

Understanding HIV and AIDS and defining the terms and concepts

- HIV is a retrovirus (RNA)
- This type of viruses changes itself (mutate) rapidly
- HIV invades a CD4 cells and it starts replicating itself in the cell
- The CD4 cell is eventually destroyed
- At the end the immune system is destroyed

- HIV-1 and HIV-2
- Different sub-types in HIV-1: clades A-K
- Different subgroups in different areas
- Time from HIV infection to development of symptoms (symptomatic HIV infection) varies from less than a year to well over ten years
- HIV infected persons can be completely without symptoms for many years
- HIV infection eventually leads to AIDS

- AIDS is the advanced stage of HIV infection
- The process from HIV infected to AIDS is in most cases gradually and the time can vary considerably
- AIDS diagnosis: either CD4 below 200 in a HIV infected person, or the presence of an AIDS defining condition
- No one dies of AIDS, one dies from an infection or condition that has weakened or (almost) destroyed the immune system

Transmission and Risks

HIV transmission

- **HIV is spread through three main modes. These modes of transmission are as a result of exposure to body fluids of an infected person. The three main modes are:**
 - **Sexual contact (vaginal, oral, anal)**
 - **Blood contact (transfusion, transplant, needles, cutting tools, broken skin)**
 - **Mother to Child (pregnancy, delivery, breastfeeding)**

HIV is not transmitted through...

- **Ordinary social contact, shaking hands**
- **Donating blood**
- **Shared clothing, food, dishes**
- **Touching**
- **Kissing**
- **Toilets**
- **Insect bites**
- **Massage**
- **Masturbation**
- **Living with a PLWH**

Transmission through sexual contact

- Receiver is generally at higher risk
- Unprotected anal sex has the highest risk
- In penile-vaginal intercourse, the female partner has a higher risk (larger surface, semen is more infective)
- Oral sex is far less risky, but not without risk
- Contraceptives, other than condoms are not effective against transmission of HIV

Transmission through blood (products)

- Sharing needles (IDU)
- Blood transfusion/transplant (close to 100% transmission risk)
- Skin-cutting and piercing tools
- Barbershops
- Traditional tattoos/treatment
- In health care settings (needle stick injuries, accidental cut, etc.)

Mother-to-Child Transmission

- Risk of transmission:
 - Intrauterine: up to 7%
 - Delivery: 15-18%
 - Breastfeeding: 15%
- Can be less than 2% with proper precautions:
 - ART
 - Caesarean
 - Artificial feeding

Risk and Vulnerability

- Risk factors include:
 - Age
 - Multiple sex partners
 - Partners with multiple sex partners
 - History/presence of STI
 - Alcohol abuse
 - IDU
 - Male homosexual intercourse

- Vulnerability:
 - Social, political and economic forces make some people more vulnerable
 - Women are more vulnerable due to gender inequality
 - Migrant labourers
 - Displaced communities
 - Young people (especially women)
 - Peer pressure

Women's vulnerability

- Percentage infected women is increasing, in many African countries there are more women than men infected (55% and more)
- Women are more vulnerable:
 - Larger surface that is exposed
 - Higher concentration of HIV in semen
 - More semen than vaginal secretions
 - Forced sex may cause lacerations
 - Traditional practices
 - More untreated STI
 - Sexual intercourse during menstrual period

- Social factors:
 - 70% of the infected women are infected while being faithful in marriage
 - Women lack the power to reduce their risk for infection
 - No say about their sexuality
 - Women have less knowledge on their sexual health
 - Social pressure to produce offspring
 - Rape, sexual slavery, etc.
 - Lack of economic power

Risks for Men

- Peer pressure to have more sexual partners
- Alcohol (substance abuse) which causes risk-taking behaviour
- Denial of MSM practices in society, which causes lack of preventive measures, “underground” activities, etc.

Estimated risks of HIV transmission through.....

- Blood transfusion (one unit) 90-100%
- Receptive anal intercourse 0.1-3.0%
- Receptive vaginal intercourse 0.1%-0.2%
- Insertive vaginal intercourse 0.03%-0.09%
- Insertive anal intercourse 0.06%
- Receptive oral sex (fellatio) 0-0.04%
- Needle stick injury 0.3%
- Sharing injecting equipment 0.67%

Global summary of the AIDS epidemic | 2009

Number of people living with HIV

Total	33.3 million [31.4 million–35.3 million]
Adults	30.8 million [29.2 million–32.6 million]
Women	15.9 million [14.8 million–17.2 million]
Children (<15 years)	2.5 million [1.6 million–3.4 million]

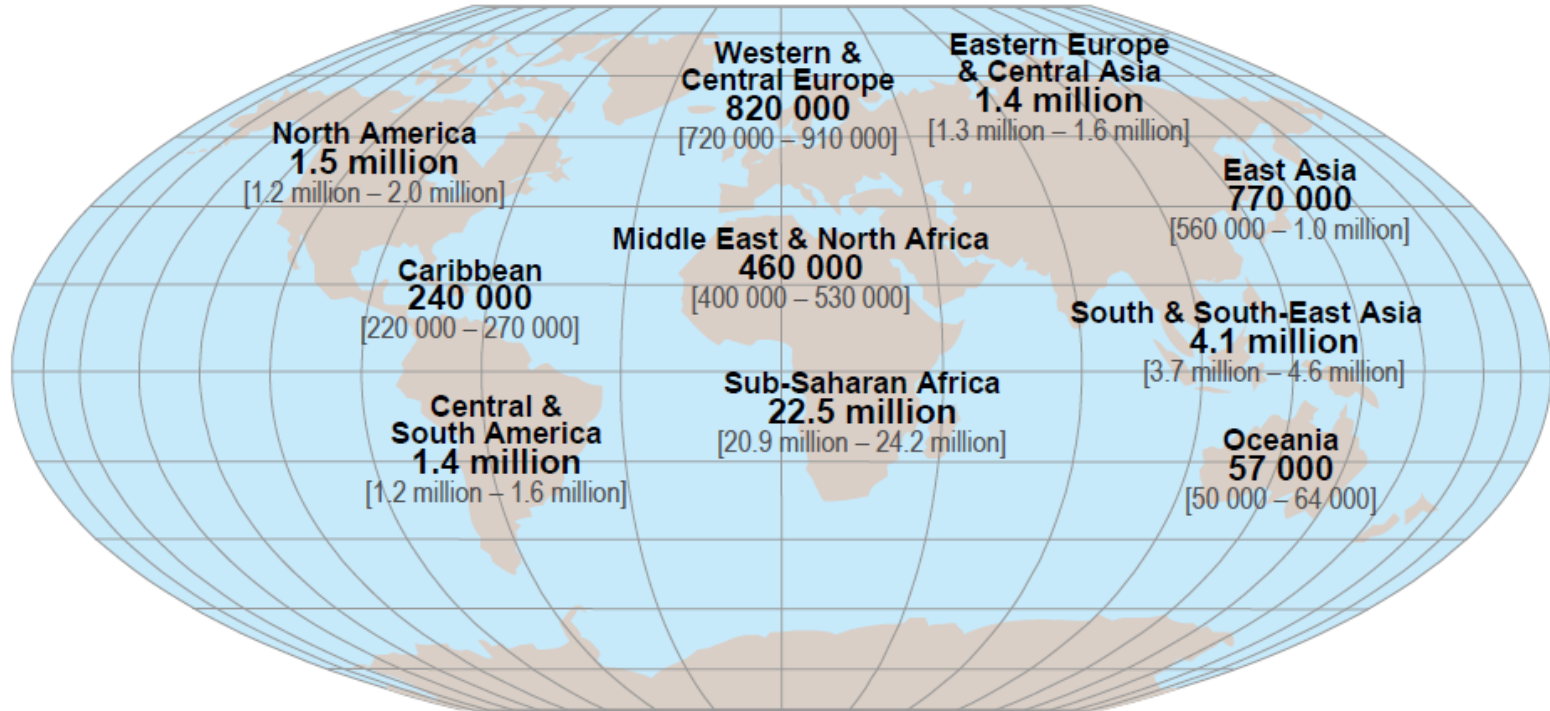
People newly infected with HIV in 2009

Total	2.6 million [2.3 million–2.8 million]
Adults	2.2 million [2.0 million–2.4 million]
Children (<15 years)	370 000 [230 000–510 000]

