CDC UPDATE
CENTERS FOR DISEASE CONTROL AND PREVENTION
NCHSTP National Center for HIV, STD & TB PREVENTION

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Addressing the Global Epidemic: CDC's International Activities

The Centers for Disease Control and Prevention's (CDC) research program is dedicated to advancing biomedical and behavioral science that promotes HIV/AIDS prevention in the United States and worldwide. Research focuses on understanding the dynamics of HIV transmission and on developing and improving prevention technologies and strategies to control the spread of HIV/AIDS and minimize its consequences.

The World Health Organization and the Joint United Nations Programme on HIV/AIDS (UNAIDS) estimate that, worldwide, as many as 42 million people have been infected with HIV since the pandemic's onset, and each day 16,000 more become infected. Recognizing the urgency of the epidemic, CDC is committed to HIV/AIDS research within, as well as outside of, U.S. borders. To understand AIDS on a global level, research must address issues and conditions unique to different countries and communities within countries. Many developing countries severely affected by the epidemic lack the research capacity, public health infrastructure, and financial and human resources to respond to the epidemic. CDC's international research underscores the importance of developing and implementing diverse interventions to address issues among varied populations and to do so quickly and cost-effectively.

Cooperative Efforts Yield Prevention Benefits

Through collaborative agreements with governments of Côte d'Ivoire *(Projet RETRO-CI*) and Thailand (*HIV/AIDS Collaboration*), CDC participates in studies designed to increase our understanding of the epidemiology of HIV-1 and HIV-2 infections and to facilitate prevention and care efforts in the host countries and the United States. Specific research areas include:

- ***Addressing mother-to-child (perinatal) HIV transmission*** in developing countries around the world, where 1,600 babies are born with HIV each day. Collaborative research by CDC and the Thai Ministry of Public Health found that a short course of AZT given late in pregnancy and during delivery reduced the rate of HIV transmission to infants of infected mothers by half and is safe for use in the developing world. The findings offer real hope to many developing nations that previously had no realistic options to prevent HIV-infected pregnant women from transmitting infection to their babies. CDC continues working with host countries and public health agencies worldwide to implement the short course AZT regimen as widely as possible. Researchers continue to study other factors of mother-to-child HIV transmission, such as the role of breast-feeding in HIV transmission in developing countries where breast-feeding is an important source of nutrition for newborns.

- ***Developing effective interventions for high-risk populations*** in Côte d'Ivoire and Thailand. Researchers have collaborated with host countries to implement and evaluate HIV prevention interventions among injection drug users, female sex workers and other populations at risk to

provide them with the knowledge and support needed to protect themselves from HIV infection. Many of these interventions have proven effective, particularly programs to increase condom use and treat sexually transmitted diseases among female sex workers.

- ***Identifying possible factors that may confer immunity to HIV.*** Collaborative researchers from CDC and the Thai and Ivorian Ministries of Public Health are working to determine how certain groups of female sex workers have remained uninfected despite numerous exposures to HIV. Initial research looked at possible genetic characteristics that might lead to immunity in certain individuals and is now focusing on the role the immune response to HIV may play in protection from infection. Researchers believe this research could have important implications for the future development of an HIV vaccine.

- ***Working to reduce the impact of HIV/AIDS in developing countries through practical treatment regimens.*** A joint study by CDC and the Côte d'Ivoire Ministry of Public Health found the first evidence that trimethoprim/sulfamethoxazole (TMP/SMX) (commonly referred to as cotrimoxazole, Bactrim or Septra) can significantly reduce the rate of death among HIV-infected tuberculosis patients in Africa. New data demonstrate a 48% reduction in mortality and a 44% reduction in hospitalizations among HIV-infected tuberculosis patients taking TMP/SMX. These dramatic findings offer a realistic option to help reduce the overwhelming death toll from HIV in the developing world.

- ***Conducting genetic analyses and collecting surveillance data on the genetic variations of HIV*** strains in host countries. Because of the increasing spread of HIV subtypes across international boundaries, these data may have implications for developing HIV vaccines and for promptly detecting and treating different HIV strains worldwide.

- ***Gathering surveillance data on HIV/AIDS trends*** among sentinel groups, such as female sex workers, pregnant women, STD patients, injection drug users, and children, to target, develop, and evaluate new interventions.

- ***Monitoring the natural progression of HIV infection*** to shed light on how to improve survival and quality of care for HIV-infected people, thus diminishing the personal and societal costs of the epidemic.

- ***Investigating risk factors***, including other diseases (e.g., STDs and tuberculosis), associated with HIV infection to identify links between these illnesses and to develop effective treatment strategies that can be applied globally.

- ***Investigating factors associated with heterosexual transmission of HIV***. Worldwide, more people have been infected through heterosexual contact than any other exposure. And in the United States, heterosexual transmission accounts for a growing percentage of both HIV infections and AIDS cases. Understanding the biomedical and behavioral aspects of heterosexual transmission is key to containing HIV in this country and around the world.