FONDAZIONE DOSSETTI

Patologie Emergenti e Riemergenti

- **GLOBALIZZAZIONE. MIGRAZIONE, SALUTE E VACCINI**

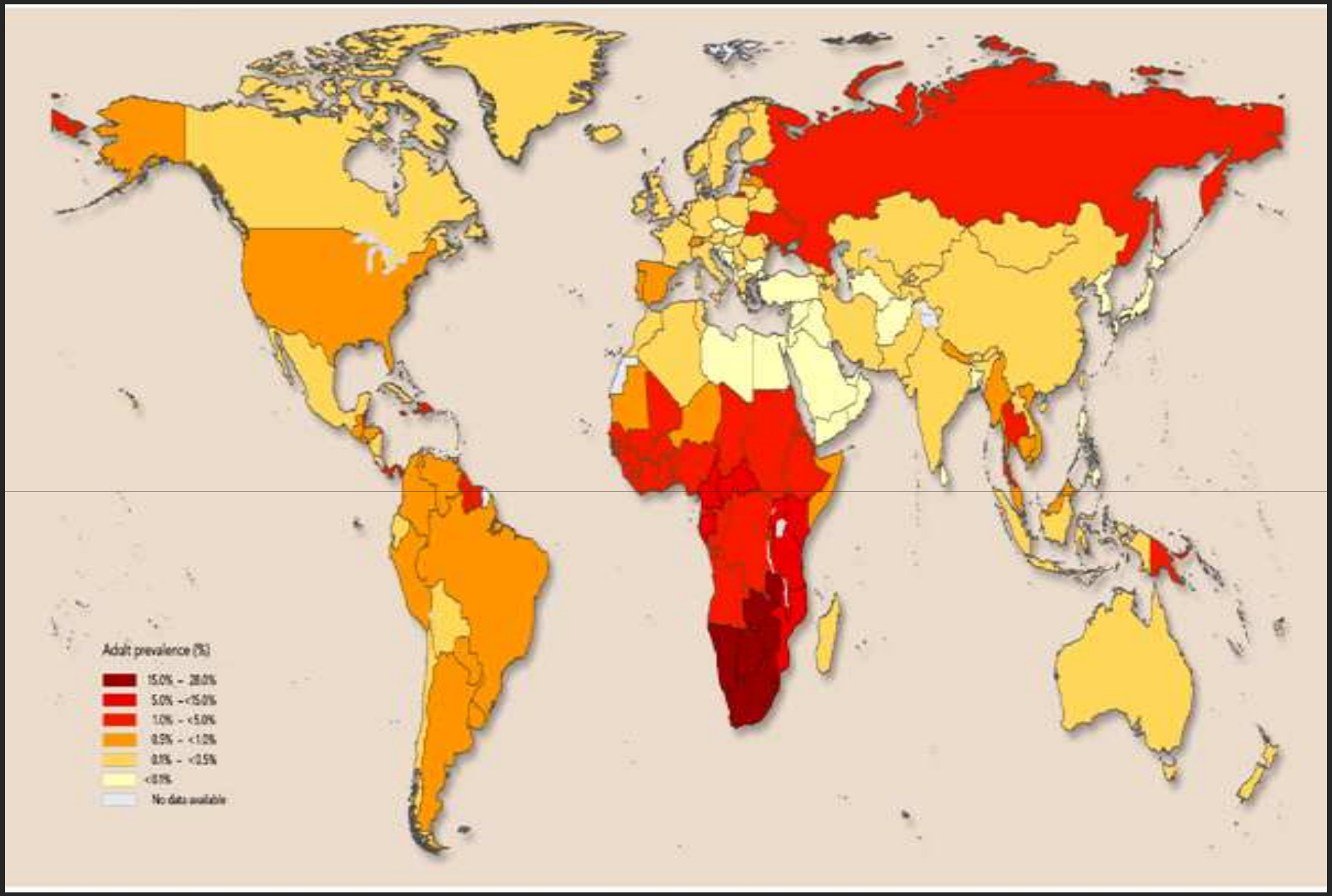
Le nuove Patologie della Globalizzazione

INFEZIONE DA HIV

Fernando Aiuti

Professore Emerito di Immunologia Clinica e Malattie Infettive Università “Sapienza”, Roma

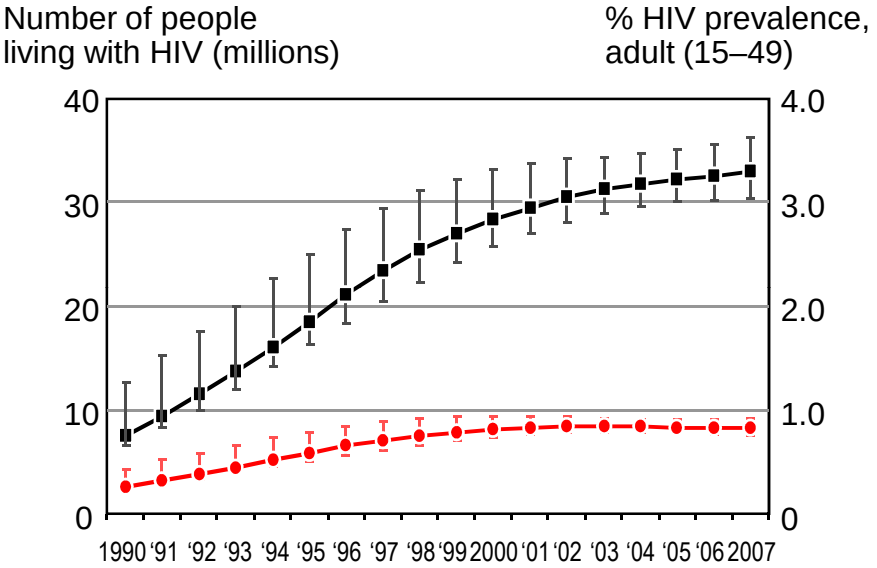
Presidente Commissione Politiche Sanitarie del Comune di Roma



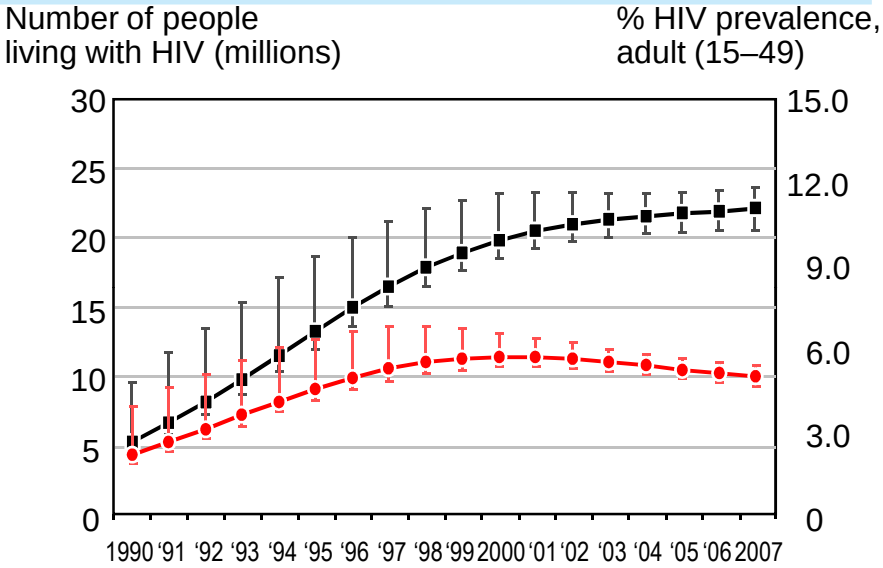
Estimated national HIV prevalence among persons 15-49 years of age, December 2007

Estimated number of people living with HIV and adult HIV prevalence
Global HIV epidemic, 1990–2007; and, HIV epidemic in Sub-Saharan Africa, 1990–2007

