

AIDS Conference

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This year's 15th International AIDS Conference was held July 11 – 16 in the Thai capital city of Bangkok. Every two years, the conference brings together scientists, doctors and health care workers, political figures and HIV/AIDS activists from all over the world. Participants at the biennial meeting share the latest statistics and research findings, and they devise and review local and international strategies for fighting the unrelenting global AIDS epidemic that is killing over 8000 people every day.

The first International AIDS Conference was held in Atlanta, Georgia in 1985 and was attended by only 2,100 people, nearly all of them scientists and doctors. That conference featured medical and scientific presentations exclusively, and it focused on a better understanding of the new disease. In 1985 AIDS had only recently been recognized as serious problem. First detected in 1981, Acquired Immune Deficiency Syndrome (AIDS) was named the following year. French and American scientists first identified the human immunodeficiency virus (HIV), which causes the fatal disease by destroying the body's immune system, in 1984. In November 1985, 14,739 cases of AIDS had been reported to the U.S. Centers for Disease Control (CDC), including 7,418 fatalities. AIDS was just starting to become a global disease: the World Health Organization (WHO) reported several thousand cases in Europe, hundreds in Latin America, and only 15 cases in Asia. No cases of AIDS had yet been reported in Africa.

Much has changed since 1985. AIDS is no longer a mysterious new disease limited to specific (and stigmatized) populations. Rather, it has become a devastating global pandemic—AIDS has killed at least 20 million people since 1981, and an estimated 37.8 million people worldwide were living with AIDS or HIV in 2003. In the U.S., the CDC estimates that over half a million people have died of AIDS. But the disease has taken a particularly heavy toll on sub-Saharan Africa, where an estimated 25 million people are now suffering from AIDS or infected with HIV.

For the first time in its history, the International AIDS Conference was held in a developing Asian country, an acknowledgement of the looming epidemic in countries like China, Indonesia, Vietnam and Thailand. The Bangkok meeting was attended by nearly 20,000 people, a record number. However, most of the news at the event was not good: global HIV infections continued to rise in the two years since the last conference, and deaths from AIDS were unabated, with almost 3 million worldwide in 2003. It has become the norm for protest and controversy to eclipse scientific announcements at the conference, and this year was no exception: criticism of U.S. policies dominated much of the discussion in Bangkok.

Bad News in Bangkok

At the conference, participants heard the latest information about the sweeping HIV/AIDS pandemic. The Joint United Nations Programme on HIV/AIDS (UNAIDS) released its *2004 Report on the Global AIDS Epidemic* on July 6 in order to coincide with the conference. The report painted a grim picture: while Africa continues to be decimated by AIDS, new HIV infections are increasing globally and Asia is on the verge of a major epidemic.

According to the UNAIDS report, new HIV infections in Asia rose to an estimated 1.2 million in 2003, accounting for about a quarter of the 4.8 million new infections worldwide. (The rise in HIV infections globally was the largest single-year increase in the history of the epidemic.) In 2003, a record 7.4 million Asians were living with HIV/AIDS; the epidemic is still largely confined to injection drug users, homosexual and bisexual men, and sex workers and their clients. However, the rapid spread of HIV in Asia is especially significant because about 60% of the world's population live there. Once the virus breaks into the general population and infection rates in Asia rise above a threshold level of about 1%, "we will see an epidemic the likes of which we never imagined, despite what has happened in Africa," said Kathleen Cravero, deputy executive director of UNAIDS, at a Bangkok news conference.

Countries in the southern half of the African continent (sub-Saharan Africa) continue to bear the brunt of the epidemic's onslaught, the UN report shows. 2/3 of people with HIV/AIDS live in sub-Saharan Africa, and 2.2 million people there died of AIDS last year, accounting for about 75% of the 3 million global AIDS deaths in 2003. HIV infections show no signs of slowing: 2003 saw an estimated 3 million new infections in sub-Saharan Africa. Over 17% of the population is infected with HIV in 7 sub-Saharan countries; HIV infects over 35% of the population in Botswana and Swaziland. Largely because of the ravaging epidemic, life expectancy at birth in 2000 has plunged to below 40 years in 7 African countries (from 33.9 years in Zimbabwe to 38.5 years in Mozambique) according to a separate report by the United Nations Development Program.

Little New Science

Few new scientific advances were reported at this year's conference. An AIDS cure or HIV vaccine remain elusive, but scientists hope that microbicides (chemicals that kill microscopic organisms including viruses) will at least help to slow the spread of HIV in women. Women are especially vulnerable to HIV infection because they often have no control over whether their male sex partners wear condoms or have additional sex partners. "Most of the women and girls, as much in Asia as in Africa, don't have the option to abstain when they want to," said Cravero during her news conference. "Women who are victims of violence are in no position to negotiate anything, never mind faithfulness and condom use." Women make up at least half of the world's HIV/AIDS sufferers.

