

# Appendix F.—Glossary of Acronyms and Terms

## Glossary of Acronyms

ADAMHA	—Alcohol, Drug Abuse, and Mental Health Administration (part of PHS)
AIDS	—acquired immunodeficiency syndrome
ARV	—AIDS-related virus
CDC	—Centers for Disease Control (part of PHS)
DBDR	—Division of Blood Diseases and Resources (part of NHLBI)
DHHS	—Department of Health and Human Services
DNA	—deoxyribonucleic acid
DRR	—Division of Research Resources (part of NIH)
FDA	—Food and Drug Administration (part of PHS)
FOCMA	—feline-oncornavirus-cell-membrane-associated antigen
FTEs	—full-time equivalents
HPA-23	—heteropolytungstate
HRSA	—Health Resources and Services Administration (part of PHS)
HTLV-I	—human T-cell lymphotropic virus, type I
HTLV-II	—human T-cell lymphotropic virus, type II
HTLV-III	—human T-cell lymphotropic virus, type III
IDAV	—immune-deficiency -associated virus
LAV	—lymphadenopathy-associated virus
MCHBG	—Maternal and Child Health Block Grants
NCI	—National Cancer Institute (part of NIH)
NEI	—National Eye Institute (part of NIH)
NHLBI	—National Heart, Lung, and Blood Institute (part of NIH)
NIAID	—National Institute of Allergy and Infectious Diseases (part of NIH)
NIDA	—National Institute on Drug Abuse (part of ADAMHA)
NIDR	—National Institute of Dental Research (part of NIH)
NIH	—National Institutes of Health (part of PHS)
NIMH	—National Institute of Mental Health (part of ADAMHA)
NINCDS	—National Institute of Neurological and Communicative Disorders and Stroke (part of NIH)

OASH	—Office of the Assistant Secretary for Health (part of PHS)
OMB	—Office of Management and Budget (part of Executive Office of the President)
OPA	—Office of Public Affairs (part of OASH)
OPRR	—Office of Protection from Research Risks (part of NIH)
OTA	—Office of Technology Assessment (part of U.S. Congress)
PHS	—Public Health Service (part of DHHS)
RFAs	—requests for applications
RNA	—ribonucleic acid
TCGF	—T-cell growth factor (also known as interleukin-2)

## Glossary of Terms

**Acquired immunodeficiency syndrome (or acquired immune deficiency syndrome):** See “AIDS.”

**Active immunity:** Protection against a disease resulting from the production of antibodies in a host (i.e., person or animal) that has been inoculated with an antigen. (Compare “passive immunity.”)

**Adenoviruses:** Any of a group of DNA-containing viruses originally identified in human adenoid tissue, causing respiratory diseases, and including some capable of inducing malignant tumors in experimental animals. (See also “viruses” and compare “reoviruses” and “retroviruses.”)

**AIDS (acquired immunodeficiency syndrome):** A disease believed to be caused by the retrovirus HTLV-111 (human T-cell lymphotropic virus, type 111) and characterized by a deficiency of the immune system. The primary defect in AIDS is an acquired, persistent, quantitative functional depression within the T4 subset of lymphocytes. This depression often leads to infections caused by micro-organisms that usually do not produce infections in individuals with normal immunity or to the development of a rare type of cancer (Kaposi’s sarcoma) usually seen in elderly persons or in individuals who are severely immunocompromised from other causes. Other associated diseases are currently under investigation and will probably be included in the final definition of AIDS.

**AIDS-related complex:** A variety of chronic but nonspecific symptoms and physical findings that appear related to AIDS, which may consist of chronic

generalized lymphadenopathy, recurrent fevers, weight loss, minor alterations in the immune system, and minor infections. Some persons with AIDS-related complex may develop full-blown AIDS, while in others, the condition may represent the height of clinical illness in reaction to infection with HTLV-III. AIDS-related complex is sometimes known as "pre-AIDS." (Compare "lymphadenopathy syndrome.")

**Antibody:** A blood protein produced by mammals in response to exposure to a specific antigen. Antibodies are a critical component of the mammalian immune system.

**Antigen:** A large molecule, usually a protein or carbohydrate, which when introduced into the body stimulates the production of an antibody that will react specifically with that antigen.

**Appropriation:** An act of Congress that authorizes one or more Federal agencies to incur "obligations" (see definition below) and make payments from the general fund or various special funds of the U.S. Treasury. Appropriations do not represent funds available in the Treasury, but are limitations on the amounts that agencies may obligate during the time period stated in the law.

**ARV (AIDS-related retrovirus):** A retrovirus recovered from an AIDS patient and believed to be the same virus as HTLV-III. (See "HTLV-III.")

**B lymphocytes (or B cells):** Lymphocytes that mediate humoral (e.g., antibody production) immune reactions. B lymphocytes proliferate under stimulation from factors released by T lymphocytes. (Compare "T lymphocytes.")

**Budget authority:** Funds that are appropriated by Congress for obligated purposes, or less commonly, requests to Congress for such appropriations.