Global HIV epidemic, 1990–2007



HIV epidemic in Sub-Saharan Africa, 1990–2007

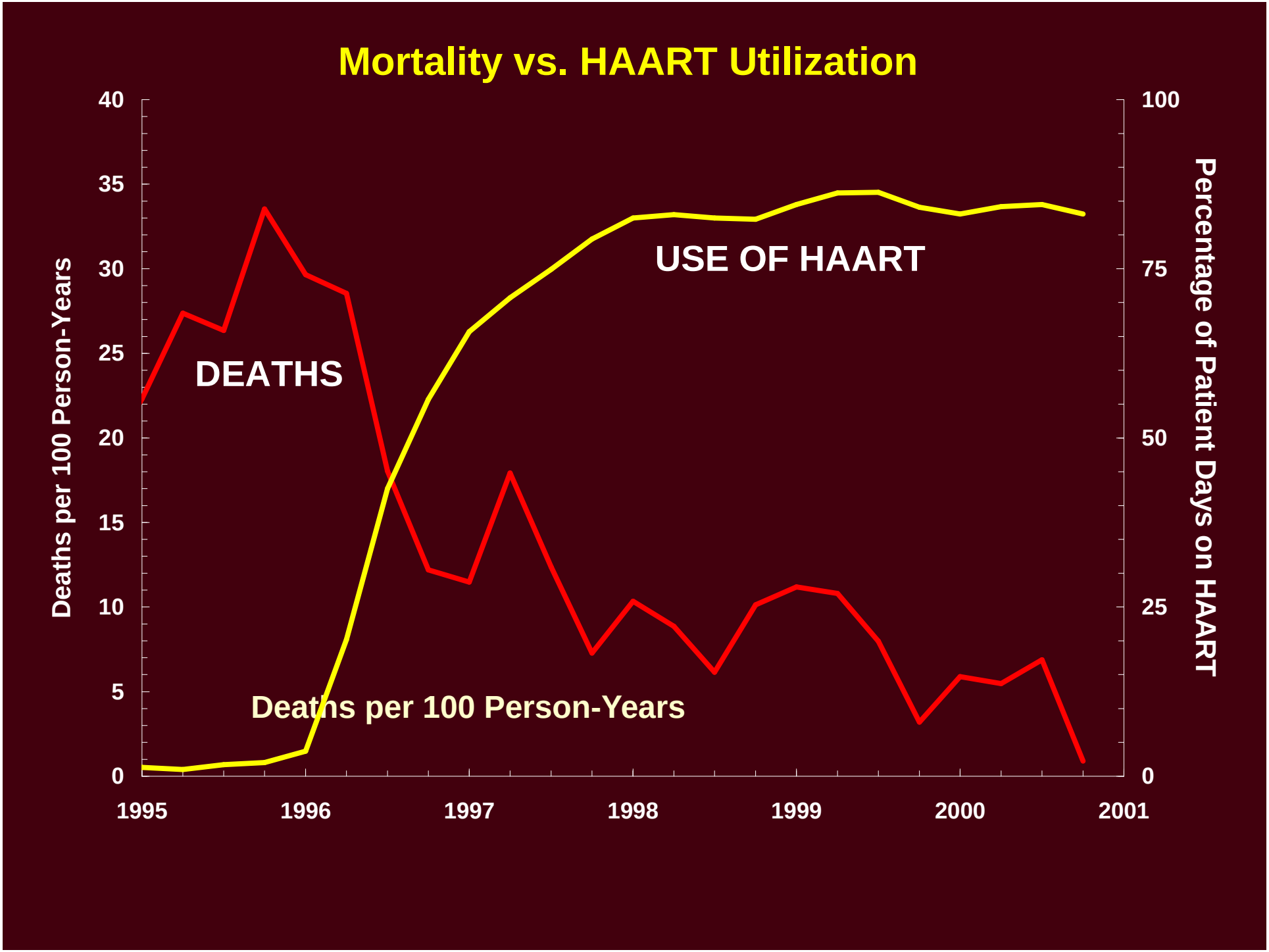


Number of people living with HIV

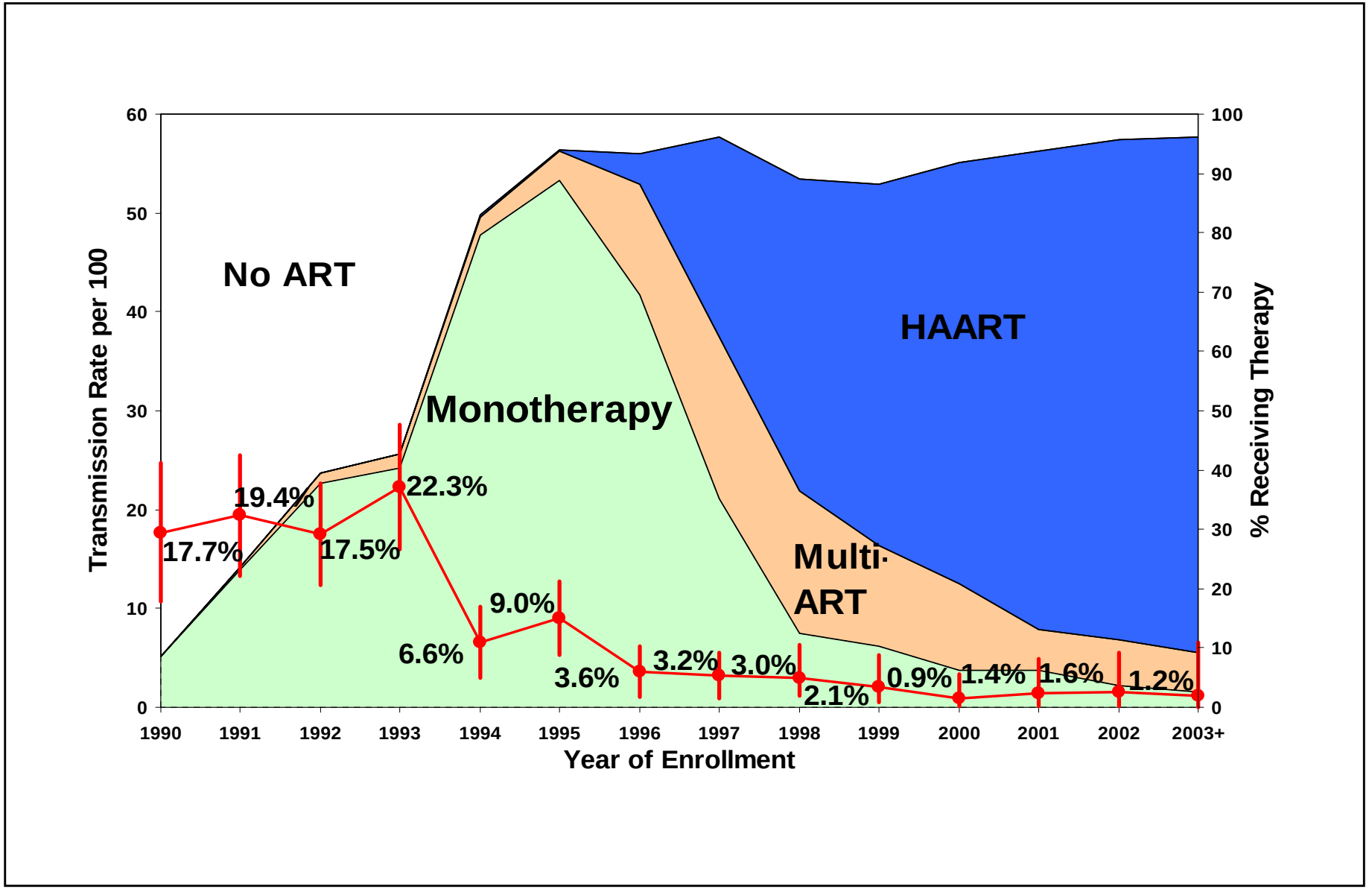
% HIV prevalence, adult (15–49)

These bars indicate the range around the estimate

NOTE: Even though the HIV prevalence stabilized in Sub-Saharan Africa, the actual number of people infected continues to grow because of ongoing new infections and increasing access to antiretroviral therapy.


Mortality vs. HAART Utilization
Deaths per 100 Person-Years
Percentage of Patient Days on HAART
40
35
30
25
20
15
10
5
0
100
75
50
25
0
1995
1996
1997
1998
1999
2000
2001
USE OF HAART
DEATHS
Deaths per 100 Person-Years

Trends in Maternal Antiretroviral Therapy and Perinatal HIV Transmission, Women and Infants Transmission Study: 1990-2004