AIDS deaths in 2009

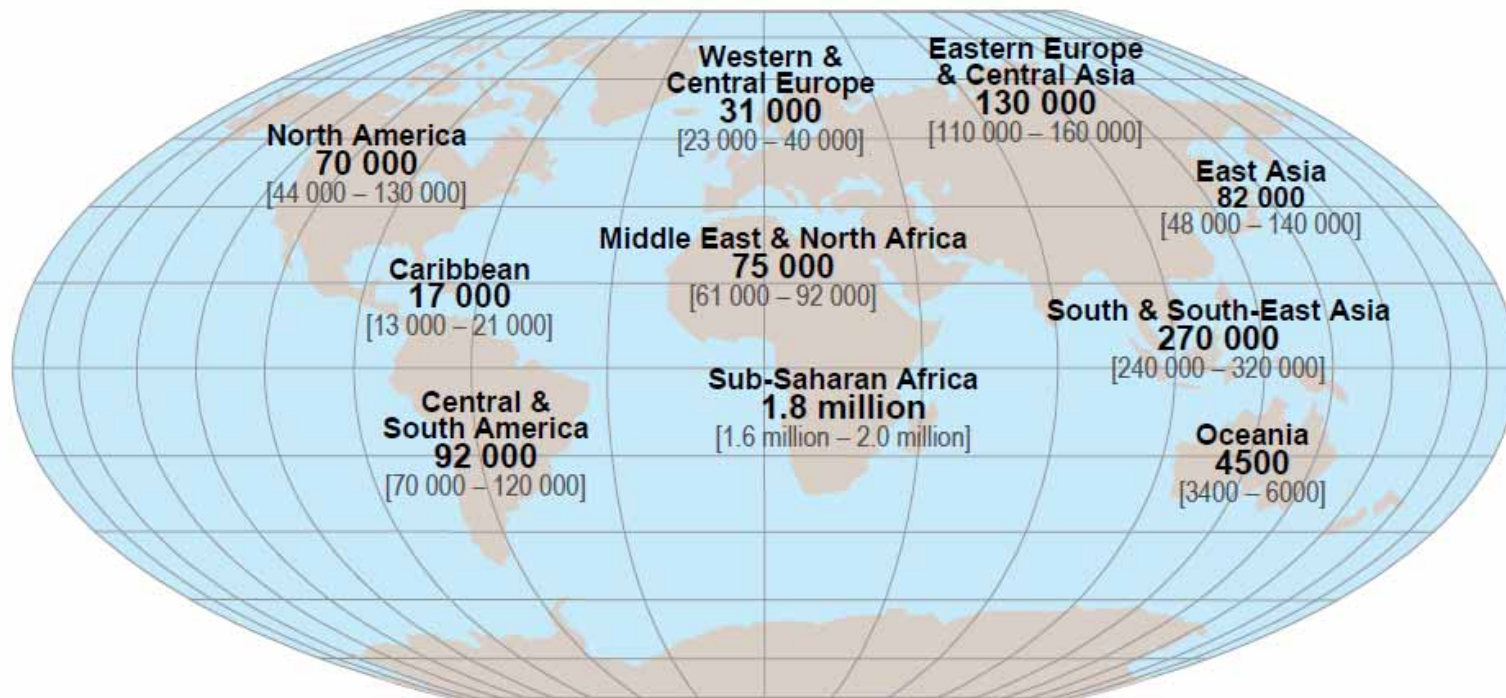
Total	1.8 million [1.6 million–2.1 million]
Adults	1.6 million [1.4 million–1.8 million]
Children (<15 years)	260 000 [150 000–360 000]

Adults and children estimated to be living with HIV | 2009



Total: 33.3 million [31.4 million – 35.3 million]

Estimated number of adults and children newly infected with HIV | 2009

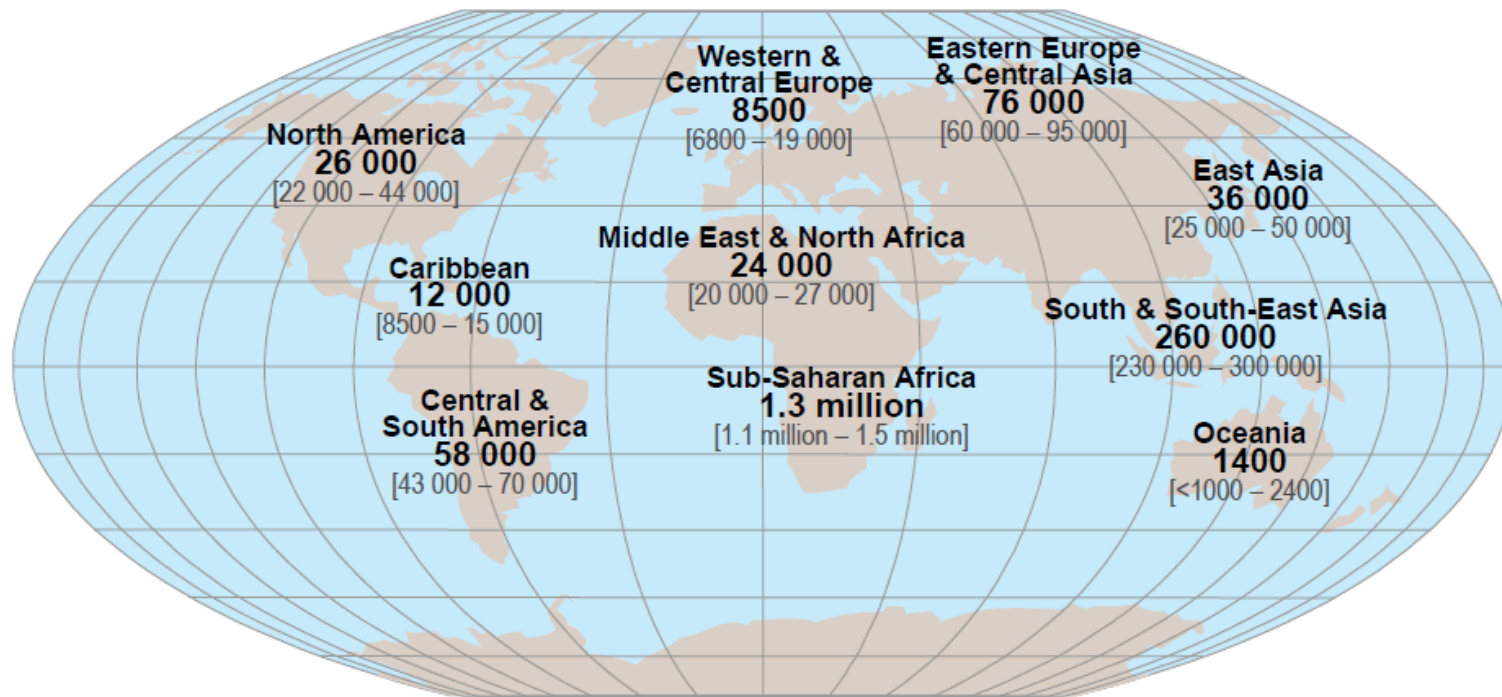


Total: 2.6 million [2.3 million – 2.8 million]

