UNC, Globalization and AIDS

Myron S. Cohen, MD

J. Herbert Bate Distinguished Professor
Medicine, Microbiology and Public Health
Director, Institute for Global Health & Infectious Diseases
Associate Vice Chancellor for Global Health
### Adults and children estimated to be living with HIV, 2007

**Total: 33.2 (30.6 – 36.1) million**

<table>
<thead>
<tr>
<th>Region</th>
<th>Estimated 2007</th>
<th>95% Confidence Interval</th>
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</thead>
<tbody>
<tr>
<td>North America</td>
<td>1.3 million</td>
<td>[480 000 – 1.9 million]</td>
</tr>
<tr>
<td>Caribbean</td>
<td>230 000</td>
<td>[210 000 – 270 000]</td>
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<tr>
<td>Latin America</td>
<td>1.6 million</td>
<td>[1.4 – 1.9 million]</td>
</tr>
<tr>
<td>Western &amp; Central Europe</td>
<td>760 000</td>
<td>[600 000 – 1.1 million]</td>
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<tr>
<td>Eastern Europe &amp; Central Asia</td>
<td>1.6 million</td>
<td>[1.2 – 2.1 million]</td>
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<tr>
<td>Middle East &amp; North Africa</td>
<td>380 000</td>
<td>[270 000 – 500 000]</td>
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<tr>
<td>Sub-Saharan Africa</td>
<td>22.5 million</td>
<td>[20.9 – 24.3 million]</td>
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<tr>
<td>East Asia</td>
<td>800 000</td>
<td>[620 000 – 960 000]</td>
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<tr>
<td>South &amp; South-East Asia</td>
<td>4.0 million</td>
<td>[3.3 – 5.1 million]</td>
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<tr>
<td>Oceania</td>
<td>75 000</td>
<td>[53 000 – 120 000]</td>
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**December 2007**
HIV Prevention Opportunities

Cohen and Kashuba, 2008, in press

- **UNEXPOSED**
  - Behavioral, Structural
  - Circumcision
  - Condom

- **EXPOSED**
  - Vaccine, Topical Mic., PrEP (precoital/coital)

- **EXPOSED**
  - Vaccine PEP (postcoital)

- **INFECTED**
  - Treatment Of HIV
  - Reduced Infectivity

- **YEARS**
- **HOURS** within 72h - 28d
- **YEARS**
HPTN 052: Study Objectives

- To determine whether treatment of HIV stops sexual transmission
- To determine whether earlier treatment improves individual health
Stable, healthy, serodiscordant couples, sexually active
CD4 count: 350 to 550 cells/mm³

Primary Transmission Endpoint
Virally linked transmission events

Primary Clinical Endpoint
WHO stage 4 clinical events, pulmonary tuberculosis, severe bacterial infection and/or death
The HPTN 052 Timeline:
NOT the “Fast Track”

- UNC research toward prevention of HIV: 1981-
- UNC Search for “biological plausibility” 1987-
- HPTN 052 protocol development: 2000-01
- **HPTN 052 Drug Procurement: 2002-04**
- HPTN 052 Pilot: 2005-07
- HPTN 052 Enrollment: 2007-10
HPTN 052 Enrollment
(Total Enrollment: 1763 couples)

- Americas: 278
  - U.S.
- Africa: 954
  - Botswana
  - South Africa
  - Zimbabwe
  - Malawi
  - Thailand
- Asia: 531
  - India
  - Kenya
TIDZIWE CENTRE
UNC/LCH Research, Care & Training Centre

A collaboration between University of North Carolina at Chapel Hill, Lilongwe Central Hospital and Ministry of Health & Population
“The Board recommends that the results of the trial be announced as soon as possible”
The HPTN0 52 trial announced on 12 May 2011 that if an HIV-positive person adheres to antiretroviral therapy regimen, the risk of transmitting the virus is reduced by 96%.

UNAIDS 2011 AIDS at 30
SMARTER, FASTER, BETTER CAMPAIGN

“HPTN 052 is a game changer”

Michel Sidibe
Executive Director of UNAIDS
HPTN 052 and

Early H.I.V. Therapy Sharply Curbs Transmission

By DONALD G. McNEIL Jr
Published: May 12, 2011

On Thursday, Dr. Anthony Fauci and Dr. Myron Cohen, an AIDS specialist at Duke University in North Carolina at Chapel Hill and the study’s leading investigator, reported at a scientific meeting in Long Beach, Calif., that 24 percent of the people assigned to the treatment group had acquired the virus from their partner by 96 percent.

The discovery of a near-perfect way to halt sexual transmission of the AIDS virus has the potential to change the way in which nations cope with the epidemic. Researchers say it could make the troubling issues of cost and access to treatment and care irrelevant.

When Treatment Is Also Prevention

New Cases of AIDS Hit Plateau

Dr. Bernhard Schwartländer, the agency’s chief of strategy, said AIDS had seen a “game-changing year in science,” noting especially a study showing that people on drugs lowered by 96 percent their chances of passing on the infection. And he highlighted areas where progress had been made.

Still Fighting Against AIDS

This month, a randomized clinical trial — the gold standard in medical research — showed that patients who started taking antiretroviral drugs when they had undetectable levels of virus in their bloodstream were less likely to pass the virus to their sexual partners by 96 percent.

No Time to Let Up on the Fight

of the estimated 34 million people infected with the virus could be treated. A study found that if an infected person was treated with drugs immediately, the risk of transmission to an uninfected partner was cut by 96 percent. The upfront cost to everyone would be huge, but in the long run it could well save money by greatly reducing the number of people who become infected and need treatment.

Drugs Stop AIDS. Take Your Medicine.

THERE is now, for the first time, hard clinical evidence of an effect that AIDS doctors have suspected for years: If you are H.I.V.-positive, being on antiretroviral drugs will probably save not only your life, but also the lives of your sexual partners.

By DONALD G. McNEIL Jr
Published: May 21, 2011

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The end of AIDS?

How 5 million lives have been saved, and a plague could now be defeated
Prevention of HIV-1 Infection with Early Antiretroviral Therapy

Clinton speech November 8, 2011 at US National Institutes of Health
Bruce Alberts, Editor of Science explains the choice of this work

“The results have galvanized efforts to end the world’s AIDS epidemic in a way that would been inconceivable even a year ago”