

Challenges and Opportunities in HIV Prevention

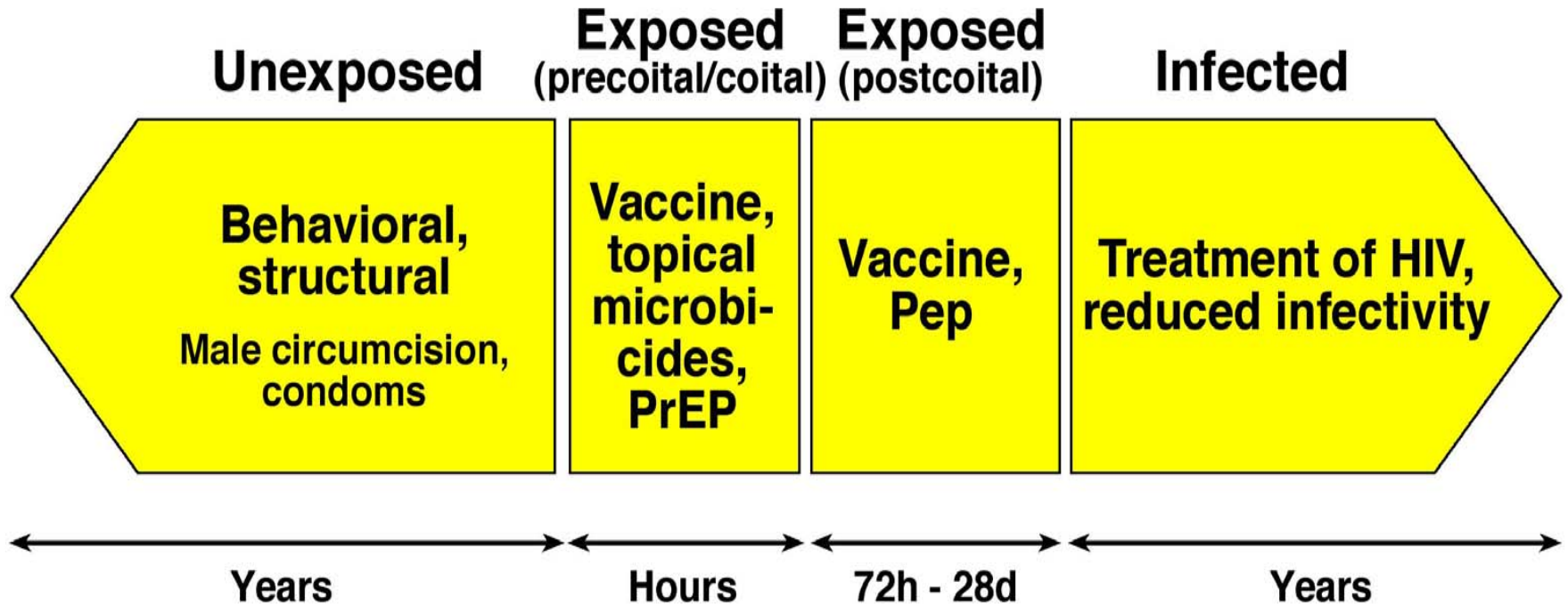
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March 28, 2011



Know the Epidemic in the Community

Opportunities for Preventing HIV Infection





NATIONAL HIV/AIDS
STRATEGY FOR THE
UNITED STATES

JULY 2010



- Reducing HIV incidence
- Increasing access to care and optimizing health outcomes
- Reducing HIV-related health disparities

HIV Prevention Research: Guiding Principles

- **Multiple strategies needed to assemble a well-rounded “prevention toolkit.”**
- **No one prevention strategy will be 100% effective, appropriate to or accepted by everyone.**

Approaches to HIV Prevention

Validated Approaches

- Clean syringes (i.e. needle exchange programs)
- Condoms, and other barrier methods
- Education and behavior adaptation
- Treatment/prevention of drug/alcohol abuse
- Interruption of mother-to-child transmission
- Circumcision
- HIV/STI Testing

Research Needed

- Topical microbicides
- Pre-exposure prophylaxis
- Vaccines
- Antiretroviral treatment as prevention (Test and Treat)
- Integrated combination prevention strategies