Over 7000 new HIV infections a day in 2009

- About **97%** are in low and middle income countries
- About **1000** are in children under 15 years of age
- About **6000** are in adults aged 15 years and older, of whom:
 - almost 51% are among women
 - about 41% are among young people (15-24)

Estimated adult and child deaths from AIDS | 2009



Total: 1.8 million [1.6 million – 2.1 million]

HIV prevalence in Central and South America

HIV prevalence among adults aged 15–49 years old in Central and South America, 1990 to 2009.

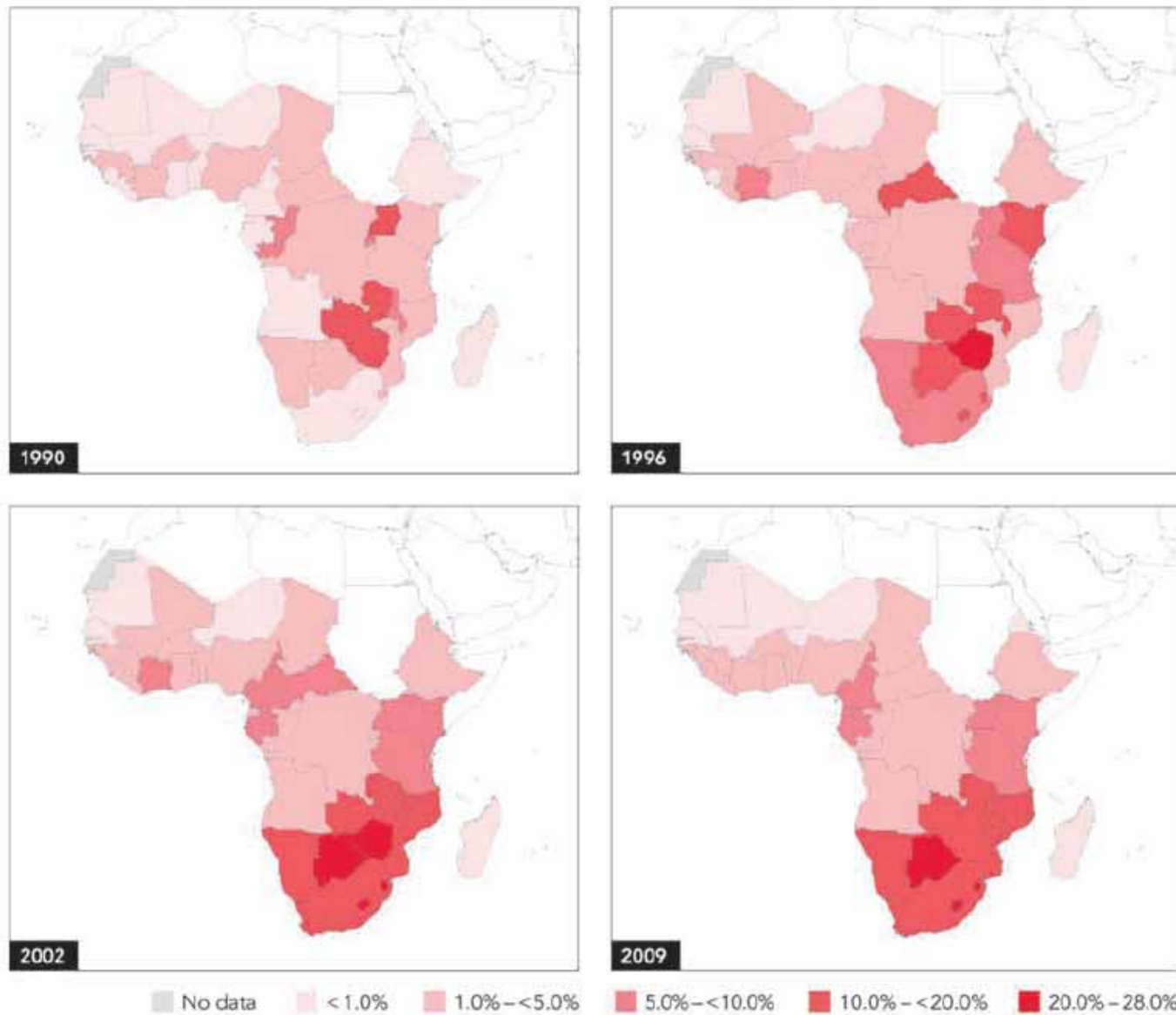
Source: UNAIDS



HIV prevalence in sub-Saharan Africa

HIV prevalence among adults aged 15–49 years old in sub-Saharan Africa, 1990 to 2009.

