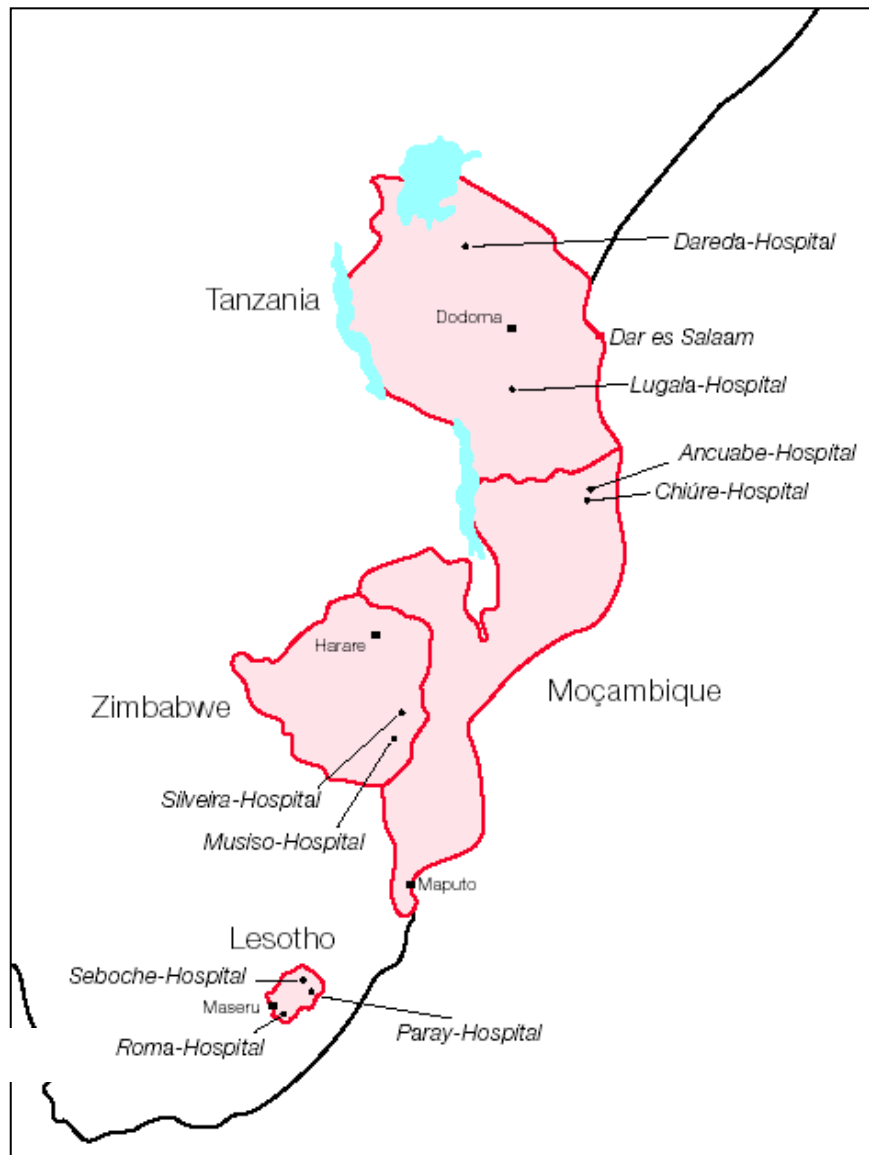


# Creating an *Aids-free* generation...

Jochen Ehmer, MD



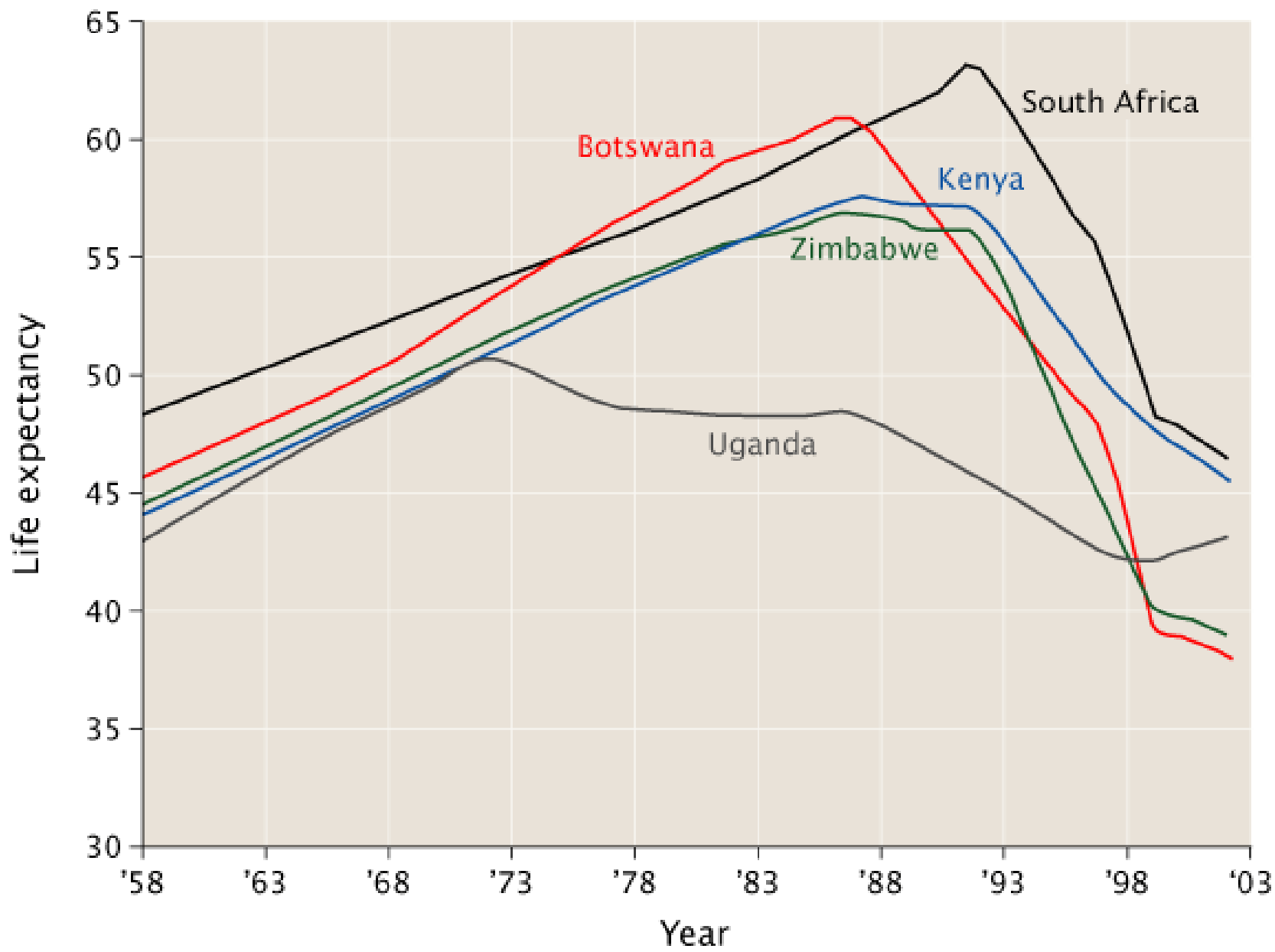


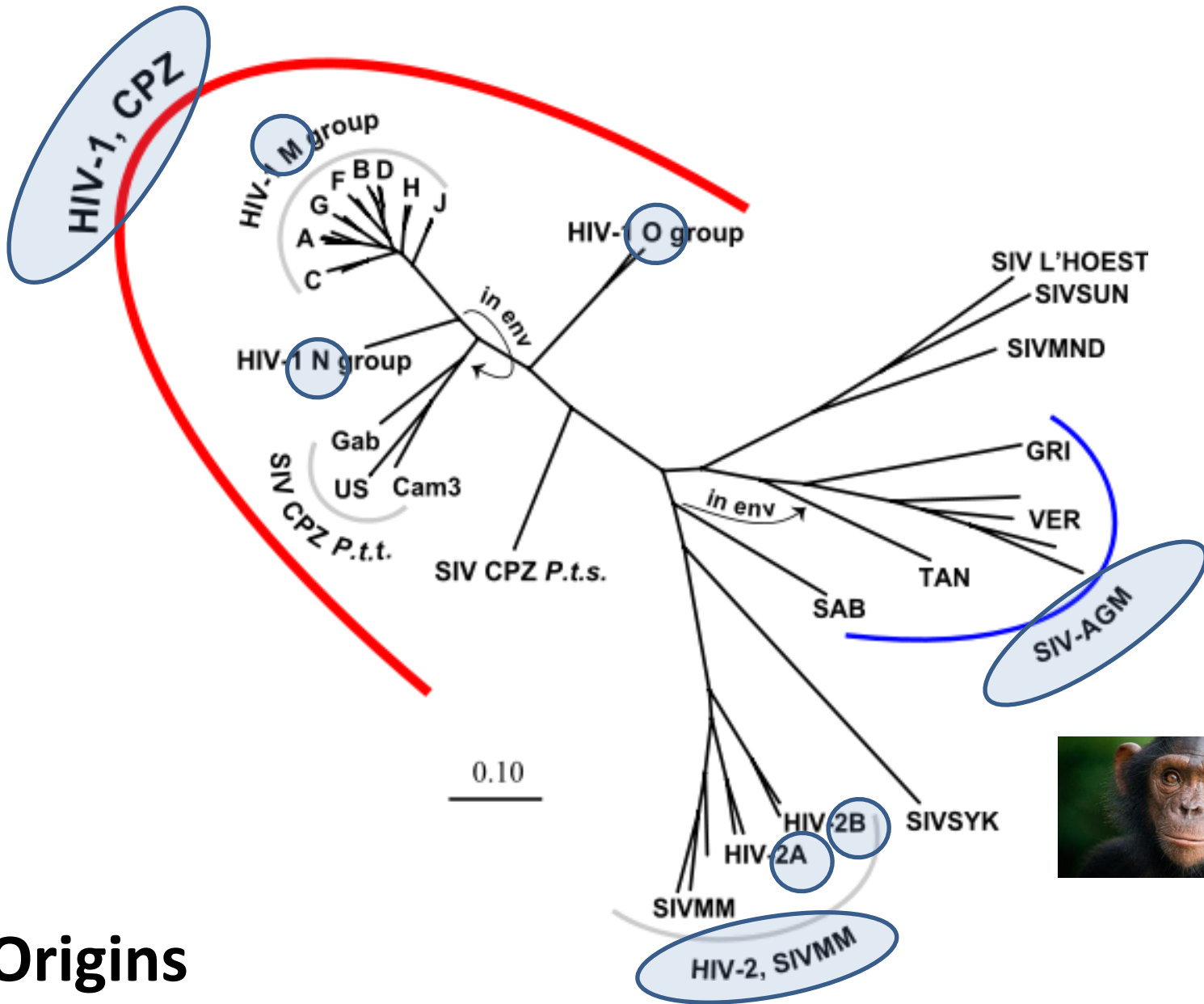
# SOLIDAR MED

“Scientific advances and their successful implementation have brought the world to a tipping point in the fight against AIDS.

The United States believes that by making smart investments based on sound science and a shared global responsibility, we can save millions of lives and achieve an AIDS - free generation.»