HIV-1 Entry Inhibitors

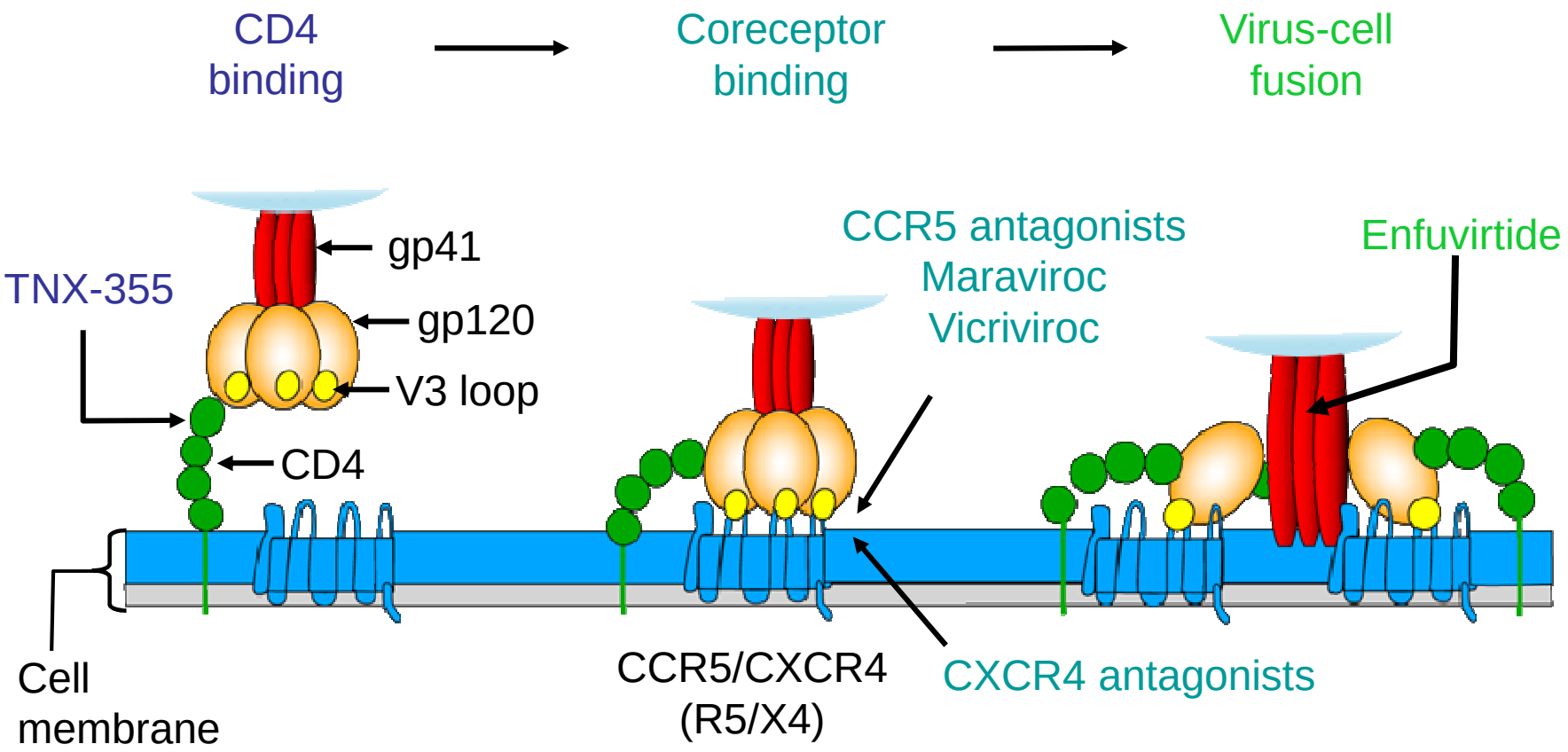
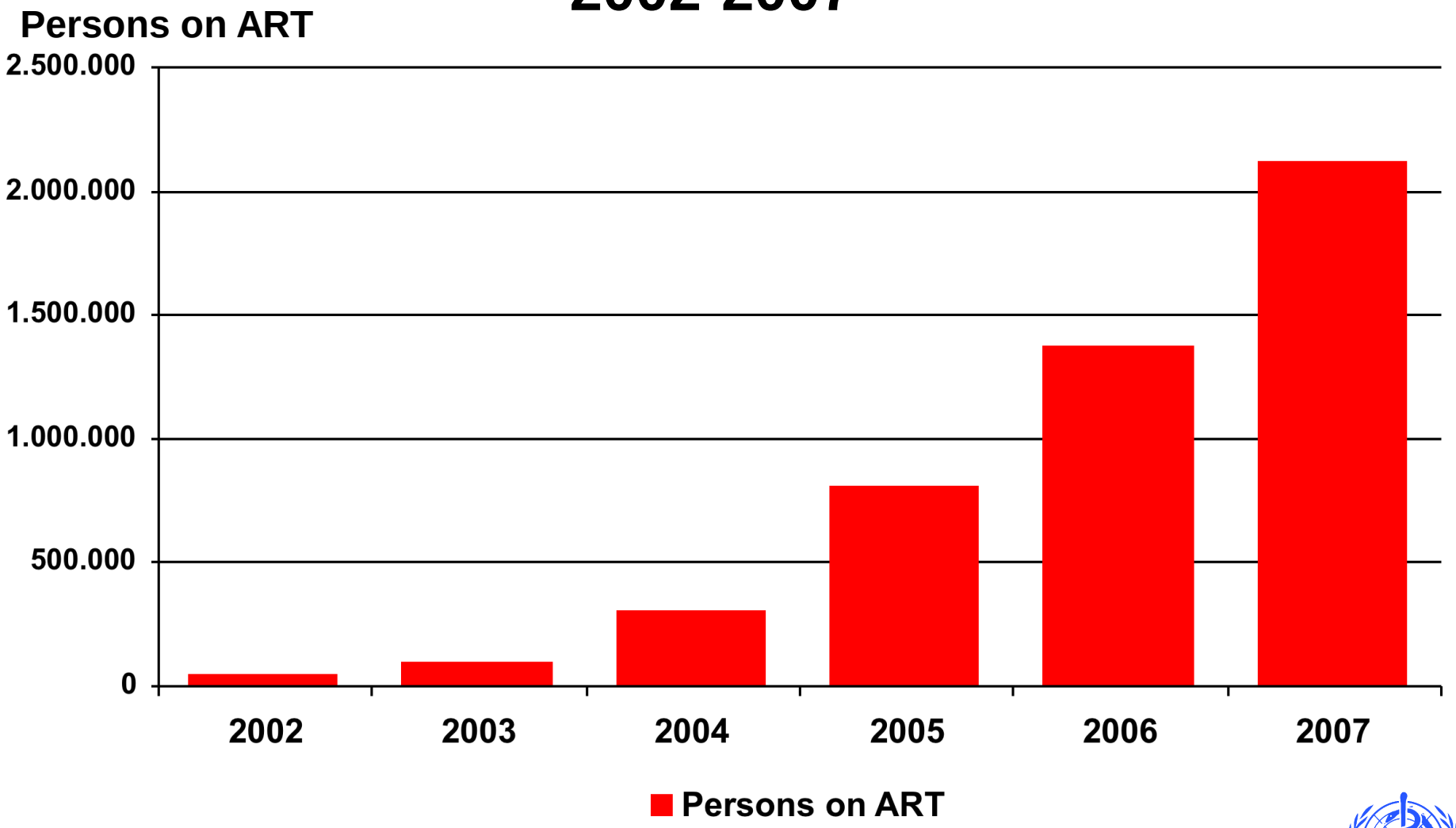


Figure adapted from Doms R, et al. Genes Dev. 2000;14:2677-2688.