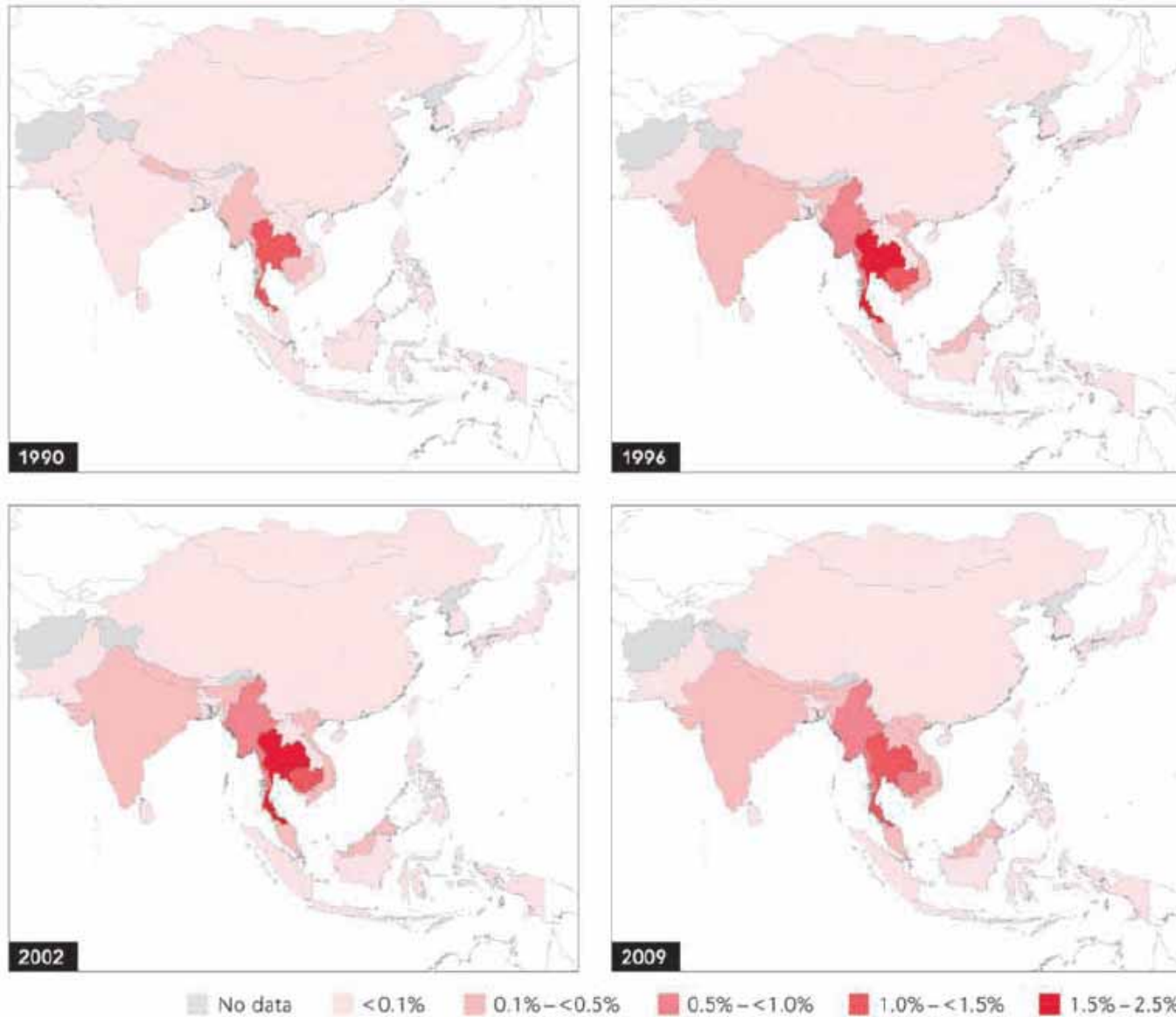
Source: UNAIDS



HIV prevalence in Asia

HIV prevalence among adults aged 15–49 years old in Asia, 1990 to 2009.

Source: UNAIDS



Estimated adult (15-49) HIV prevalence (%) for countries in 2009

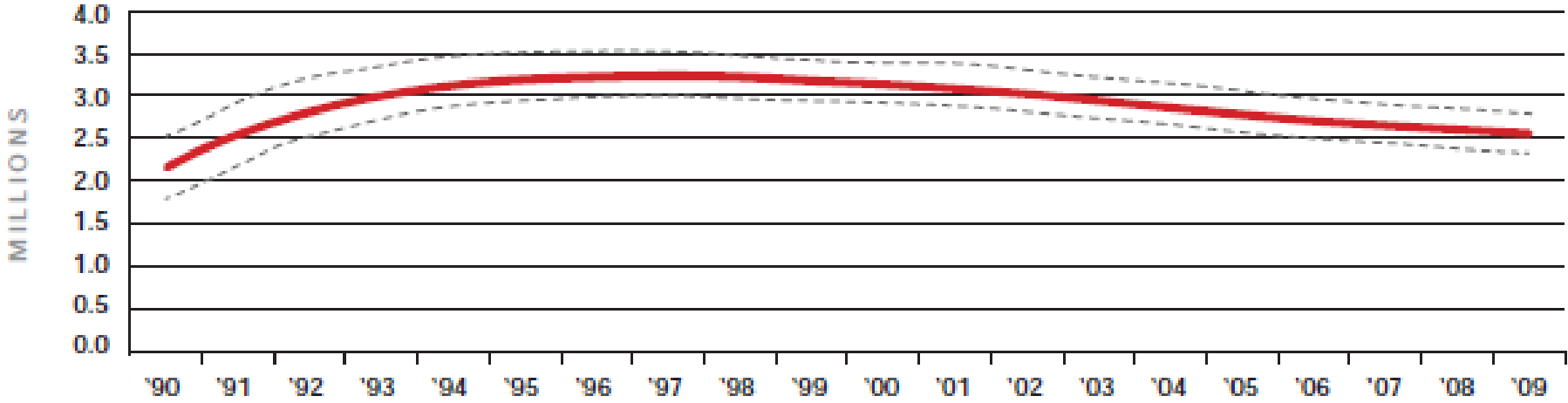
Country/Region	Estimate	[low estimate – high estimate]
Sub-Saharan Africa		
Angola	2.0	[1.6 – 2.4]
Benin	1.2	[1.0 – 1.3]
Botswana	24.8	[23.8 – 25.8]
Burkina Faso	1.2	[1.0 – 1.5]
Burundi	3.3	[2.9 – 3.5]
Cameroon	5.3	[4.9 – 5.8]
Central African Republic	4.7	[4.2 – 5.2]
Chad	3.4	[2.8 – 5.1]
Comoros	0.1	[<0.1 – 0.1]
Congo	3.4	[3.1 – 3.8]
Côte d'Ivoire	3.4	[3.1 – 3.9]
Democratic Republic of the Congo	...	[1.2 – 1.6]
Equatorial Guinea	5.0	[3.5 – 6.6]
Eritrea	0.8	[0.6 – 1.0]
Ethiopia	...	[1.0 – 1.2]
Gabon	5.2	[4.2 – 6.2]
Gambia	2.0	[1.3 – 2.9]
Ghana	1.8	[1.6 – 2.0]
Guinea	1.3	[1.1 – 1.6]
Guinea-Bissau	2.5	[2.0 – 3.0]
Kenya	6.3	[5.8 – 6.5]

Estimated adult (15-49) HIV prevalence (%) for countries in 2009

Country/Region	Estimate	[low estimate – high estimate]
Sub-Saharan Africa		
Lesotho	23.6	[22.3 – 25.2]
Liberia	1.5	[1.3 – 1.8]
Madagascar	0.2	[0.2 – 0.3]
Malawi	11.0	[10.0 – 12.1]
Mali	1.0	[0.8 – 1.3]
Mauritania	0.7	[0.6 – 0.9]
Mauritius	1.0	[0.7 – 1.3]
Mozambique	11.5	[10.6 – 12.2]
Namibia	13.1	[11.1 – 15.5]
Niger	0.8	[0.8 – 0.9]
Nigeria	3.6	[3.3 – 4.0]
Rwanda	2.9	[2.5 – 3.3]
Senegal	0.9	[0.7 – 1.0]
Sierra Leone	1.6	[1.4 – 2.1]
South Africa	17.8	[17.2 – 18.3]
Swaziland	25.9	[24.9 – 27.0]
Togo	3.2	[2.5 – 3.8]
Uganda	6.5	[5.9 – 6.9]
United Republic of Tanzania	5.6	[5.3 – 6.1]
Zambia	13.5	[12.8 – 14.1]
Zimbabwe	14.3	[13.4 – 15.4]

Figure 1.1
Number of people newly infected with HIV

Source: UNAIDS.