**Clone:** A group of genetically identical cells or organisms produced asexually from a common ancestor.

**Cofactor:** Factors or agents which are necessary or which increase the probability of the development of disease in the presence of the basic etiologic agent of that disease.

**Core proteins:** Proteins that make up the internal structure or core of a virus. (Compare "envelope proteins.")

**Cytopathic:** Pertaining to or characterized by abnormal changes in cells.

**Cytotoxic:** Poisonous to cells.

**DNA (deoxyribonucleic acid):** A linear polymer, made up of deoxyribonucleotide repeating units, that is the carrier of genetic information in living organisms. Recombinant DNA is a hybrid DNA formed by joining pieces of DNA from different organisms in vitro.

**Envelope proteins:** Proteins that comprise the envelope or surface of a virus. (Compare "core proteins.")

**Enzyme:** Any of a group of catalytic proteins that are produced by living cells and that mediate and promote the chemical processes of life without themselves being altered or destroyed.

**Epidemiologic studies:** Studies concerned with the relationships of various factors determining the frequency and distribution of specific diseases in a human community.

**Etiologic agent:** Causative agent.

**Expenditures:** Amounts actually expended by Federal agencies as a result of obligations. (Compare "obligations.")

**Factor VIII:** A naturally occurring protein in plasma that aids in the coagulation of blood. A congenital deficiency of Factor VIII results in the bleeding disorder known as hemophilia A.

**Factor VIII concentrate:** A concentrated preparation of Factor VIII that is used in the treatment of individuals with hemophilia A.

**Fulminant:** Severe.

**Gene:** The basic unit of heredity; an ordered sequence of nucleotide bases, comprising a segment of DNA. A gene contains the sequence of DNA that encodes for the synthesis of one polypeptide chain (protein).

**Gene expression:** The mechanisms through which directions contained within the genes that code for a cell's products are transferred and used to direct the production process. (See also "transcription" and "translation.")

**Genome:** The genetic endowment of an organism.

**Glycoproteins:** Proteins with carbohydrate groups attached at specific locations.

**Glycosylation:** The attachment of a carbohydrate molecule to another molecule such as a protein.

**Hemophilia:** A rare, hereditary bleeding disorder caused by a deficiency in the ability to synthesize one or more of the blood coagulation proteins, e.g., Factor VIII (hemophilia A) or Factor IX (hemophilia B).

**Hepatitis:** Inflammation of the liver; may be due to many causes, including viruses, several of which are transmissible through blood transfusions.

**HPA-23 (heteropolytungstate):** A drug which has been shown to inhibit the reverse transcriptase enzyme of murine (mouse) retrovirus in vitro and in vivo, and which has been shown in early clinical trials to inhibit HTLV-III replication in humans, but which has not eradicated the virus. (Compare "ribavirin" and "suramin.")

**HTLV-III (human T-cell lymphotropic virus, type III):** A newly discovered retrovirus that is believed to be the basic cause of AIDs. The target organ of

HTLV-III is the T4 subset of T lymphocytes, which are the master regulators of the immune system. (In this memorandum, HTLV-III is used to refer to the various isolates (e.g., IDAV, LAV, ARV) that have been associated with AIDS.)

**IDAV (immune-deficiency-associated virus):** A retrovirus recovered from an AIDS patient and now believed to be the same virus as HTLV-III. (See "HTLV-III.")

**Idiotype (or idiotope):** A site on the variable portion (combining site) of an antibody molecule that can be recognized by a combining site of other antibodies.

**Immune:** Being highly resistant to a disease because of the formation of humoral antibodies or the development of cellular immunity, or both, or as a result of some other mechanism (e. g., interferon activity in viral infections). (See also "active immunity" and "passive immunity.")

**Interferon:** A class of glycoproteins (proteins with carbohydrates attached at specific locations) important in immune function and thought to inhibit viral infections.

**In vitro:** Literally, "in glass"; pertaining to a biological reaction taking place in an artificial apparatus; often used in reference to the growth of cells from multicellular organisms under cell culture conditions.

**In vivo:** Literally, "in the living"; pertaining to a biological reaction taking place in a living organism.

**Kaposi's sarcoma:** A multifocal, spreading cancer of connective tissue, principally involving the skin; it usually begins on the toes or the feet as reddish blue or brownish soft nodules and tumors.

**LAV (lymphadenopathy-associated virus):** A retrovirus recovered from a person with lymphadenopathy (enlarged lymph nodes) who was also in a group at high risk for AIDS, and now believed to be the same virus as HTLV-III. (See "HTLV-III.")

**Lymphadenopathy:** Enlargement of the lymph nodes, **Lymphadenopathy syndrome (LAS):** A condition which is characterized by persistent, generalized, enlarged lymph nodes, sometimes with signs of minor illness such as fever and weight loss, which apparently represents a milder reaction to infection with HTLV-III than full-blown AIDS. Some patients with LAS have gone on to develop full-blown AIDS, while in others, LAS may represent the height of clinical illness in reaction to infection with HTLV-III. LAS is also known as "generalized lymphadenopathy syndrome." (Compare "AIDS-related complex.")

