martial in which the HIV positive member is convicted of an act of rape committed after he is informed that he is HIV positive).

3. The limitations in paragraph F.1. on use of information obtained from a member do not apply to the introduction of evidence for impeachment or rebuttal purposes in any proceeding in which the evidence of drug abuse or relevant sexual activity (or lack thereof) has been first introduced by the Air Force member or to disciplinary or other actions based on independently disqualification (temporary or permanent) from a personnel reliability program, denial, suspension, or revocation of a security clearance, suspension or termination of access to classified information, transfer between reserve components, removal (temporary or permanent) of AFSC, and removal (temporary or permanent) from flight status or other duties requiring a high degree of stability or alertness, such as explosive ordinance disposal. Nonadverse personnel actions supported by serologic evidence of HIV infection or information as

described in F.1. above will be accomplished under governing Air Force regulations considering all relevant factors on a case-by-case basis.

4. If any personnel actions are taken, because of serologic evidence of HIV infection or information described in paragraph F.1. above, care shall be taken to ensure that no unfavorable entry is placed in a personnel record in connection with the action. Recording a personnel action is not itself an unfavorable entry in a personnel record. Additionally, information that reflects that an individual has serologic or other evidence of infection with HIV is not an unfavorable entry in a personnel record. However, because of the sensitive nature of this information, it should be treated with the utmost discretion.

G. IMPLEMENTATION

These policies are effective immediately and will be reviewed within one year. Applicable Air Force directives shall be reviewed and changed, as necessary, to accommodate the policy set forth in this memorandum.

Eric M. Thorson
Acting Assistant Secretary of the Air Force
(Readiness Support)

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The purpose of this study was to examine present Air Force policy on HIV infection and determine its adequacy for the future based on the predicted course of the AIDS epidemic. Information concerning AIDS and HIV infection for both the general population as well as the Air Force population was reviewed and presented to provide an assessment of the AIDS epidemic in the United States and in the Air Force.

Based on the examination of Air Force policy on HIV infection and the predicted course of the AIDS epidemic, this study did not conclusively determine the adequacy of the policy for the future. At present, Air Force policy on HIV infection appears to be suitable for the reason that the number of HIV infected individuals in the Air Force is insignificant. Nonetheless, because of the great uncertainty involved with the AIDS epidemic there is justification for concern regarding how it will affect the Air Force in the future.

In that respect, this study did conclude that there are certain variables considered crucial to evaluating the impact of the AIDS epidemic in the Air Force. The crucial variables are: the actual number of HIV infected individuals; predictions of the number to become infected; the increasing rate of heterosexual transmission for HIV infection; and lastly, the time frame for seropositive conversion.

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