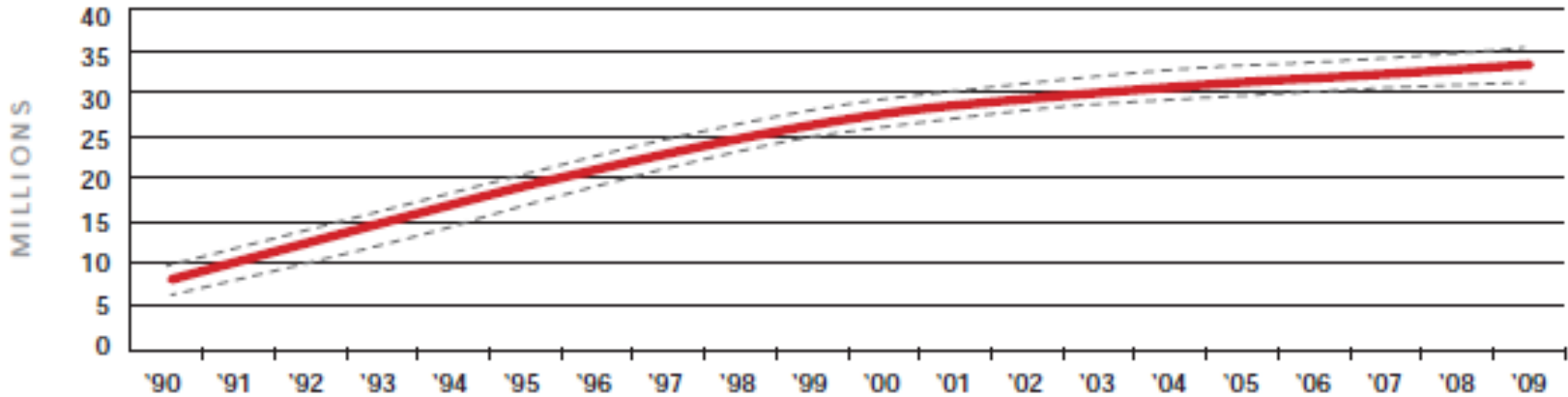


Note about Figures:
Dotted lines in figures represent ranges, solid lines represent the best estimate.

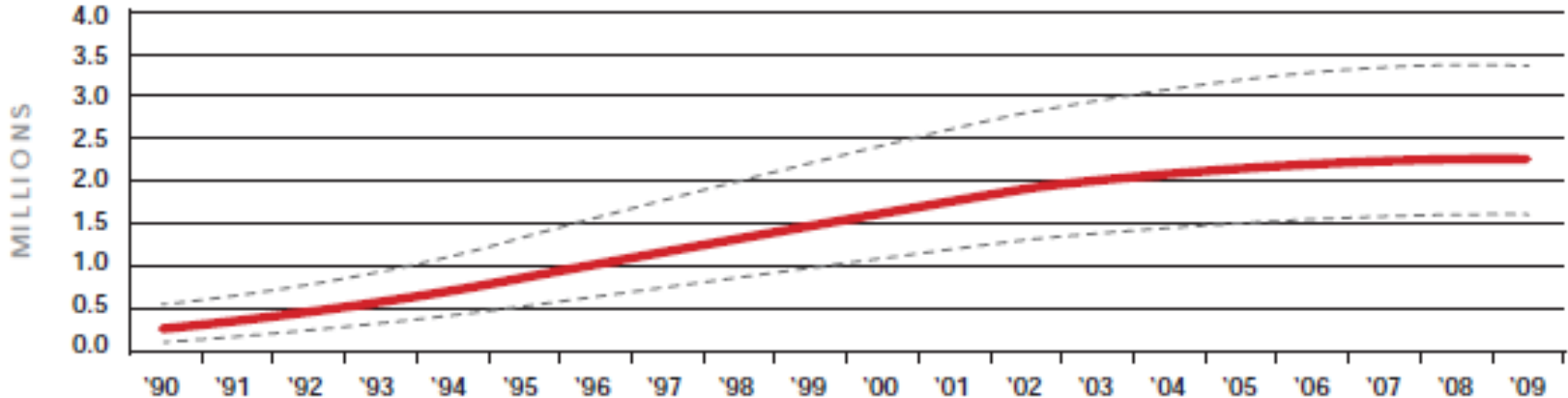
Global HIV trends, 1990 to 2009

Source: UNAIDS.

Number of people living with HIV

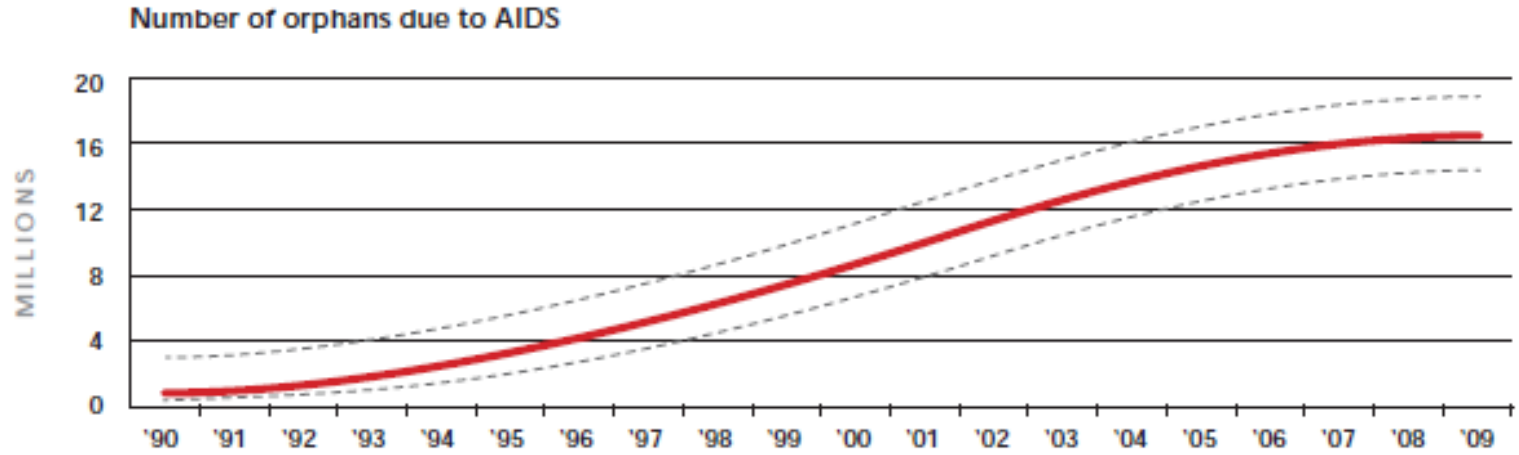
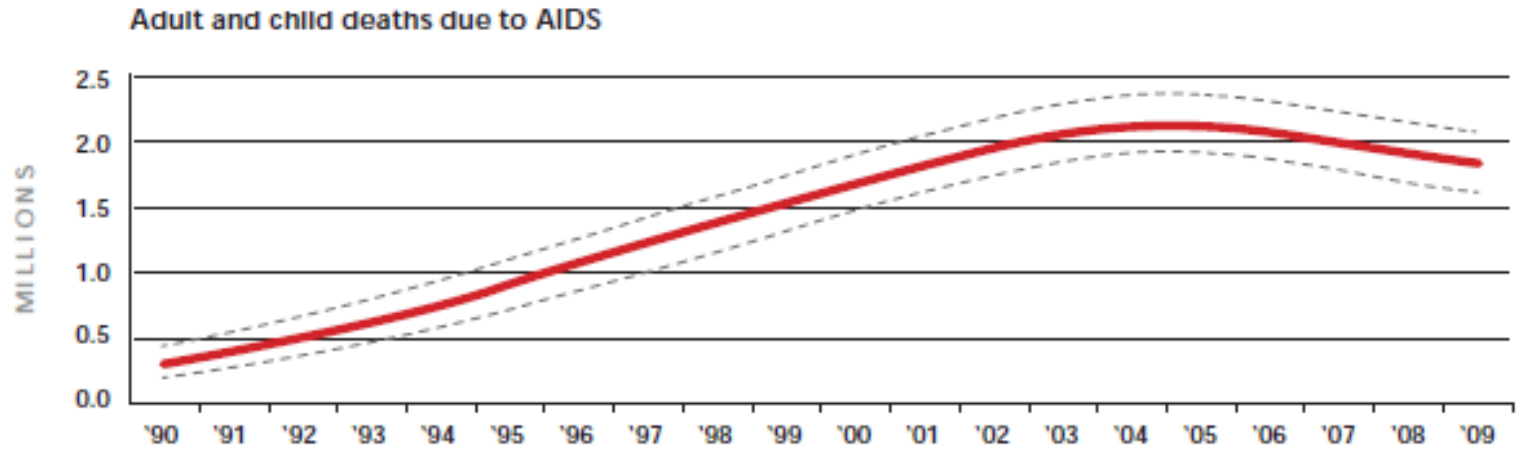


