

“NIH-Funded HIV/AIDS Research

Past Discoveries and Current Initiatives Form the Basis for Treatment Advances

AIDS research at the National Institutes of Health (NIH) has led to major advances in the understanding and treatment of HIV and related opportunistic infections. NIH-funded researchers are now at the forefront of the global effort to build upon these findings and develop new, more effective treatment regimens and prevention interventions. Success against AIDS and other diseases will only be possible with a comprehensive national research effort. Therefore, Congress should support AIDS research and NIH research overall.

The Impact of NIH-supported AIDS research:

- dramatically increased survival time and improved quality of life for people living with HIV and AIDS;
- helped develop the 23 FDA-approved drugs for the treatment of HIV infection, which are largely responsible for recent declines in AIDS-related mortality by 67 percent in the U.S.;
- led to tremendous advances in the treatment and prevention of AIDS-related opportunistic infections (OIs) and greatly reduced the incidence of OIs by over 67 percent;
- demonstrated that antiretroviral drugs dramatically reduce HIV transmission from mother to fetus, leading to nationwide reductions in perinatal HIV transmission of 90-95 percent;
- demonstrated that combinations of protease inhibitors and other anti-HIV drugs can reduce the amount of virus in patients to undetectable levels.
- demonstrated through the pivotal HIVNET 012 study that two simple doses of the drug nevirapine (one to the mother at the onset of labor and one to the infant within 72 hours of delivery) can cut transmission of HIV from mother to child by 47 percent. This study has led to effective programs to prevent mother-to-child transmission in resource-limited countries.

FY 2005 Funding Need

NIH needs a 10% increase over its doubled budget, for a total FY 2005 appropriation of \$30.6 billion, including a commensurate increase for AIDS research funding totaling \$3.135 billion. We believe that the complex decisions about how to spend research funding should be vested with the scientists at NIH.

Broad-Based Benefits of AIDS Research

- AIDS research enhances and stimulates research in other fields, with broad implications for other diseases such as cancer, heart disease, Alzheimer's disease, and others.
- Approximately one-third of NIH AIDS research funding is used for basic science research with broad implications across scientific disciplines.
- AIDS research has accelerated study of the human immune system. NIH AIDS research is one of the main sources of funds for immunological research.
- Several drugs that first received approval for the treatment of AIDS related conditions, including fluconazole and clarithromycin, have important uses in cancer and organ transplant patients.
- NIH AIDS research has accelerated investigation into viruses, particularly retroviruses.

Key Areas for NIH-AIDS Research

The following areas of NIH-funded research continue to reveal how the AIDS epidemic can best be treated and prevented.

■ *Basic Biomedical Research*

Basic research in virology, immunology, infectious diseases and cancer provides insights into the life cycle of HIV. An increase in funding in this area is critical for opening new doors of understanding to pave the way for better treatments, an effective vaccine, development of a microbicide, and a cure for HIV/AIDS, as well as for other immune, infectious, and neoplastic diseases.

■ *Behavioral and Social Science Research*

Behavioral research is a vital part of a comprehensive national HIV prevention strategy. Behavioral research at NIH provided a greater understanding of the factors that put people at risk of HIV infection and the interventions best suited to prevent HIV transmission.

■ *Therapeutic Research to Treat Those Already Infected*

Highly active antiretroviral therapy (HAART) has not eradicated HIV, even in those people in whom it is effective. In addition, over 50 percent of those on HAART have experienced treatment failure, and over 50 percent have developed intolerance to at least one of these drugs or combination of drugs. There is a great need for simpler, less toxic and cheaper drugs and drug regimens.

■ *Vaccine and Microbicide Development*

Better biomedical interventions are needed to help prevent the nearly six million new HIV infections occurring worldwide each year. Increased funding is necessary for targeted research and product development to fast track and optimize new vaccine and microbicide technologies.

■ *Epidemiology and Natural History*

Research in this area is essential in tracking the changing demographics of HIV infection and the course of disease progression in different groups affected by HIV, including women, children and people of color.

■ *International Research Priorities*

More research is needed on crucial issues that could have a major impact on the worldwide pandemic, including the prevention of mother-to-child transmission and challenges associated with breastfeeding. NIH supports international training programs and initiatives that help build infrastructure and laboratory capacity in developing countries.