Current Thinking About ARV Therapy

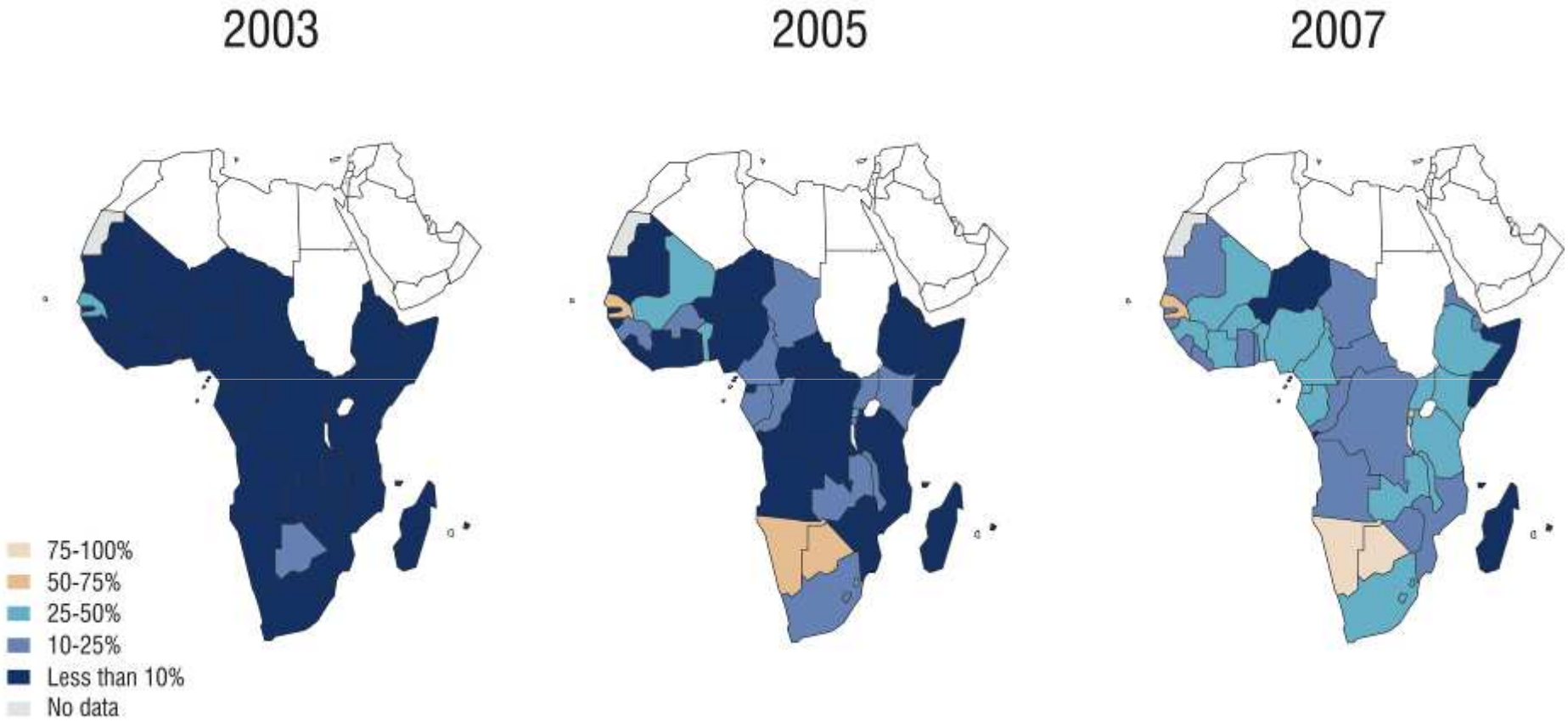
- Profound impact on morbidity and mortality
- Prices are down and falling
- ARV regimens are becoming simpler
- ARV therapy is more cost effective than only treating opportunistic infections
- Not everybody needs ARV therapy
- Effective treatment facilitates prevention

Number of persons receiving anti-retroviral treatment in sub-Saharan Africa by year, 2002-2007

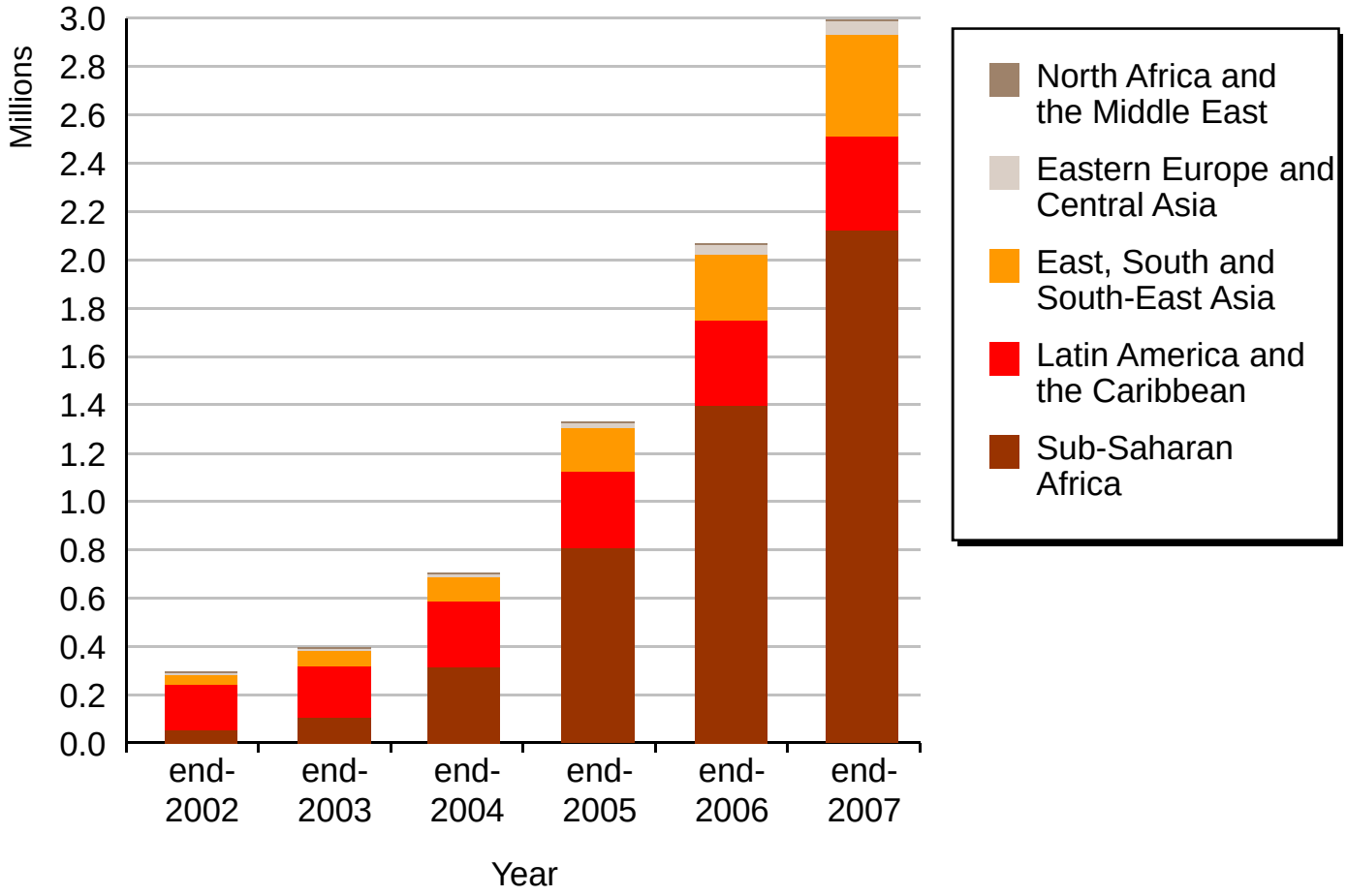


Source: UNAIDS/WHO

ANTIRETROVIRAL THERAPY COVERAGE IN SUB-SAHARAN AFRICA, 2003-2007



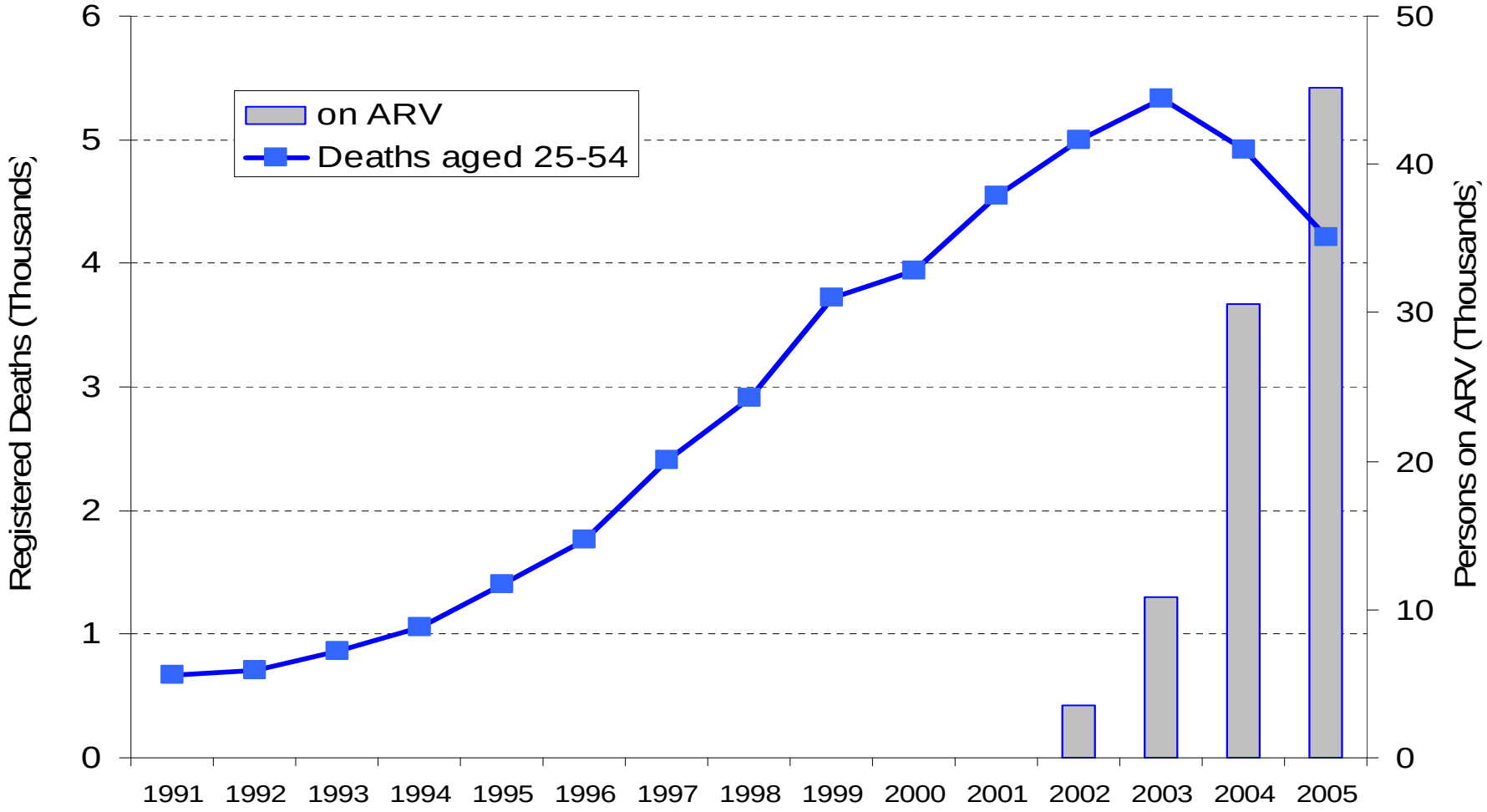
Number of people receiving antiretroviral drugs in low- and middle-income countries, 2002–2007