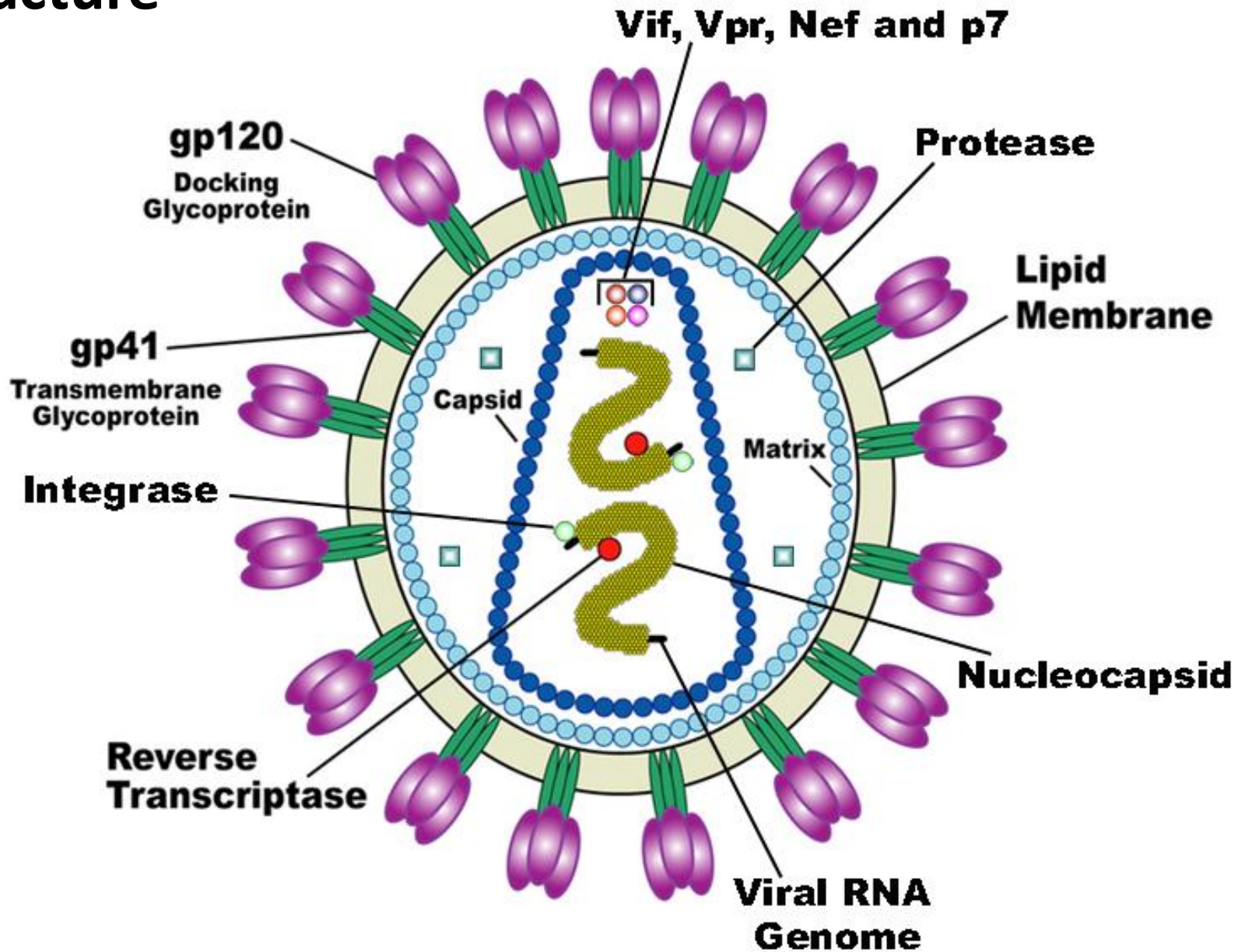
Hillary Clinton, November 29th 2012





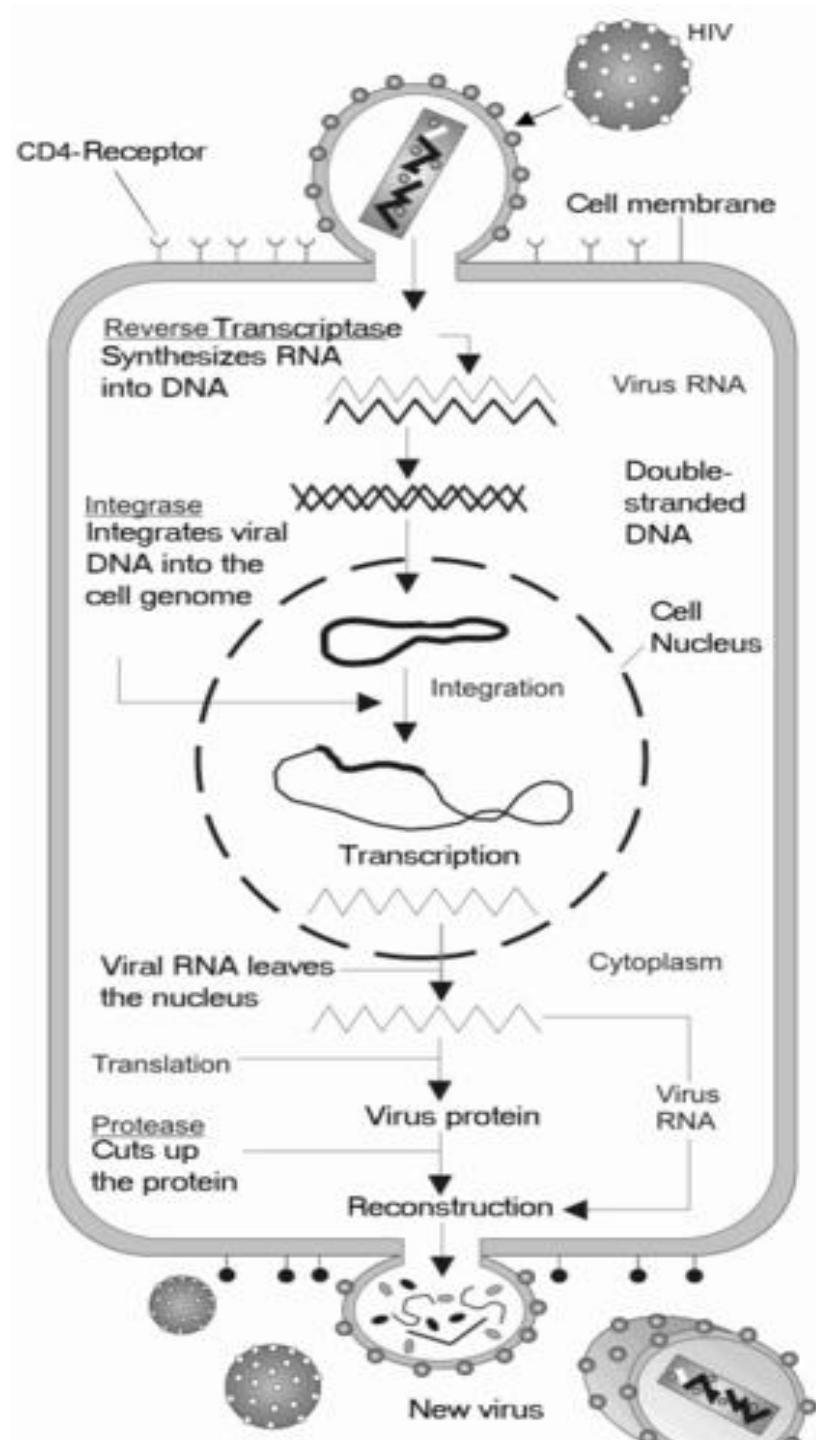