Selected HIV Prevention Strategies Under Development

■ ARVs as Prevention

- Microbicides
- Pre-Exposure Prophylaxis (PrEP)
- “Test and Treat” / TLC +

Next Steps

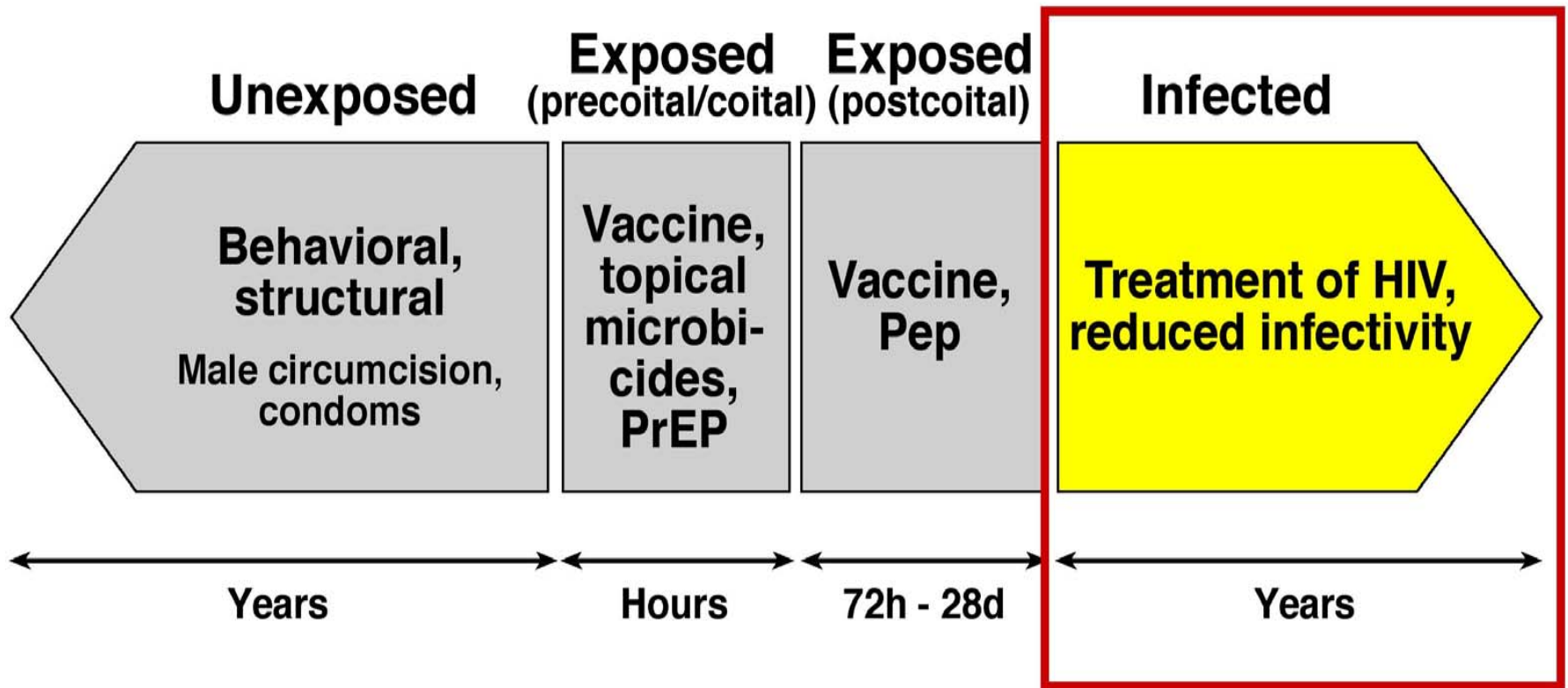
Topical Microbicides: Future Directions

- **Complete VOICE – move 1% Tenofovir gel to licensure**
- **Expand efforts to develop rectal microbicides**
- **Devise more acceptable, less behaviorally sensitive delivery methods**
- **Explore combinations**
 - Alternative microbicide strategies e.g., modulation of female reproductive tract (FRT) homeostasis
 - Vaccines and microbicides?
- **Evaluate novel clinical trial methodologies**

PrEP Future Directions

- **Now that the concept is proven – complete VOICE!**
- **Engage partners to define adherence strategies and approaches to social marketing**
- **Develop and test combinations – pills and gels?**
- **Devise means of incorporation of ARVs as prevention into combination packages**

Opportunities for Preventing HIV Infection



Selected Research Issues Related to the Voluntary “Test and Treat” Approach

- **Universal testing**
- **Relationship of the stage of HIV infection to efficiency of transmission**
- **Efficacy of ART in preventing HIV transmission**
- **Drug resistance**
- **Behavioral “disinhibition”**
- **Benefit to the individual**
- **Cost-effectiveness for society**

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ART Reduces the Risk of Heterosexual HIV-1 Transmission in HIV-1 Sero-discordant African Couple Study (Abstract #136)

Deborah Donnell, Fred Hutchinson Cancer Research Center

ART in HIV-infected partner	Linked Transmissions	Person-years of follow-up	HIV Seroincidence
Post ART initiation	1	256	0.39 (95%CI 0.09 to 2.18)
No ART	102	4851	2.23 (95%CI 1.84 to 2.70)

HIV Transmission Risk Among Serodiscordant Couples: A Retrospective Study of Former Plasma Donors in Henan, China

Lu Wang, MD, PhD,* Zeng Ge, BS,*† Jing Luo, BS,*‡ Duo Shan, BS,*† Xing Gao, MD, PhD,*
Guo-wei Ding, MD,* Jian-ping Zhou, BS,§ Wen-sheng He, BS,§ and Ning Wang, MD, PhD*

COMMENTARY

HIV Treatment as Prevention: To be or not to be?