5.2

Source: Data provided by UNAIDS & WHO, 2008.

Decline in adult mortality with introduction of ART: Botswana

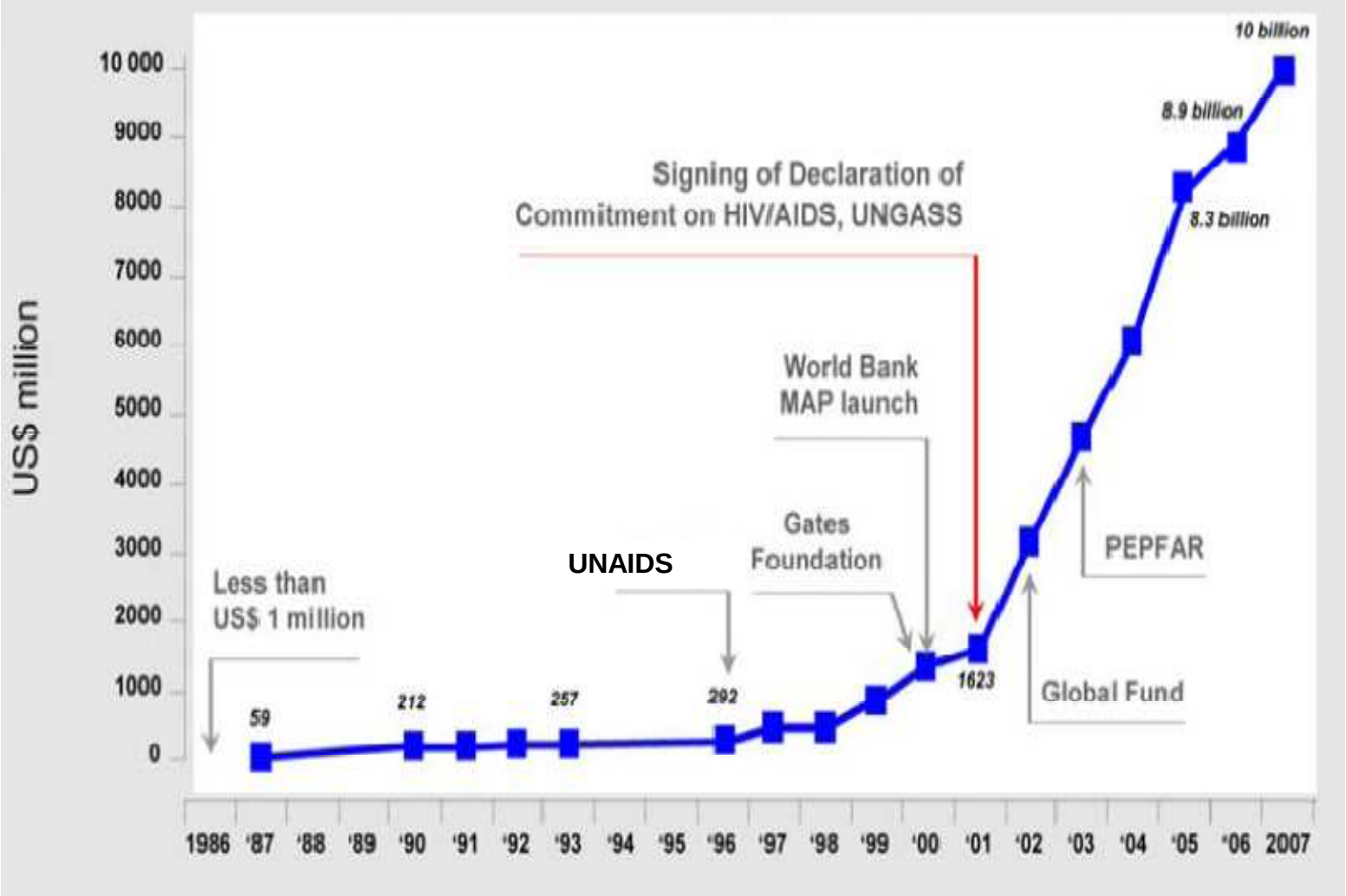


Towards Universal Access…

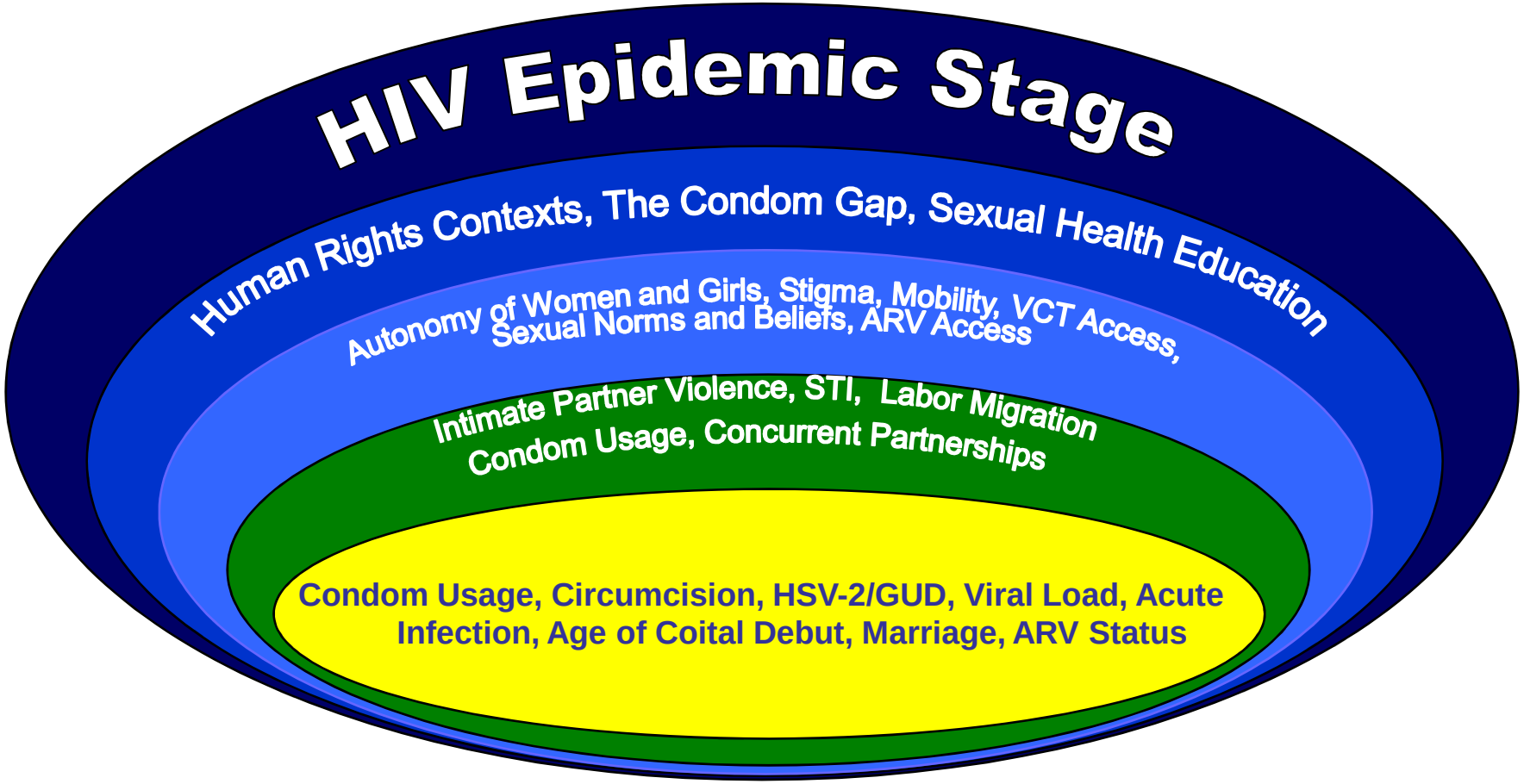
2005 G8 Summit at Gleneagles: "…working with WHO, UNAIDS and other international bodies to develop and implement a package of HIV prevention, treatment and care, with the aim of as close as possible to universal access to treatment for all those who need it by 2010."