# Origins

# Structure

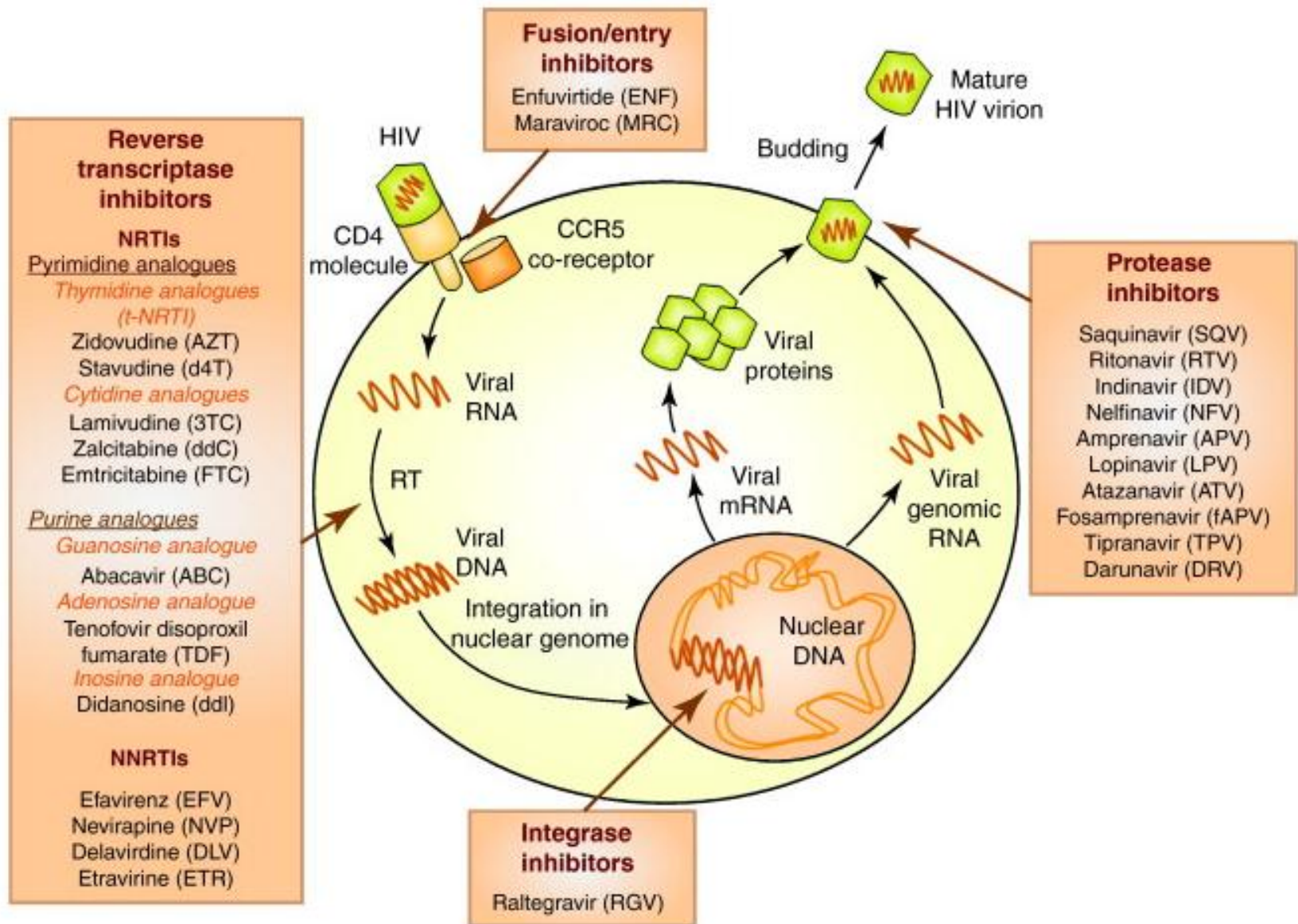


# Replication

(in CD4 – Lymphocytes)