Zeda F. Rosenberg, chief executive of the International Partnership for Microbicides, reported on the latest development and testing of microbicides at the Bangkok

conference. Current research indicates that combinations of three microbicides (like the "cocktails" of drugs now used to treat HIV) will be most effective in preventing infection. One drug would simply kill the virus in the vagina and cervix; one would prevent HIV from attaching to cells; and a third drug would block an enzyme (proteins involved in biochemical processes) called "reverse transcriptase" that the virus needs to replicate itself. These three microbicides would be combined in a cream or gel, or put into a sponge or a ring, that women can apply themselves.

New microbicides will be tested with over 28,000 women in the U.S., Asia and Africa. Some of the testing is currently underway, with more soon to come, and combination microbicides could be available to women in 5 to 10 years. In Bangkok, Rosenberg told the *New York Times* that "Microbicides will not be magic bullets, and microbicides probably never will be as effective as condoms." However, research into microbicides is crucial to the HIV/AIDS fight because "even a partially effective microbicide could save millions of lives."

There was another significant scientific development at the Bangkok meeting, this one on the AIDS/HIV treatment front. Scientists working for Doctors Without Borders, the non-profit medical relief group known by its French name Médecine Sans Frontières (MSF), announced the results of a large-scale study into the effectiveness of fixed-dose combinations (FDCs) of generic antiretroviral drugs. FDCs combine generic versions (a generic drug contains the same chemicals, but is not distributed under a brand name) of three or more antiretrovirals (drugs that fight viruses by inhibiting their replication and other activities) into a single pill that is taken twice a day. Patients using separate, brand-name antiretroviral drugs often must take dozens of pills throughout the day. Such multi-pill regimens are known to reduce compliance, especially in countries without a functioning health care system to supervise patients under treatment. Moreover, brand-name drugs are much more expensive than generics, putting them out of reach for most HIV/AIDS patients in poor countries.

MSF's study, the largest yet conducted into FDC generics, found that the drugs were just as effective and safe as brand-name antiretroviral drug treatments. (A smaller study, published by the *Lancet* medical journal earlier in July, reported similar findings.) MSF distributed generics FDCs produced in India to 6,861 adult HIV/AIDS patients in 21 Asian, African and Central American countries. For these patients, probability of survival after one year of treatment was 82.4%. In about half of the patients receiving FDCs, CD-4 cell counts rose by an average of about 137 cells per year. (CD-4 cells are a kind of white blood cell that is critical to the functioning of the body's immune system; HIV destroys these cells. Uninfected people have a CD-4 cell count of between 600 - 1,500 cells; when HIV infected people's CD-4 cell count drops below 200, they are diagnosed with AIDS and are at serious risk of the opportunistic infections that kill AIDS victims.) Only 51 of the patients receiving FDCs (less than 1%) experienced side effects serious enough to require switching them to other drugs, MSF reported.

All of MSF's results with FDC generics were comparable to results with HIV/AIDS patients taking separate, brand-name antiretroviral drugs in developed, industrial

countries. Alexandra Calmy, an infectious disease specialist and AIDS advisor to MSF, told the *New York Times* that "we were convinced [the FDC generics] would work or we would not have done [the study]. It was common sense." But the intensive study reported at the Bangkok conference was necessary to convince international groups to recommend the use of generic FDCs for treating HIV/AIDS patients worldwide. "We found a very robust outcome, and the findings are important," said Calmy.

U.S. Delegates Cut Back, Global Fund Undercut

The controversies in Bangkok began even before the conference started, when the U.S. announced that it was slashing the number of delegates allowed to attend this year's meeting. The U.S. sent 236 delegates to the 2002 14th International AIDS Convention in Barcelona, Spain. This year, however, the U.S. sent only 50 delegates to Bangkok, less than a quarter of the previous number. The decision came after many American scientists had already been accepted to present research papers and posters at the conference. Several planned workshops had to be canceled and dozens of presentations were withdrawn from the program. Cutbacks in the U.S. delegation were ordered by Health and Human Services (HHS), the Presidential Cabinet-level department that oversees the CDC and the National Institutes of Health (NIH). Other departments sending delegates to the convention, such as the Departments of State, Defense, and Veterans Affairs, were not affected.

At the 2002 Barcelona AIDS conference, HHS Secretary Tommy G. Thomson gave a speech that was drowned out by the ruthless jeers of Bush administration opponents. However, HHS insisted that this year's cuts were simply part of more general strategy to save money by reducing travel to scientific conferences. A HHS spokesperson told the *Washington Post* that decreased U.S. participation "is not exclusive to this conference—this is for all international conferences. A lot of it was simply looking at expenses." Scientists and AIDS activists were dismayed by the decision. It is "demoralizing," an unnamed AIDS scientist at the NIH told the *Washington Post*, "not [to] be able to present your findings because you're not allowed to go to the meeting." Peter Piot, who heads the United Nations program on HIV/AIDS, pointed out that American attendance "is a big deal for the quality of the conference." He told the *Washington Post* that "the largest group in the world in terms of AIDS expertise comes from the U.S., so it's important this expertise is at the conference."