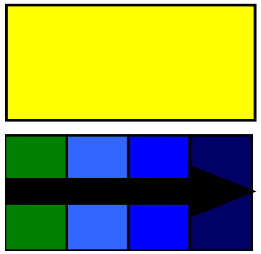


Total annual resources available for AIDS (1986-2007)



Ecological Model for HIV Risk in Southern Africa





Individual Risks for HIV Infection

Widening Risk Contexts for HIV Infection

WHO Strategic Directions 2006-2010

1. Expanding testing and counselling

2. Maximising prevention

3. Accelerating treatment scale up

4. Strengthening health systems

5. STRATEGIC INFORMATION

ASPEN INSTITUTE ITALIA

COMMISSION FOR AFRICA

UNIDEA UNICREDIT FOUNDATION

Different and specific strategies for HIV prevention and cure for HIV disease in Africa

Fernando Aiuti

The future of Africa : the commitment of the Italian society
Rome 4-5 October 2004

The HIV Epidemic depends from several factors:

- **Nation**
- **City**
- **Village or community**

  Virulence of viral strains,
- **Virus type, subtype and group**
- **Religious and ethical behaviours: traditions, marriage customs, circumcision practices, government and association involvment**







Malnutrition



"AIDS and poverty go hand in hand. They are twins."

ambiente







Prevention and Education

Specific for every country and depending on :

- **existing economic situation**
- **capacities of governments and associations.**

Avoid the same type of interventions by different associations.

Positive Examples

Appropriate local interventions and help from the U.N. and international associations in countries such as UGANDA and SENEGAL.

Focus on prevention OF HIV

- free condoms available
- spread educational campaigns to reduce number of partners
- practice absolute fidelity
- recommend HIV screening and counselling
- reduce the marginalisation of HIV positive individuals
- provide specialised visits for sexually transmitted diseases
- treat sexually diseases in order to reduce the risk of their transmission
- Circumcision efficacy in preventing HIV transmission

Focus on assistance and therapy

Training, resources and indipendence to device preventive measures according local situation

Flexible interventions and regulation in the assistance and hospital facilities

Priority for better hygiene and drugs for common infections

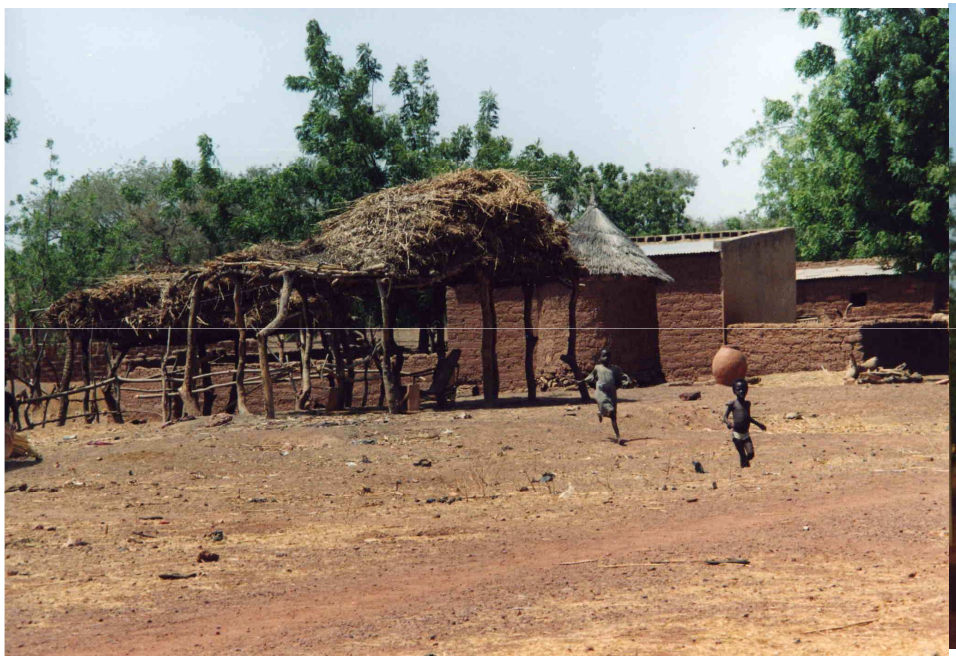
Cheap and quicker test for diagnosis
Developing low cost for antiretroviral drugs