Number of children living with HIV



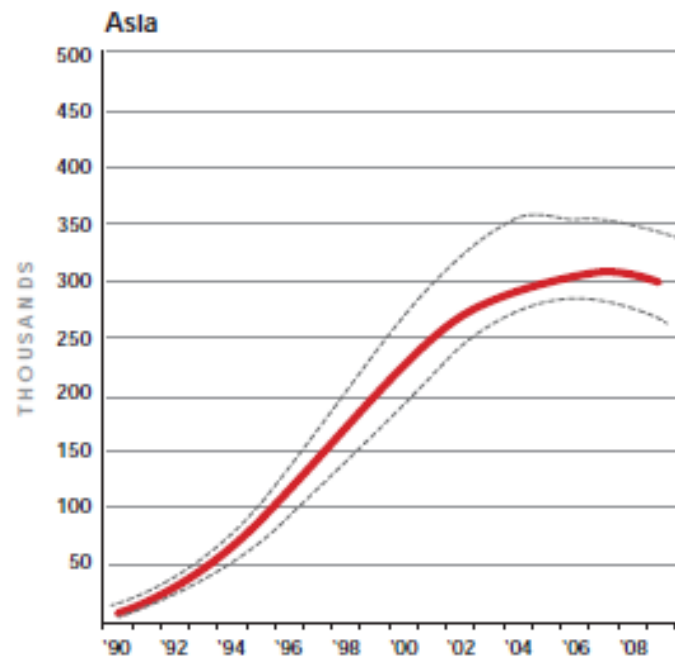
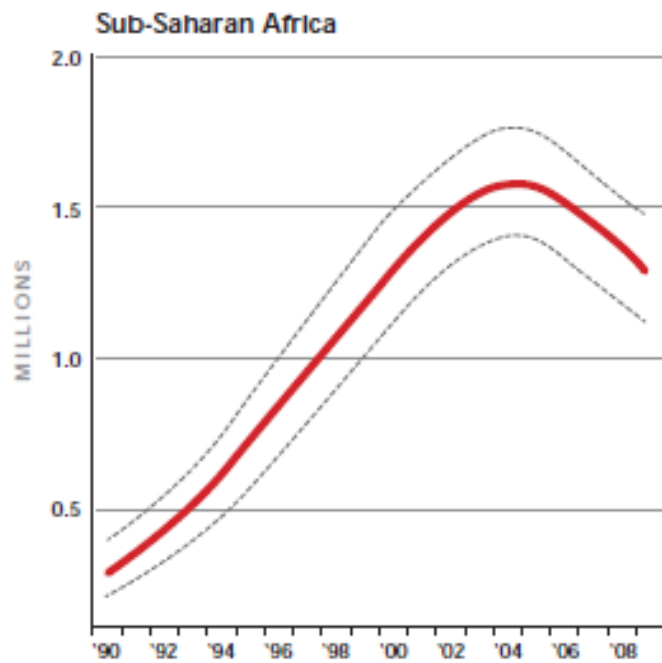
Global HIV trends, 1990 to 2009

Source: UNAIDS.



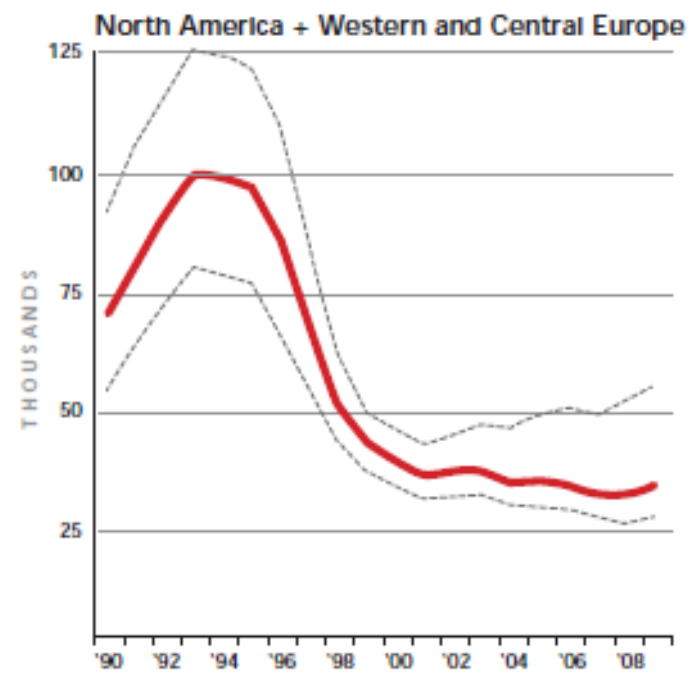
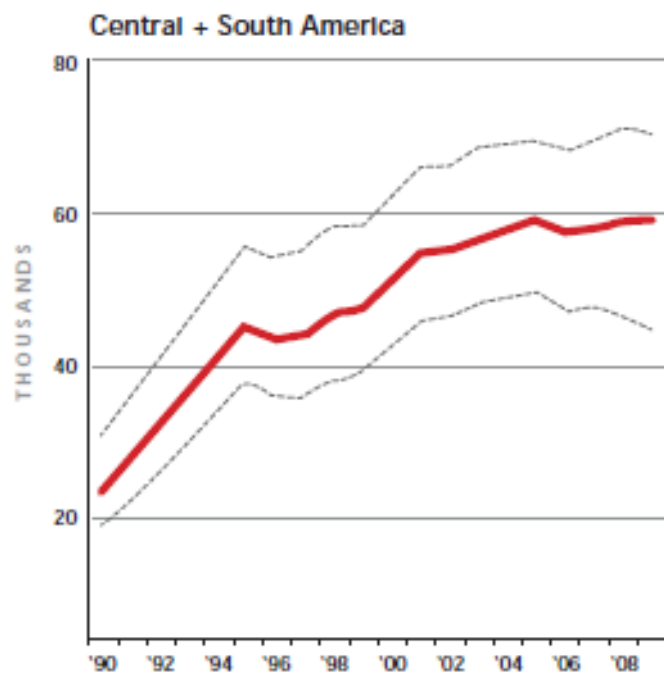
Annual AIDS-related deaths by region, 1990 to 2009

Source: UNAIDS.