Myron S. Cohen, MD

“Second, and perhaps most important, transmission events occurred with equal frequency in couples regardless of whether the partner was provided free ART.”

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U.S. Department of Health and Human Services

NIH News

National Institutes of Health

June 8, 2009

National Institute of Allergy and Infectious
Diseases (NIAID)

<http://www.niaid.nih.gov/>

Starting Antiretroviral Therapy Earlier Yields Better Clinical Outcomes

*Interim Review Leads to Early End of Clinical
Trial in Haiti*

- **~4-fold increased risk of death for patients deferring ART until CD4 count dropped below 200 vs. initiating ART at CD4 count between 200-350 (n=816)**

START

**HIV-infected individuals who are ART-naïve
with CD4⁺ count > 500 cells/mm³**

Early ART Group

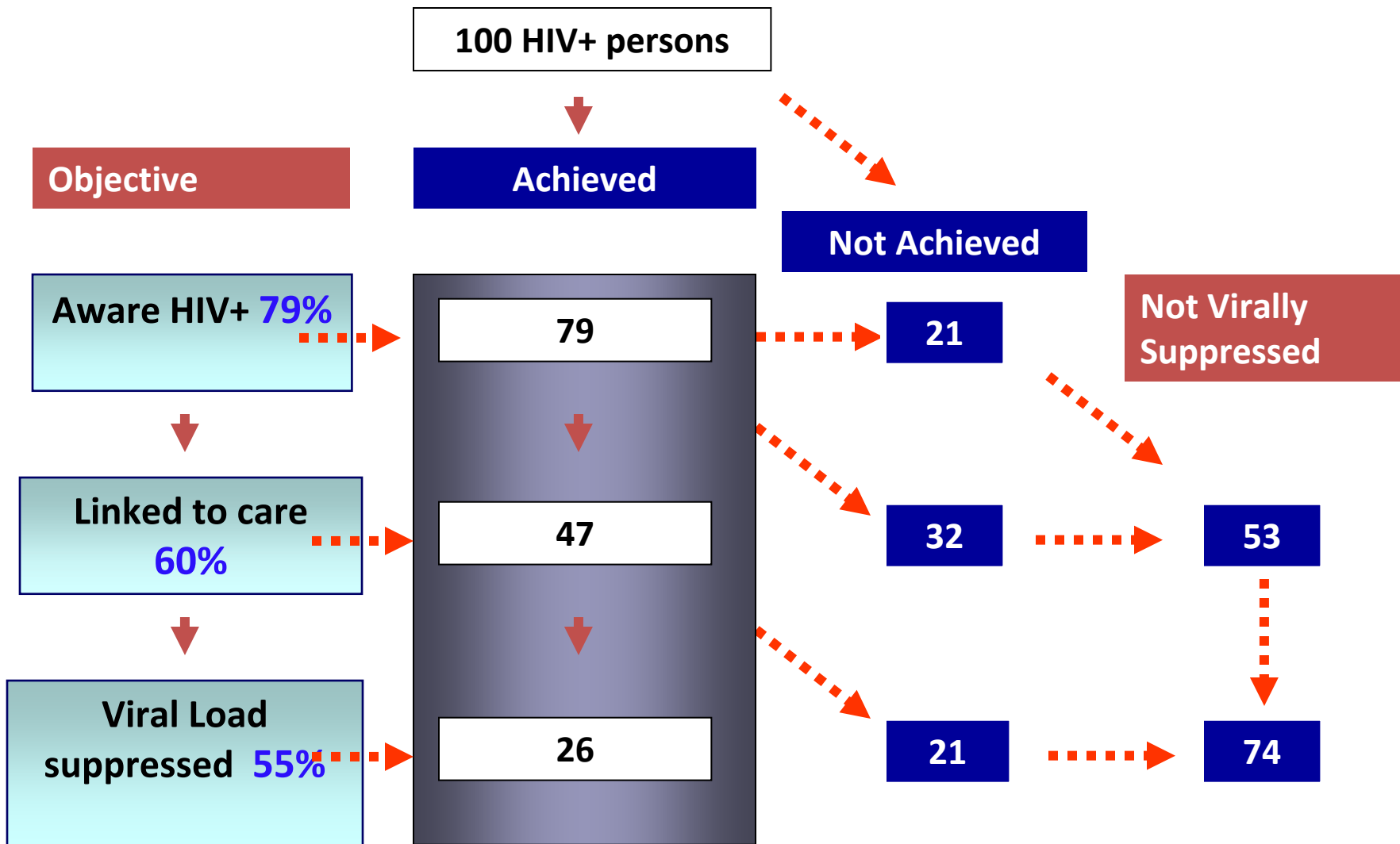
**Initiate ART immediately
following randomization**