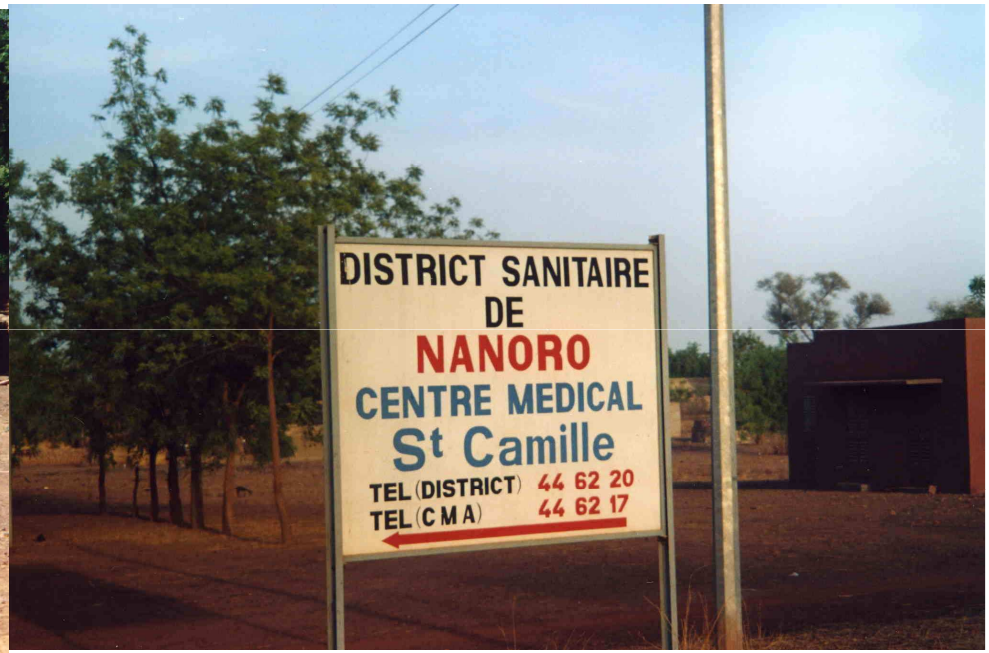
MISSIONE:PREVENZIONE ASSISTENZA

AIUTO ALLA RICERCA

Anlaids ONLUS

26 LUGLIO 1985 – 26 LUGLIO 2005 FINO AL 24 NOVEMBRE 2009



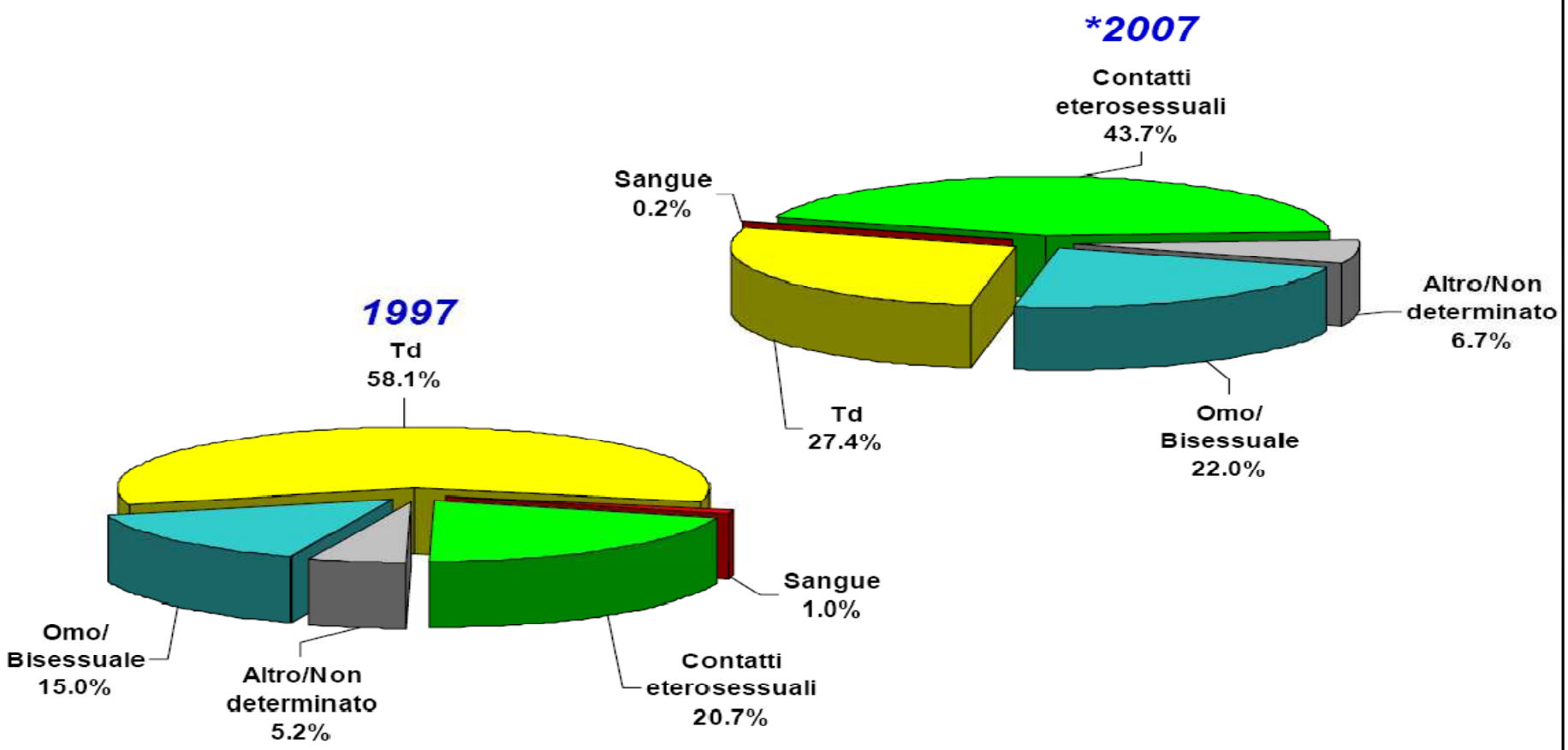

DISTRICT SANITAIRE
DE
NANORO
CENTRE MEDICAL
St Camille
TEL (DISTRICT) 44 62 20
TEL (C M A) 44 62 17


BIOHAZARD

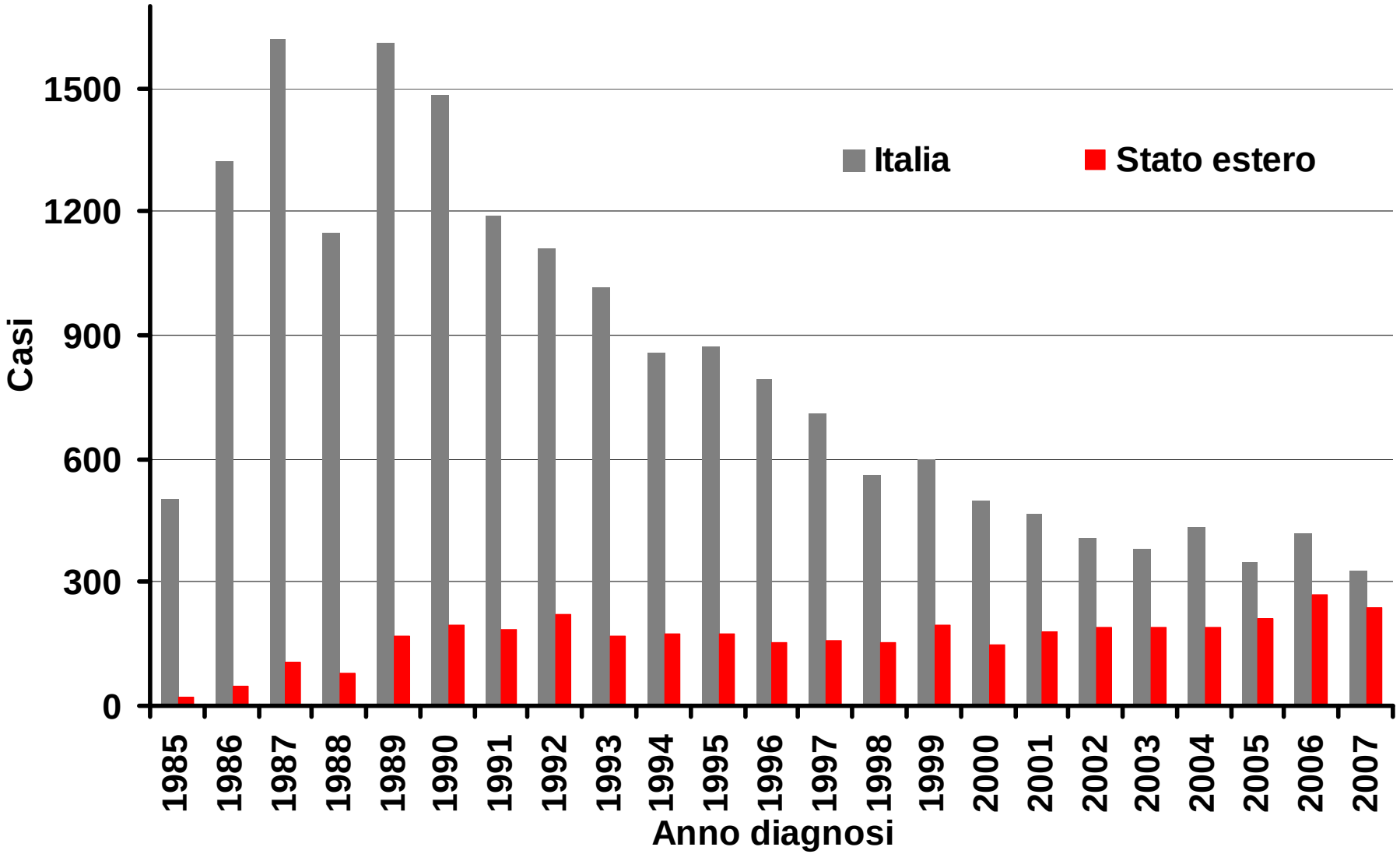


HIV

Distribuzione percentuale dei casi di AIDS per modalità di trasmissione 1997 vs 2007



Andamento per nazione di nascita



Nuove diagnosi da HIV nel Lazio

Patrizio Pezzotti, Damiano Abeni, asplazio 2008

MIGRAZIONE e HIV/AIDS:



Raccomandazioni della Società Civile Basato sulla conferenza europea “Il diritto alla prevenzione,trattamento, cura e aiuto per i migranti e le minoranze etniche con HIV/AIDS in Europa: le prospettive della comunità” – Lisbona, 7-8 giugno 2007

La popolazione migrante è maggiormente esposta

al contagio con l'HIV a causa della natura del processo migratorio.

I gruppi più emarginati sono:
immigrati irregolari, tossicodipendenti, sieropositivi, omosessuali, dediti alla prostituzione, vittime della tratta di esseri umani, minoranze etniche, detenuti e sono a rischio di sfruttamento, violenza ed esclusione. Questo può essere dovuto, Anche alla elevata mobilità, status legale, alle difficoltà linguistiche, alla diversità culturale, alla disinformazione, al basso livello di scolarizzazione, alla mancanza di lavoro, allo scarso accesso ai servizi sanitari, di prevenzione e di riduzione del danno, all'emarginazione sociale

Robert Gallo:The “Race” is On: April 23, 1984



- “We hope to have such a vaccine against AIDS virus ready for testing in approximately two years,” HHS Secretary Margaret



P. Picasso 1932 *Il sogno* Collezione privata

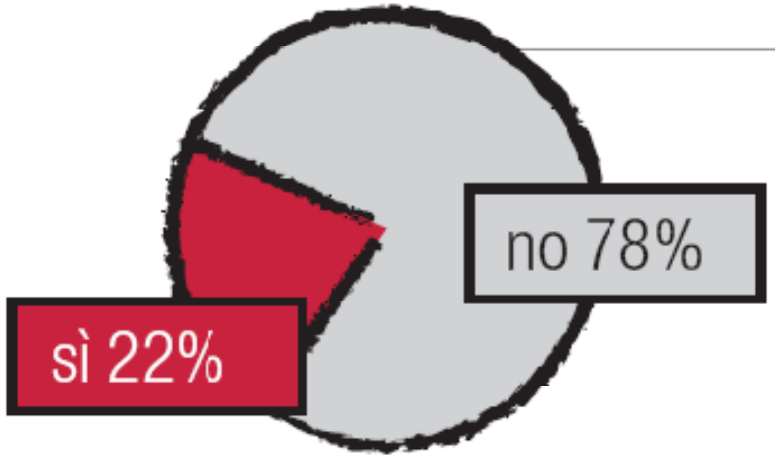
The Ideal HIV Vaccine

- Induces cellular and humoral immune responses against virus-infected cells as well as HIV
- Induces antibodies that neutralize and do not enhance HIV infection
- Does not induce autoimmune responses
- Induces local immunity at all entry sites for HIV
- Safe with long-lasting effects at lest in 50 % of subjects

SONDAGGIO ANLAIDS

Cosa sanno i tuoi figli DELL'AIDS?