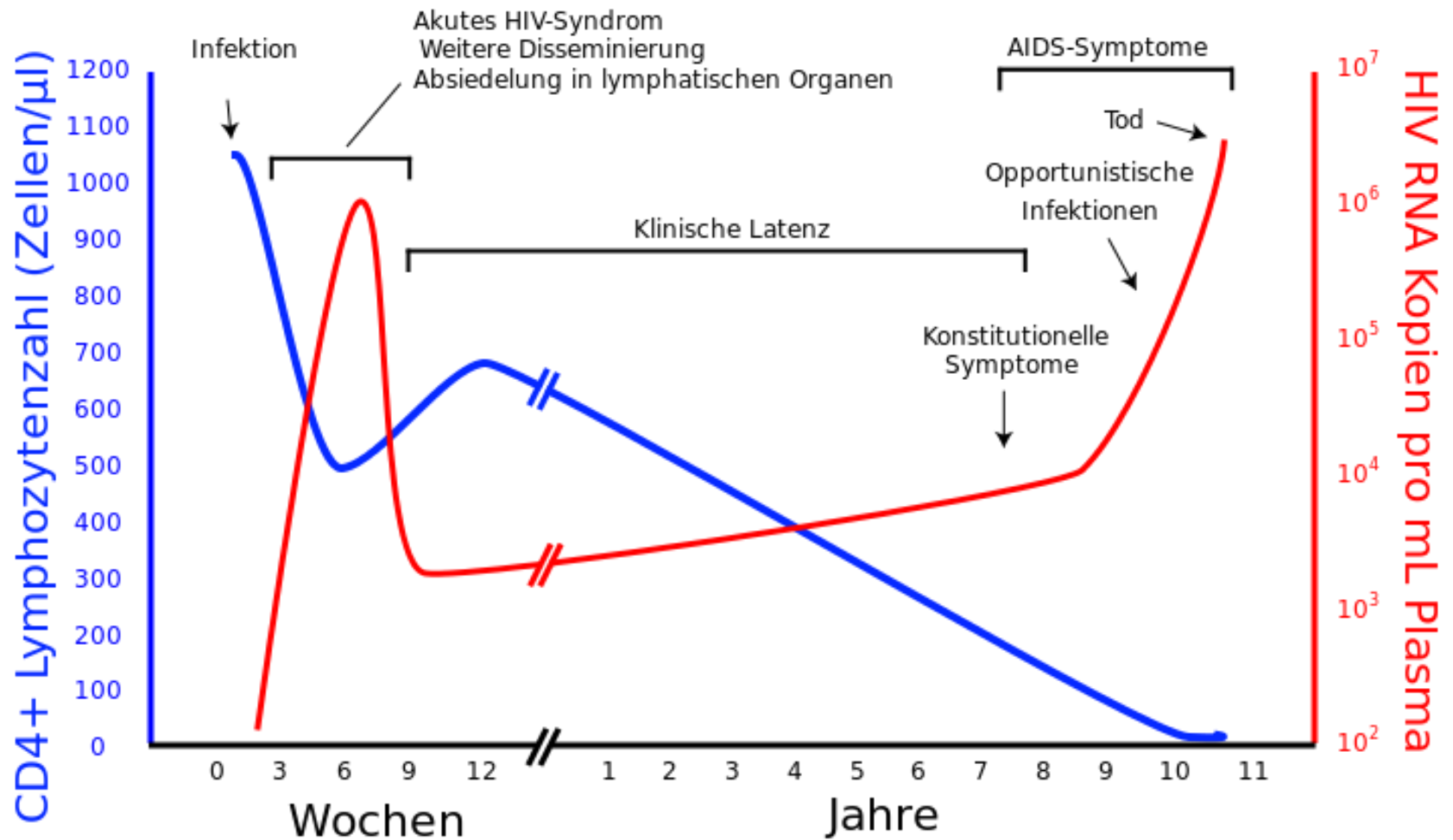


# Treatment



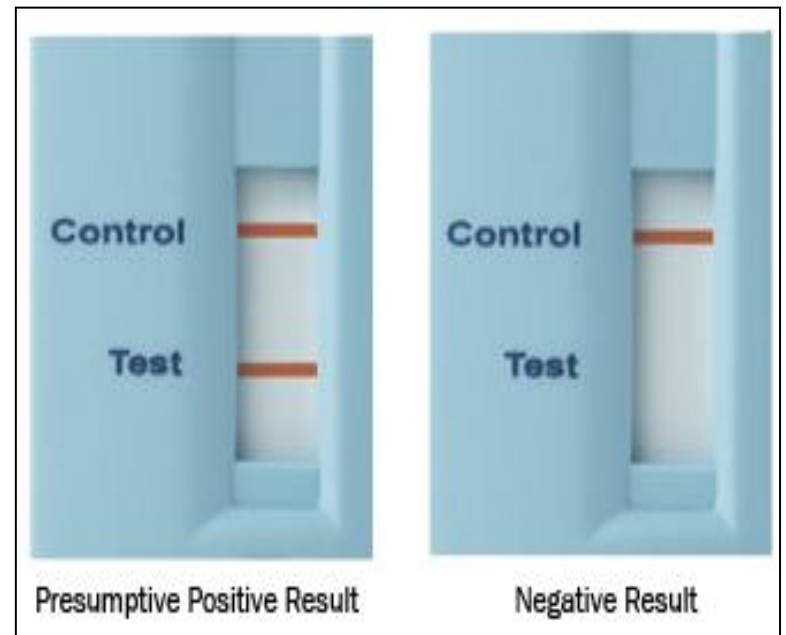


# Immune Response



# Diagnostics

- **Viral Load** = very accurate
- **CD 4** = accurate
- **Clinical stage** = not very accurate
- **Scores** and combinations...



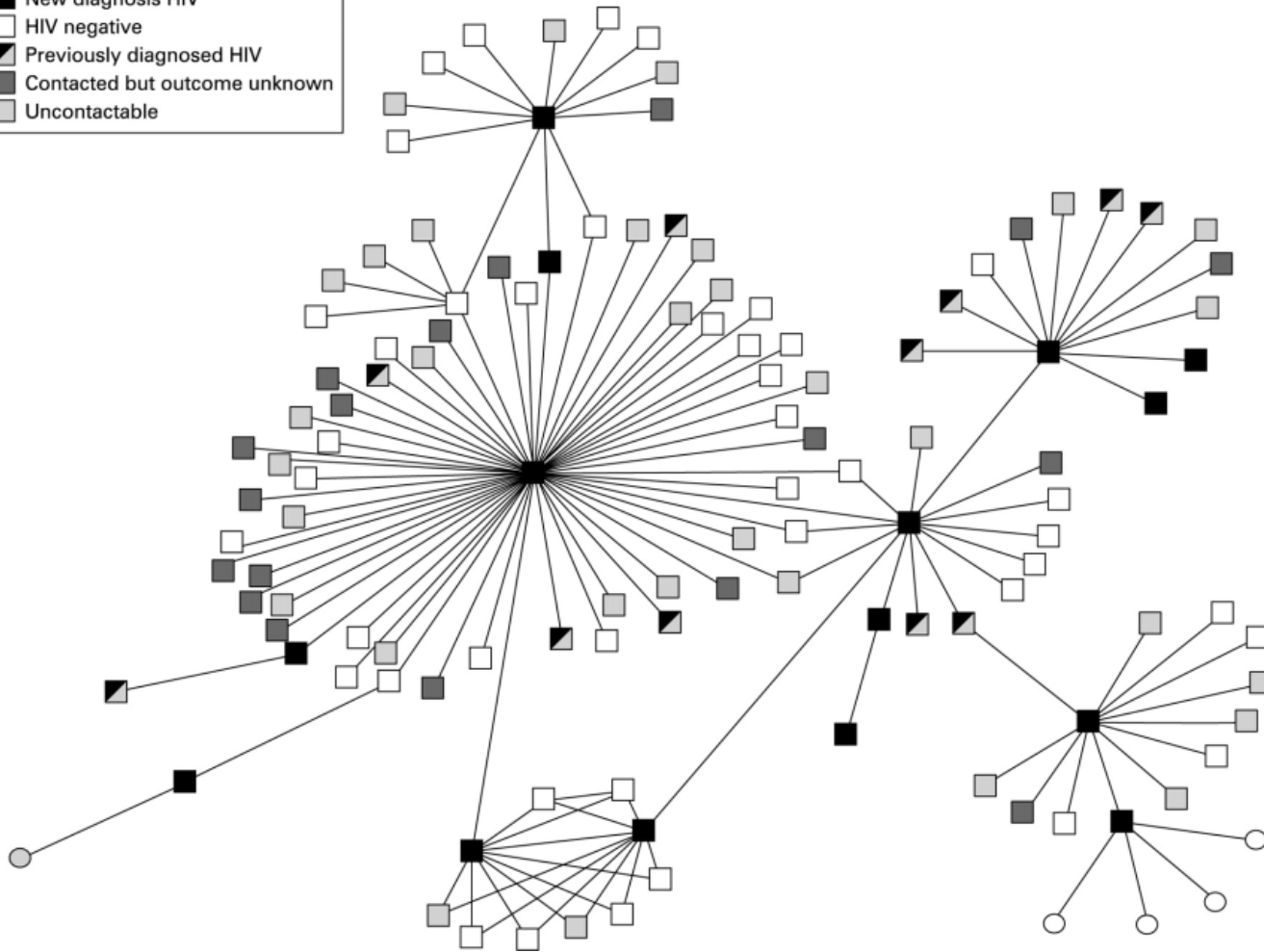
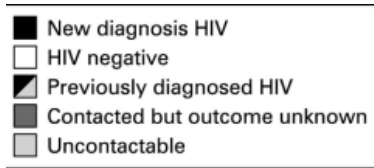
# Transmission

	Nr of transmissions per 1'000 acts
Oral intercourse	0.1 - 0.5
Vaginal intercourse	0.1 - 3
Anal intercourse	0.5 -30
Pregnancy	250 - 450
Needle sharing (percutaneous)	3
Blood transfusion	900

Rates of HIV-1 Transmission per Coital Act, by Stage of HIV-1 Infection, in Rakai, Uganda; Journal of Infectious Diseases, M. Waver, 2005:

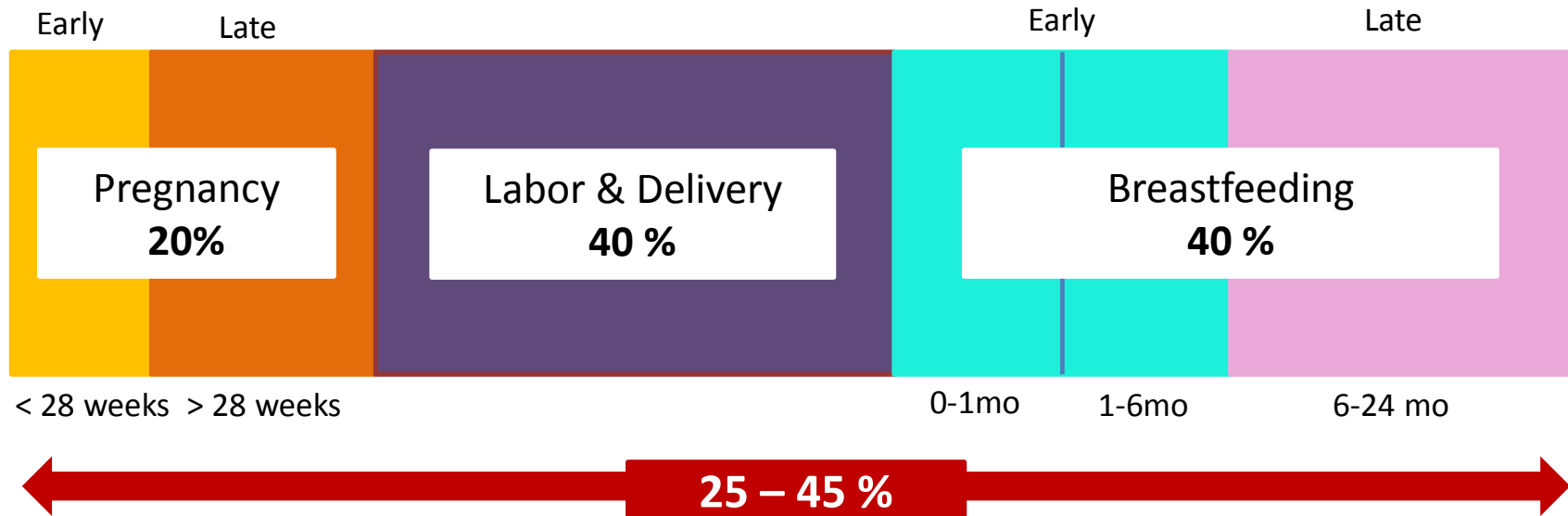
**Average 8/1'000 coital acts**

# Know your epidemic



## Antenatal

## Postpartum

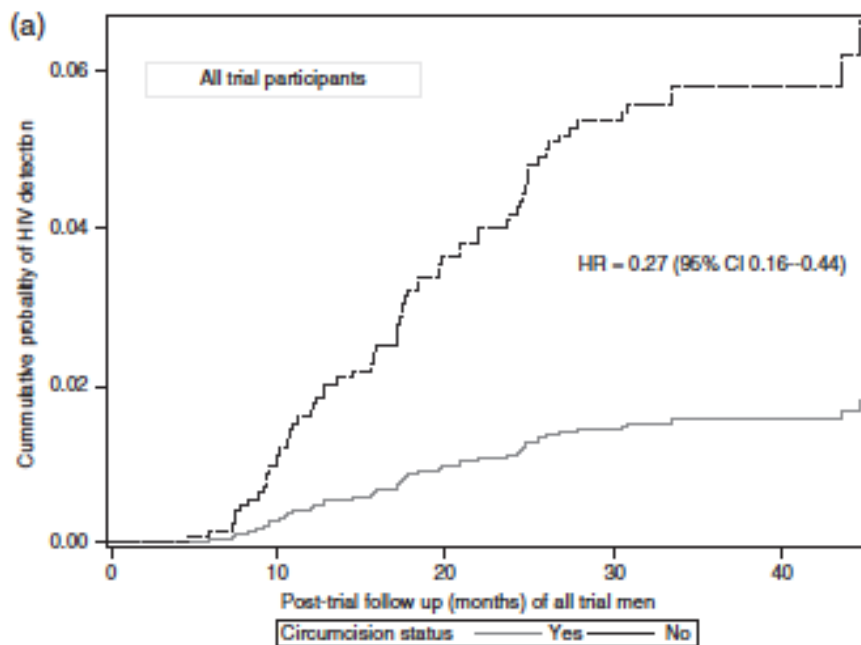


**Protecting the next generation – eliminating perinatal HIV infection.** L Mofenson, N Engl J Med 2010; 362: 2316–18.

- **PMTCT reduces the risk of transmission to below 2% = by > 92%**

# The effectiveness of male circumcision for HIV prevention.

Gray, Kigozi, Kong, AIDS 2012; 26:609-15



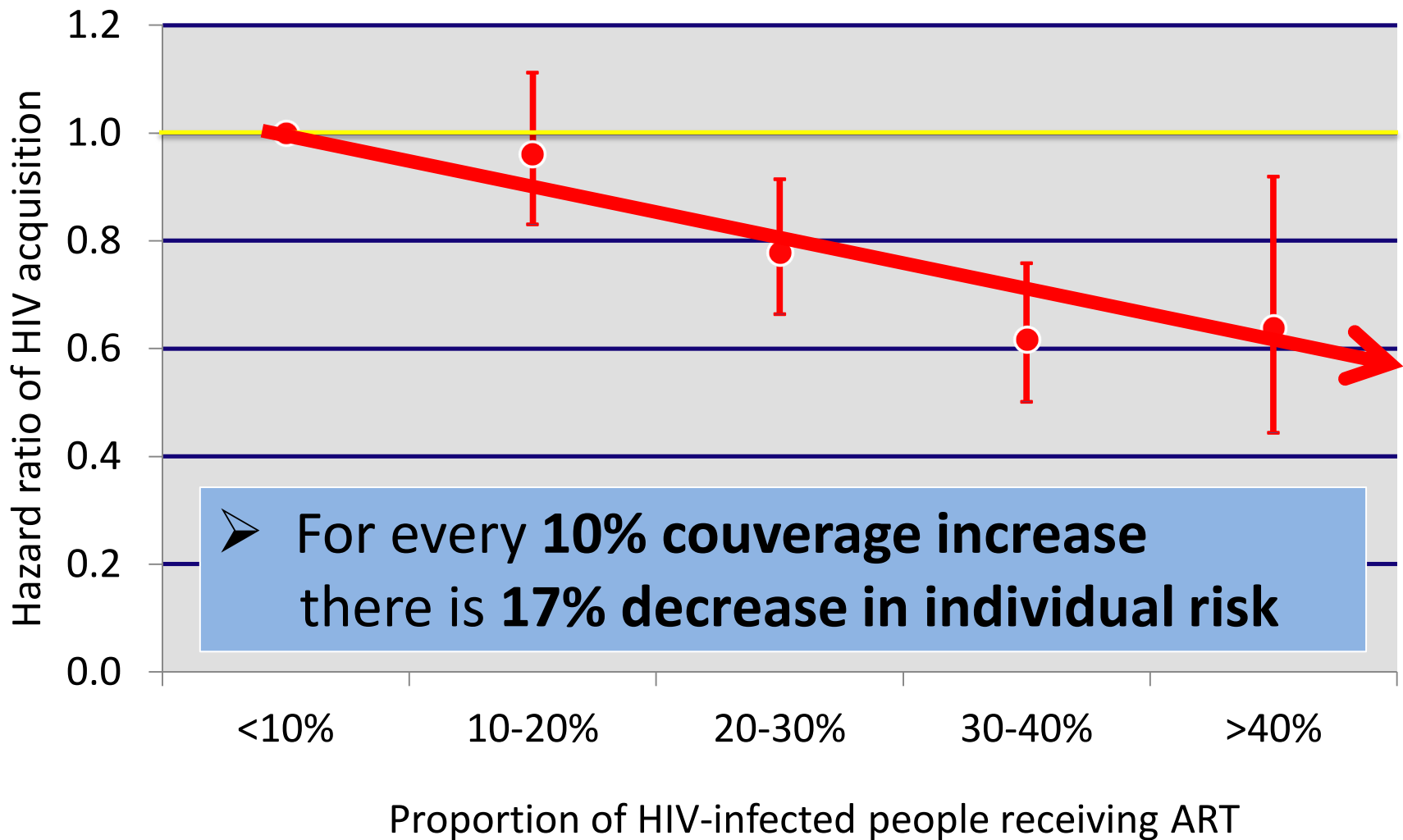
- Voluntary male circumcision reduces female-to-male transmission by 60%
- Low cost intervention; lifelong benefit