Annual AIDS-related deaths by region, 1990 to 2009

Source: UNAIDS.

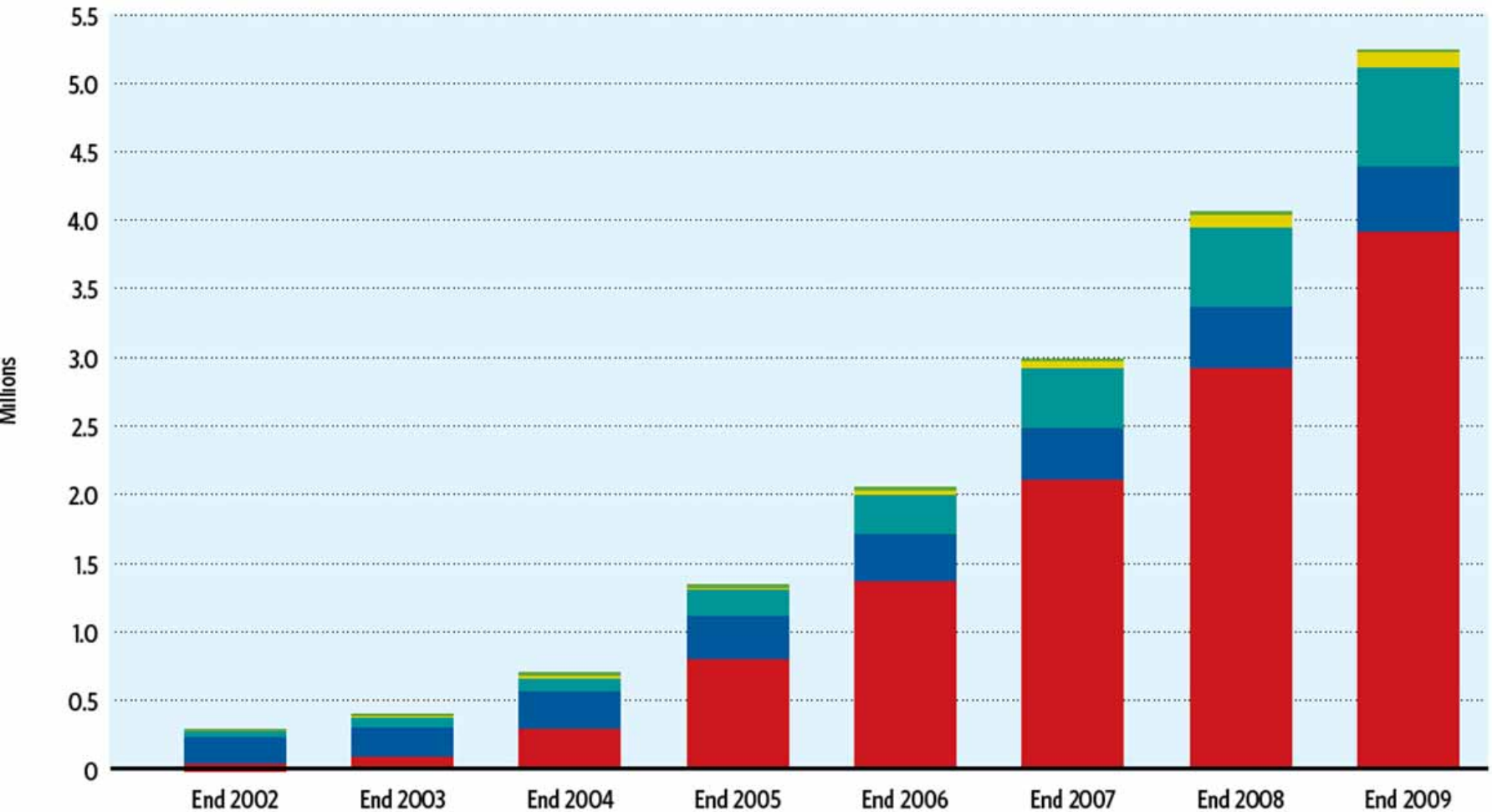
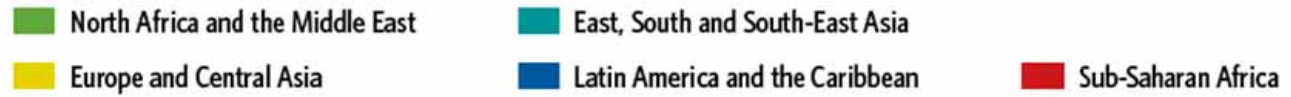


INCIDENCE

- Increasing >25%
- Stable
- Decreasing >25%
- Not included in analysis



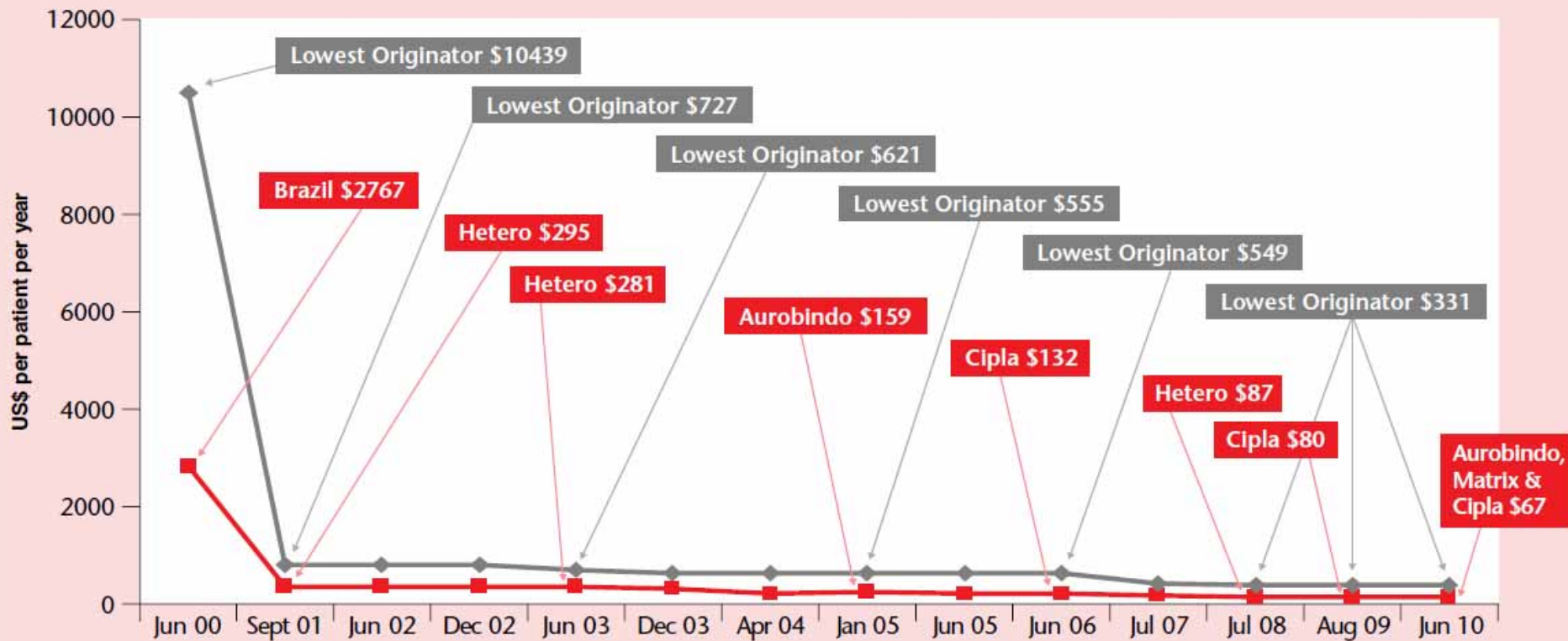
Number of people receiving antiretroviral therapy in low- and middle-income countries, by region, 2002–2009