**Lymphocytes:** Specialized white blood cells involved in the immune response. (See also "B lymphocytes" and "T lymphocytes.")

**Lymphosarcoma:** A general term applied to malignant neoplastic disorders of lymphoid tissue, but not including Hodgkin's disease.

**Messenger RNA (mRNA):** RNA that serves as the template for protein synthesis; it carries the transcribed genetic code from the DNA to the protein synthesizing complex to direct protein synthesis. (See also "RNA.")

**Monoclonal antibodies: Homogeneous antibodies derived from** clones of a single cell. Monoclonal antibodies recognize only one chemical structure and thus have remarkable specificity. They are easily produced in large quantities and have a variety of medical and industrial uses.

**Obligations: Amounts stipulated** in contractual agreements between the Federal Government and other parties. (Compare "expenditures.")

**Opportunistic infection:** A disease or infection caused by a micro-organism that does not ordinarily cause disease but which, under certain conditions (e.g., impaired immune responses), becomes pathologic.

**Passive immunity: Disease resistance in a person or animal due to the injection of antibodies from another person or animal. Passive immunity is usually short-lasting.** (Compare "active immunity.")

***Pneumocystis carinii* pneumonia:** A type of pneumonia primarily found in infants and now commonly occurring in patients with AIDS.

**Post-translational modification:** The process by which the protein product of gene expression is modified, such as through attachment of carbohydrate groups. (See also "gene expression," "translation," and "glycosylation.")

**Provirus:** The genome of an animal virus integrated into the chromosome of the host cell, and thereby replicated in all of the host's daughter cells.

**Recombinant DNA techniques:** Techniques that allow specific segments of DNA to be isolated and inserted into a bacterium or other host (e. g., yeast, mammalian cells) in a form that will allow the DNA segment to be replicated and expressed as the cellular host multiplies. The DNA segment is said to be "cloned" because it exists free of the rest of the DNA of the organism from which it was derived.

**Reoviruses:** Any of a group of relatively large, widely distributed, and possibly tumor-causing viruses with double-stranded RNA. Unlike retroviruses, which also contain RNA, reoviruses replicate in the cytoplasm of the cells they invade and do not produce DNA analogs to their RNA for incorporation into the host cell's genome. (See also "viruses" and compare "adenoviruses" and "retroviruses.")

**Retroviruses: Viruses that contain RNA, not DNA, and that produce a DNA analog of their RNA**

through the production of an enzyme known as “reverse transcriptase.” The resulting DNA is incorporated in the genetic structure of the invaded cell in a form referred to as the “provirus.” (See also “provirus” and “viruses” and compare “adenoviruses” and “reoviruses.”)

**Reverse transcriptase:** An enzyme produced by retroviruses that allows them to produce a DNA analog of their RNA, which is then incorporated into the host cell. (See also “retroviruses.”)

**Ribavirin:** A drug which has been shown to protect T4 cells against infection by HTLV-III in vitro, and which is being tested in AIDS patients. (Compare “suramin” and “HPA-23.”)

**RNA (ribonucleic acid):** Any of various nucleic acids that contain ribose and uracil as structural components and are associated with the control of cellular chemical activities. (See also “messenger RNA.”)

**Serum:** The clear portion of any animal liquid separated from its more solid elements, especially the clear liquid (blood serum) which separates in the clotting of blood.

**Subunit vaccine:** A vaccine that contains only portions of a surface molecule of a pathogen. (See also “vaccine.”)

**Suramin:** A drug that has been shown to protect T4 cells against infection by HTLV-III in vitro, and which is being tested in AIDS patients. (Compare “ribavirin” and “HPA-23.”)

**T-cell growth factor (TCGF, also known as interleukin-2):** A glycoprotein that is released by T lymphocytes on stimulation with antigens and which functions as a T-cell growth factor by inducing pro-

liferation of activated T cells. (See also “T lymphocytes” and “glycoproteins.”)

**T lymphocytes (or T cells):** Lymphocytes that mature in the thymus and which mediate cellular immune reactions. T lymphocytes also release factors that induce proliferation of T lymphocytes and B lymphocytes. (Compare “B lymphocytes.”)

**Transcription:** The synthesis of messenger RNA on a DNA template; the resulting RNA sequence is complementary to the DNA sequence. This is the first step in gene expression. (See also “gene expression” and compare “translation.”)

**Transfer authority:** Authority from Congress to transfer money from one appropriation to another within an agency or across agencies.

**Translation:** The process in which the genetic code contained in the nucleotide base sequence of messenger RNA directs the synthesis of a specific order of amino acids to produce a protein. (See also “gene expression” and compare “transcription.”)

**Tropism:** An innate tendency to react in a definite manner to stimuli.

**Vaccine:** A preparation of killed organisms, living attenuated organisms, living fully virulent organisms, or parts of micro-organisms, that is administered to produce or artificially increase immunity to a particular disease.

**Viruses:** Any of a large group of submicroscopic agents capable of infecting plants, animals, and bacteria, and characterized by a total dependence on living cells for reproduction and by a lack of independent metabolism. (See also “adenoviruses,” “provirus,” “reoviruses,” and “retroviruses.”)