# Prevention of HIV Infection with Antiretroviral Therapy

HPTN 052. Cohen et al., New Engl J Med 2011; 365:493-505, 2011



- **Antiretroviral Therapy reduces the risk of HIV transmission by 96%**



**Effect of ART coverage on rate of new HIV infections in a rural South African population,** Tanser et al., CROI 2012



# Male condoms and sexually transmitted diseases.

CDC, Atlanta, 2002.

- **Condoms**, when used correctly and consistently, are highly effective (> 90%) in preventing the transmission of HIV

Cochrane Review: Always vs. never: 80% reduction in incidence

- **Treat HIV: 96%**
- **Prevent transmission to children: 92%**
- **Circumcise men: 60%**
- **Use Condoms: 80 – 90%**
  
- **Take medication before intercourse (PrEP): 75%**
- **Treat Herpes and Syphilis (STDs): 42%**
- **Use vaginal creams (microbicides): 40%**
- **Vaccination: 31%**

## **SMART implementation and delivery systems: The HOW matters!**

- **Nurse Based Care**
- **Task Shifting and lay staff**
- **Patient groups and tracing**
- **Decentralized service provision**
- **Adress barriers to access**
- **Abolish user fees**
- **Integration of services**
- **Innovation, technology and diagnostics**
- **Prepare for the upcoming vague of NCDs**

# Highly Active Combination Prevention

- Prevent MTCT
- Treatment
- Circumcision
- Condoms
- Key populations

- Behavior change
- Structural interventions
  - Social enablers
  - Program enablers

**HIV is - by far –  
the main reason  
for mortality and morbidity  
in Sub Sahara Africa.**

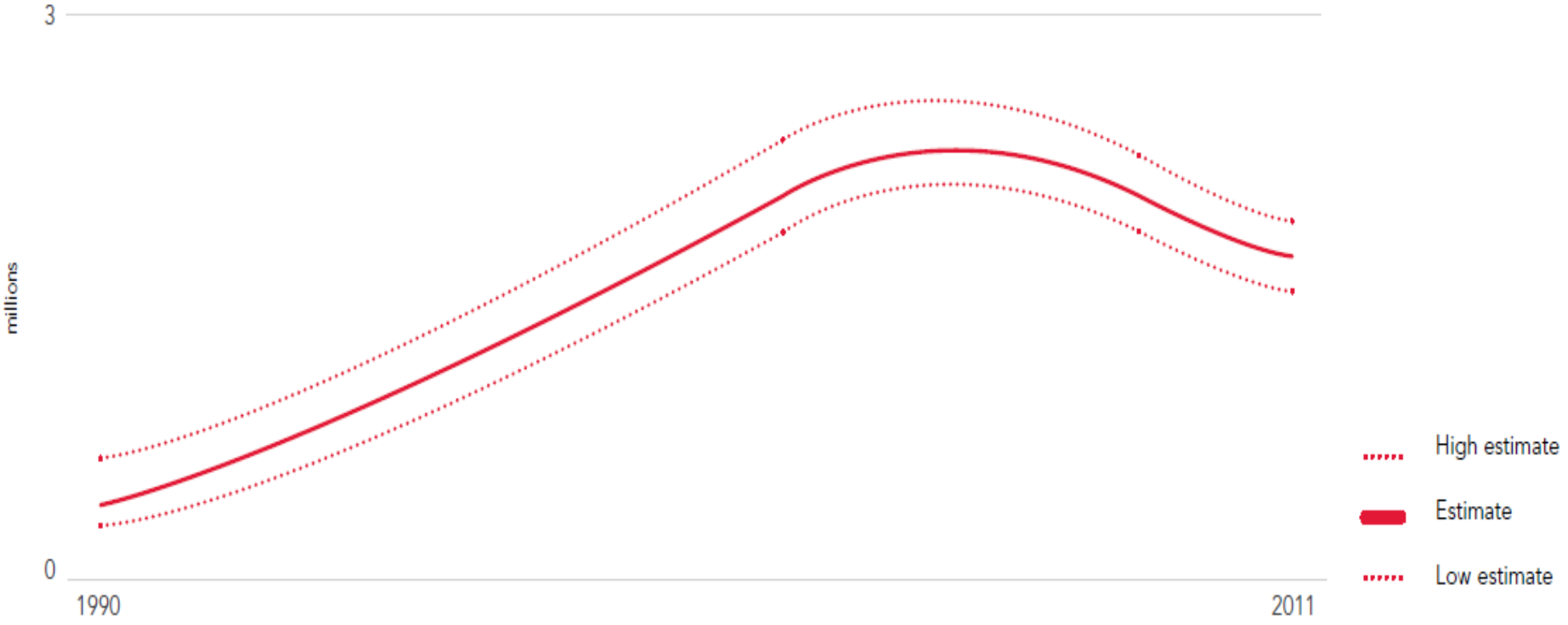
**34 Mio are infected worldwide.**

**11'000 acquire HIV every day.**

# **But...**

...we are on a tipping point:

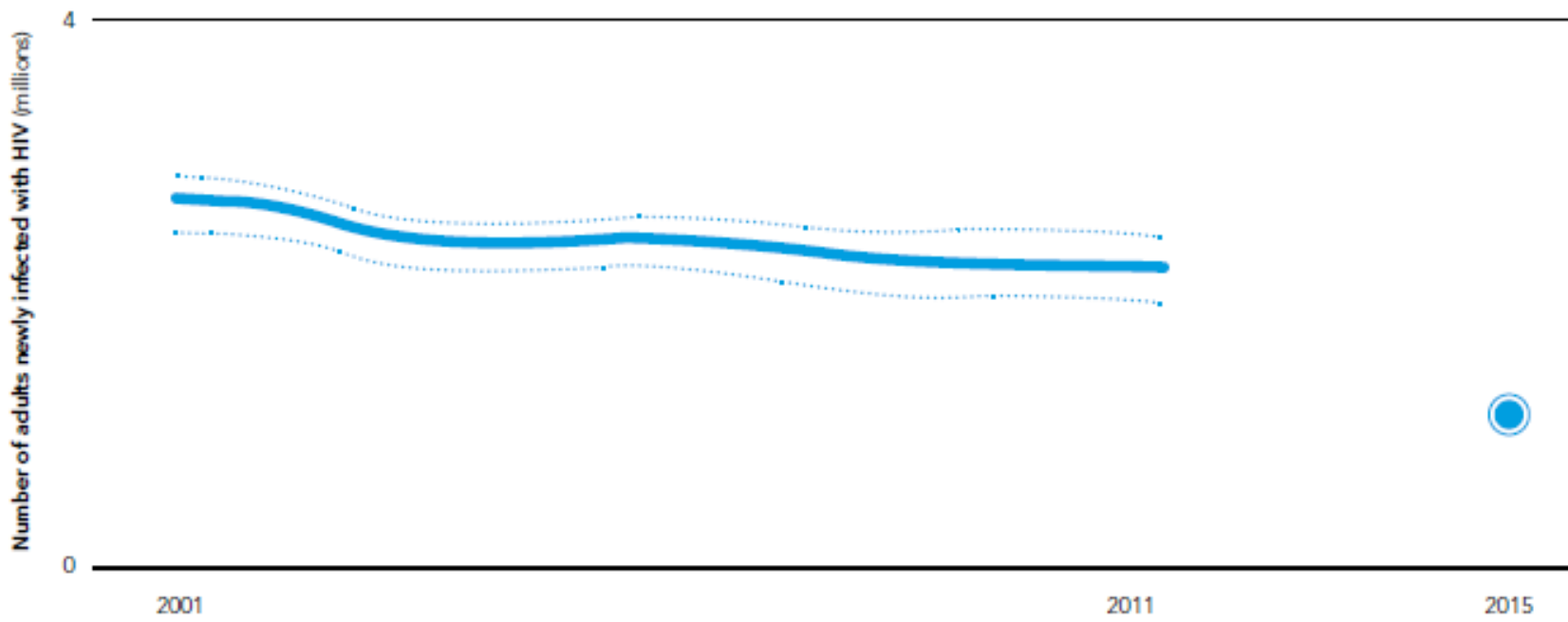
# ADULT AND CHILD DEATHS DUE TO AIDS, GLOBAL, 1990-2011



Source: UNAIDS estimates.



## New HIV infections among adults, 2001–2011 and the target for 2015



“(..) models indicate that if we achieve access to ART and the elimination of mother to child transmission together with ongoing prevention techniques - we could control the HIV epidemic by 2050.”

Prof. Françoise Barre Sinoussi, March 2013

3 policy recommendations:

Science, Ownership, Coalitions

&

3 reasons to keep engaged:

Prosperity, Security, Freedom

**Policy and decision**



**Science and evidence**

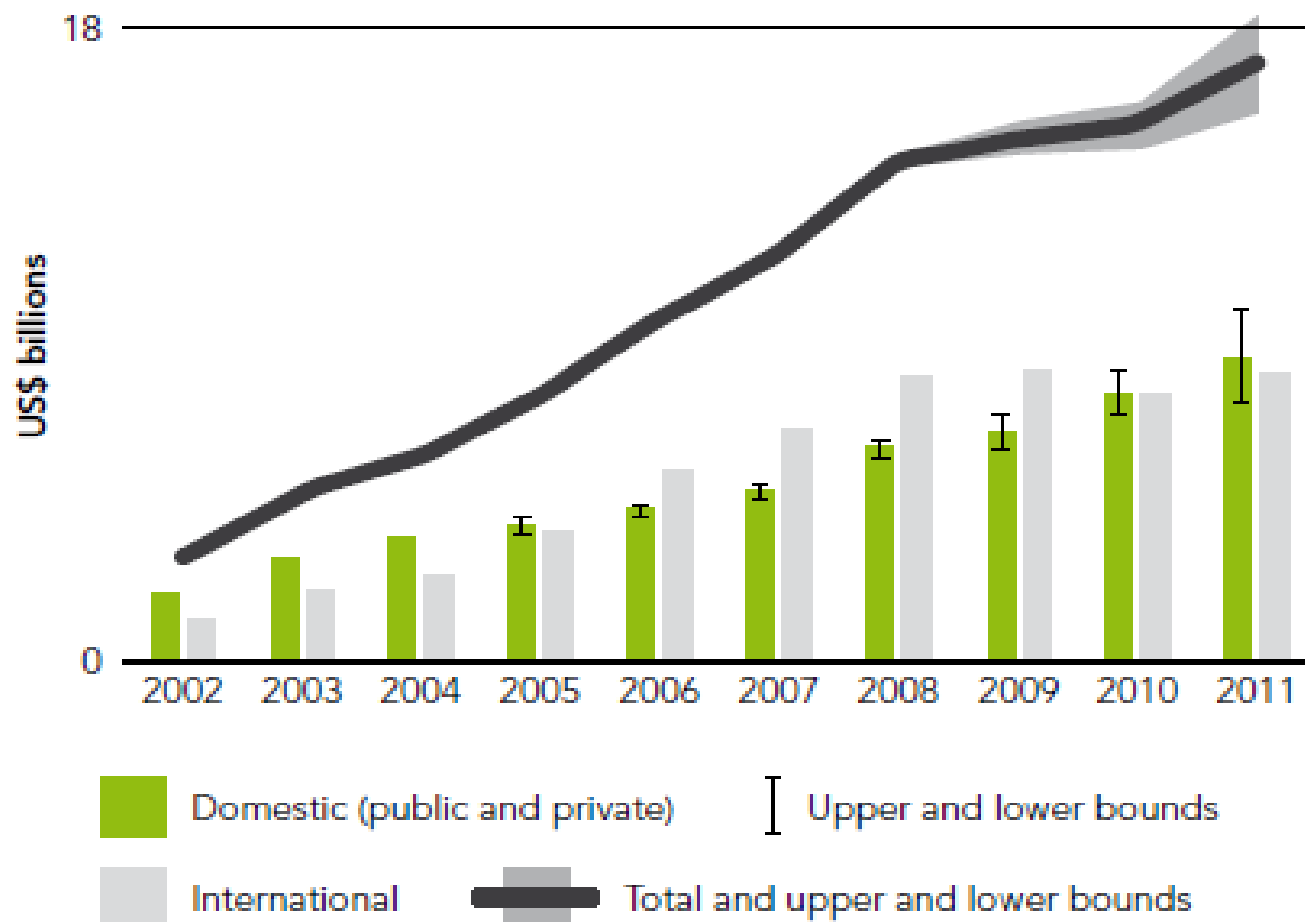
**Programs and implementation**



**We need country ownership !**

**Let us support what works: GFTM !**

# Resources available for HIV in low- and middle-income countries, 2002–2011



**If you want to go fast - go alone.**

**If you want to go far - go together.**

**Make smart coalitions...**

**...and stand up for your rights!**

# Prosperity

- Health → development
- Smart investments = in R & D = in future
- Return of investment
- Put investments into relation
- Spend now little - or later more (70 Mio PLHV by 2050)



You don't stop fighting the fire once you start to contain it...



• MACKAY •  
HAMILTON SPECTATOR



Security



# Freedom

**TOGETHER  
WE WILL  
END AIDS.**