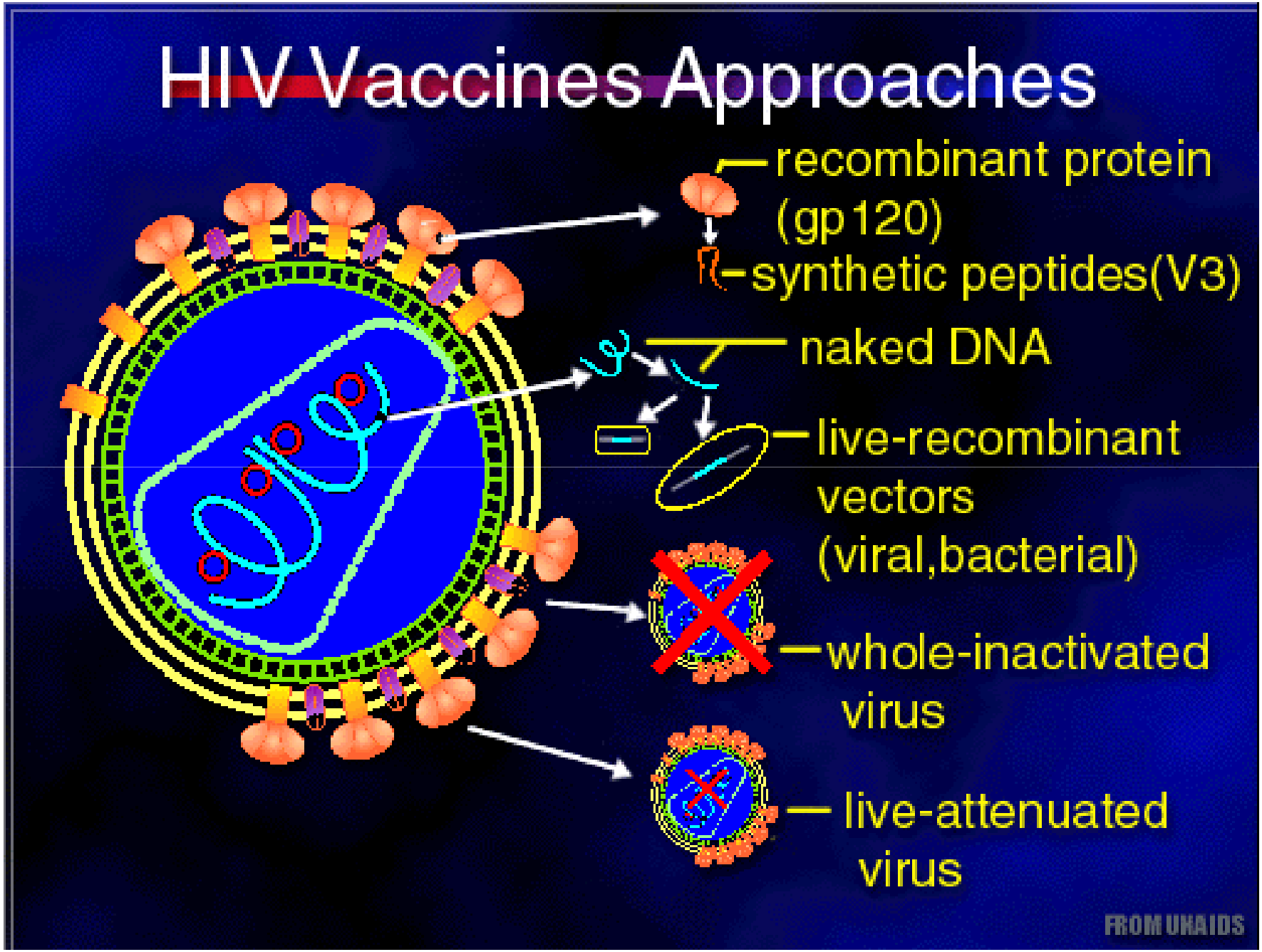
Esiste un vaccino per l'AIDS?



Percentuale di risposte corrette

Per sesso		
Uomini 78%	Donne 78%	
Per età		
Giovani 77%	Adulti 84%	
Per occupazione		
Lavoratori 81%	Studenti 75%	

HIV Vaccines Approaches



POTENTIAL GOALS for an HIV VACCINE

- To prevent establishment of persistent HIV infection

- To significantly suppress viral load and slow the progression to AIDS

- To significantly reduce transmission of HIV, providing a public health benefit

CONCLUSIONI I

UN VACCINO PREVENTIVO DELL' INFEZIONE DA HIV **NON SEMBRA AL MOMENTO REALIZZABILE NE' PREVEDIBILE.**

LE METODICHE IMMUNOLOGICHE NON CONSENTONO DI STABILIRE CHE UNA RISPOSTA ANTICORPALE O CELLULARE CORRISPONDA ALLA PRESENZA DI UN' IMMUNITA' STERILIZZANTE E AD UNA PROTEZIONE

UNA SPERIMENTAZIONE IN FASE III DEVE ESSERE EFFETTUATA SOLO IN PAESI AD ELEVATA ENDEMIA ANCHE CON IL SOLO SCOPO DI RIDURRE LA STESSA.

La sperimentazione in fase III con vaccino gp120 ha dato un beneficio modesto di protezione dl 30 % ma solo nei primi sei mesi dalla vaccinazione.(55 soggetti nel gruppo dei vaccinati e 76 nei controlli).

CONCLUSIONI II

UN VACCINO PREVENTIVO DELLA MALATTIA SEMBRA INVECE PIU' REALISTICO ANCHE SE L'EFFETTO SULLA PROGRESSIONE POTREBBE ESSERE LIMITATO NEL TEMPO MA UTILE PER RISPARMIARE I FARMACI ANTIVIRALI

UN VACCINO TERAPEUTICO DELLA INFEZIONE/MALATTIA POTREBBE TROVARE UNA SUA BASE RAZIONALE CON SPERIMENTAZIONI ANCHE IN PAESI OCCIDENTALI USANDO SOLO COME **END POINT** LO STADIO CLINICO, IL VIRAL LOAD ED I CD4 e NON I TEST FUNZIONALI PERCHE' COMPLESSI POCO RIPRODUCIBILI E VARIABILI .

QUESTI VACCINI POTREBBERO DARE RISULTATI IN POCHI ANNI

Ma al momento non esistono dati di efficacia

Storia del cosidetto “vaccino italiano” TAT terapeutico e preventivo ISS

- 2000: Sperimentazione del vaccino TAT in scimmie:risultati non riprodotti in altri centri sperimentali
- 2003-5 Sperimentazione nell’uomo fase I :critiche della comunità scientifica per come è stata condotta.Il governo va avanti…30 milioni di euro stanziati per 3 anni……
- 2008 inizia l’arruolamento pazienti per fase II in 13 mesi….
- 2008 EDCTP (C. europeo) boccia la sperimentazione progetto in Sud Africa “IRRELEVANT TO TEST,MAY BE EITHER DANGEROUS”
- 2009 Il Sud Africa non ha ancora aderito al progetto
- 18/11/09 Congresso Anlaids R. Gallo il vaccino Tat non funziona

DOMANDE:che fine faranno i finanziamenti ???

Conclusions

At present no AIDS vaccine is available and an efficient vaccine will not be ready any time soon.

Treatment is not only useful for the patient but also for their potential sex partners because of the reduced viral load and infectivity

Treatment should be given only if adhesion and compliance is optimal with triple therapy (HAART)

The correct therapy may reduce the emergency of resistent viral strains