Deferred ART Group

**Defer ART until the CD4⁺ count
declines to < 350 cells/mm³ or
AIDS develops**

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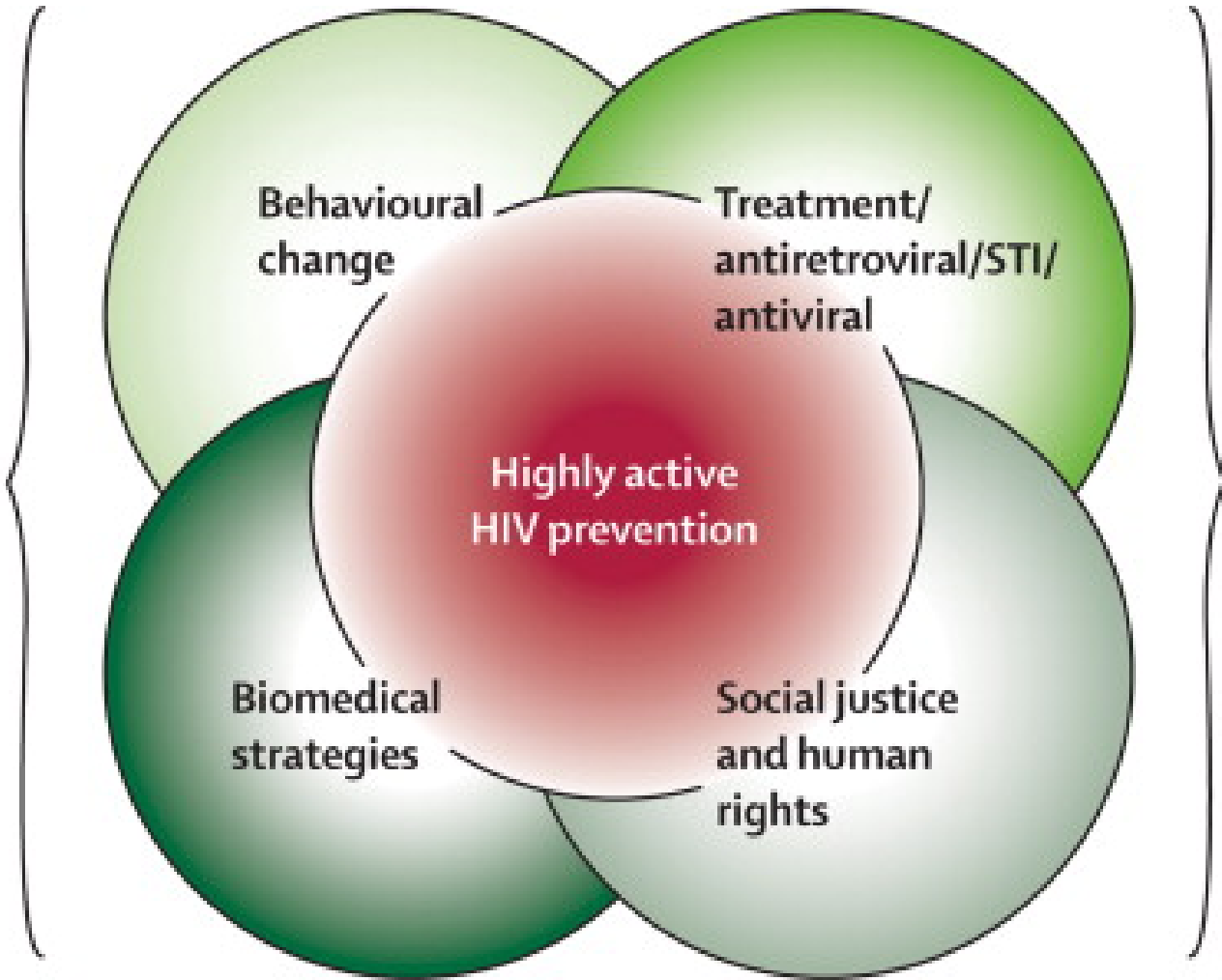


Overall: ~26% of HIV+ persons were in care and estimated to have a viral load <500 copies/ml

HPTN 065 update

- **HPTN 065 (TLC-Plus): A study to evaluate the feasibility of an enhanced test, link to care, plus treat approach for HIV prevention in the US**
 - Study open to accrual: September 2010
 - Enrolling: March 2011
 - Anticipated results: 1Q 2014

Leadership and scaling up of
treatment/prevention efforts



Community involvement

**Our Common Goal:
Controlling and Ultimately
Ending the HIV/AIDS
Pandemic**