Throughout the week in Bangkok, protestors decried another U.S. initiative, the President's Emergency Plan for AIDS Relief (PEPFAR) promoted by the Bush Administration. Under the plan, \$15 billion in grants will be distributed to HIV/AIDS programs in 15 individual nations over 5 years. At least 1/3 of the money spent on HIV prevention (about 20% of the total) must be used to fund sexual abstinence programs, and the plan will not support any needle exchange or other programs aimed at injection drug users. Moreover, all antiretroviral drugs purchased with PEPFAR funds must be approved by the U.S. Food and Drug Administration (FDA). No generic HIV/AIDS medicines have yet been FDA approved. The U.S. government has donated an additional \$1 billion to the Global Fund to Treat AIDS, Tuberculosis, and Malaria, established by

the UN in 2002. The Global Fund gives grants to HIV/AIDS prevention and treatment programs in any country.

In a speech at the conference, Bush Administration official and U.S. global AIDS coordinator Randall L. Tobias defended the American AIDS relief plan. Tobias is the former chairman and chief executive officer of the pharmaceutical corporation Eli Lilly and Co., maker of the anti-depressant Prozac and other drugs. Protestors at the meeting waved signs and chanted for about 10 minutes before finally allowing Tobias to speak. "At this point, perhaps the most critical mistake is to allow this pandemic to divide us," he told the conference. "We are striving toward the same goal—a world free of HIV/AIDS." Regarding controversial sexual abstinence programs, Tobias said that "Abstinence works. Being faithful works. Condoms work. Each has its place."

Critics were unconvinced. At a news conference in Bangkok, Dutch Princess Mabel van Oranje of the philanthropic Open Society Institute pointed out that "More than half of all HIV cases right now occur among married women. Being faithful is not an option. Abstinence is not at all an option." Stephen Lewis, the UN special envoy on HIV/AIDS in Africa, told *Science* that "There is room for PEPFAR. But I do have a deep concern when people fail to see the Global Fund is the centerpiece." UN Secretary General Kofi Annan also critiqued the U.S. plan. "The Global Fund is ready to go. If individual governments begin to set up their own initiatives, they start from scratch," he said during an interview with the BBC. "The money that they hold will not be spent for a long time."

2006 AIDS Conference in Toronto

The next International AIDS Conference will be held in Toronto, Canada. Barring any radical scientific breakthroughs or radical changes in international policies, more bad news is likely to greet participants at the 2006 meeting: there will be about 10 million more HIV infections and 6 million more AIDS deaths by then if current rates hold.

Further Reading:

"Record Numbers Infected With HIV." Ellen Nakashima. *Washington Post*, July 7, 2004, page A1.

"UN Report Shows Concern Over Rise of HIV in Asia." Lawrence K. Altman. *New York Times*, July 7, 2004, page A6.

"U.S. Cuts Number of Delegates to World AIDS Meeting." David Brown. *Washington Post*, July 9, 2004, page A17.

"Tests to Begin on New Drugs to Protect Women From Contracting H.I.V." Lawrence K. Altman. *New York Times*, July 14, 2004, page A11.

"U.S. Official Defends Focus of AIDS Prevention Policy." Ellen Nakashima. *Washington*

Post, July 14, 2004, page A17.

"Fixed-Dose Mixtures of Generic AIDS Drugs Prove Effective." Lawrence K. Altman. *New York Times*, July 15, 2004, page A3.

"International AIDS Meeting Finds Global Commitment Lacking." Jon Cohen. *Science*, July 23, 2004, page 470.

Internet Resources:

"UNAIDS: The Joint United Nations Programme on HIV/AIDS." (www.unaids.org) Website of the UN HIV/AIDS program. Contains resources and information about the global epidemic, including the 2004 report in PDF format.

"WHO: XV International AIDS Conference, Bangkok 2004." (www.who.int/3by5/bangkok/en/) The WHO's website for the 2004 Bangkok conference, includes documents and information about the WHO's initiative to treat 3 million people with HIV/AIDS by 2005.

"Doctors Without Borders/Médecine Sans Frontières (MSF) U.S. Web Site" (www.doctorswithoutborders.org) Website of the worldwide medical relief charity. Includes information about the group's work with HIV/AIDS patients.

Keywords for electronic searches:

HIV, AIDS, AIDS epidemic in Asia, microbicide, FDCs, antiretroviral drugs, generic AIDS drugs, CD4 cells, helper T cells