Number of people (all age groups) receiving and needing antiretroviral therapy, and percentage coverage in low- and middle-income countries by region, 2008 to 2009

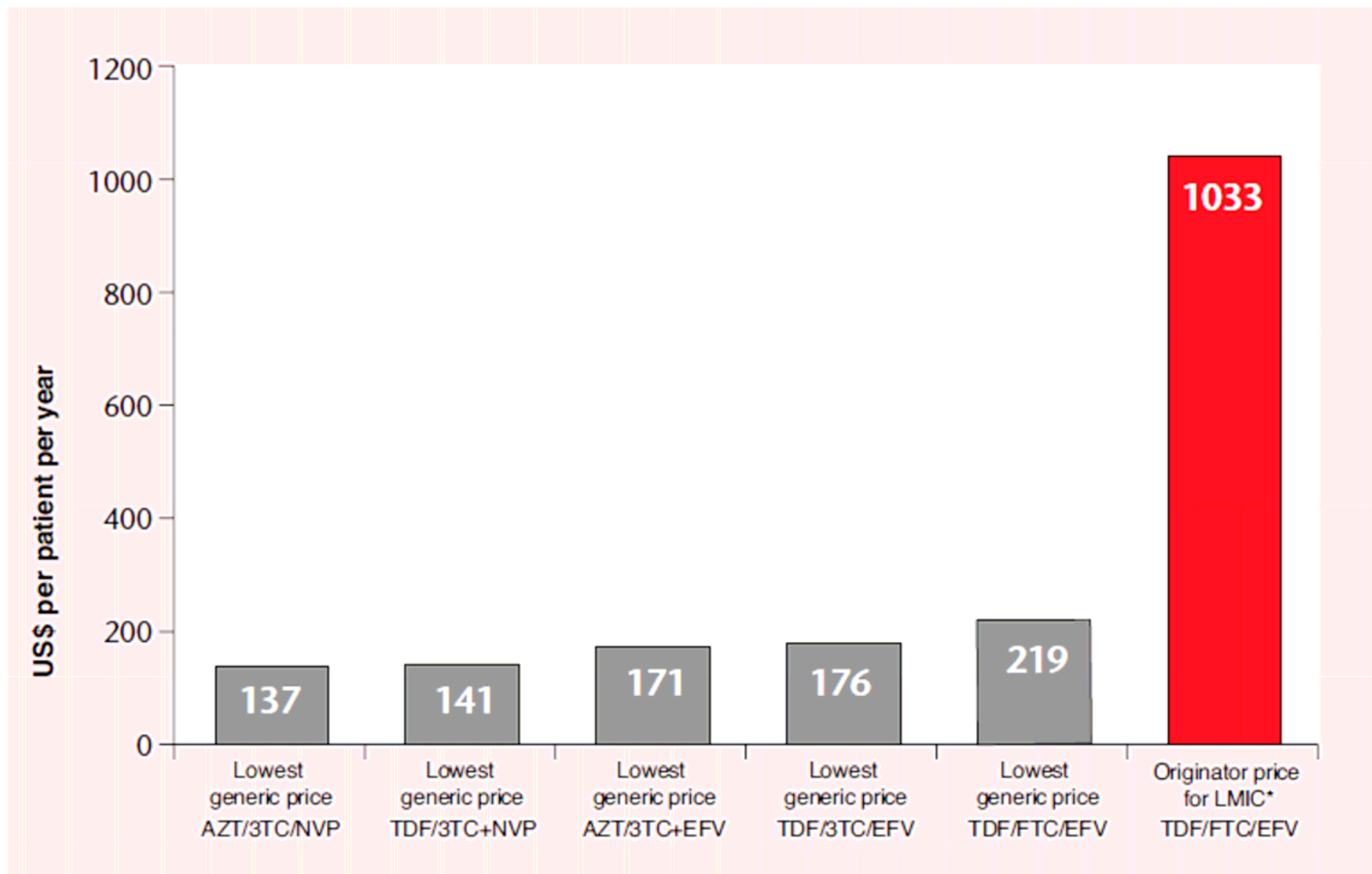
Geographical region	As of December 2009			As of December 2008		
	Number of people receiving antiretroviral therapy	Estimated number of people needing antiretroviral therapy, based on WHO 2010 guidelines [range] ^a	Antiretroviral therapy coverage, based on WHO 2010 guidelines [range] ^b	Number of people receiving antiretroviral therapy	Estimated number of people needing antiretroviral therapy, based on WHO 2010 guidelines [range] ^a	Antiretroviral therapy coverage, based on WHO 2010 guidelines [range] ^b
Sub-Saharan Africa	3 911 000	10 600 000 [9 700 000-11 500 000]	37% [34-40%]	2 950 000	10 400 000 [9 500 000-11 300 000]	28% [26-31%]
Eastern and Southern Africa	3 203 000	7 700 000 [7 200 000-8 300 000]	41% [38-45%]	2 416 000	7 600 000 [7 000 000-8 100 000]	32% [30-34%]
Western and Central Africa	709 000	2 900 000 [2 500 000-3 200 000]	25% [22-28%]	533 000	2 800 000 [2 500 000-3 200 000]	19% [17-22%]
Latin America and the Caribbean	478 000	950 000 [810 000-1 000 000]	50% [46-59%]	439 000	910 000 [790 000-1 000 000]	48% [44-56%]
Latin America	425 000	840 000 [700 000-940 000]	51% [45-61%]	400 000	810 000 [680 000- 900 000]	49% [45-59%]
Caribbean	52 400	110 000 [95 000-120 000]	48% [42-55%]	39 900	110 000 [93 000-120 000]	37% [33-43%]
East, South and South-East Asia	739 000	2 400 000 [2 000 000-2 900 000]	31% [26-36%]	571 000	2 300 000 [2 000 000-2 900 000]	25% [20-29%]
Europe and Central Asia	114 000	610 000 [550 000-710 000]	19% [16-21%]	84 400	570 000 [510 000-660 000]	15% [13-17%]
North Africa and the Middle East	12 000	100 000 [88 000-120 000]	11% [10-14%]	9 100	91 000 [75 000-110 000]	10% [9-12%]
Total	5 254 000	14 600 000 [13 500 000-15 800 000]	36% [33-39%]	4 053 000	14 300 000 [13 200 000-15 400 000]	28% [26-31%]





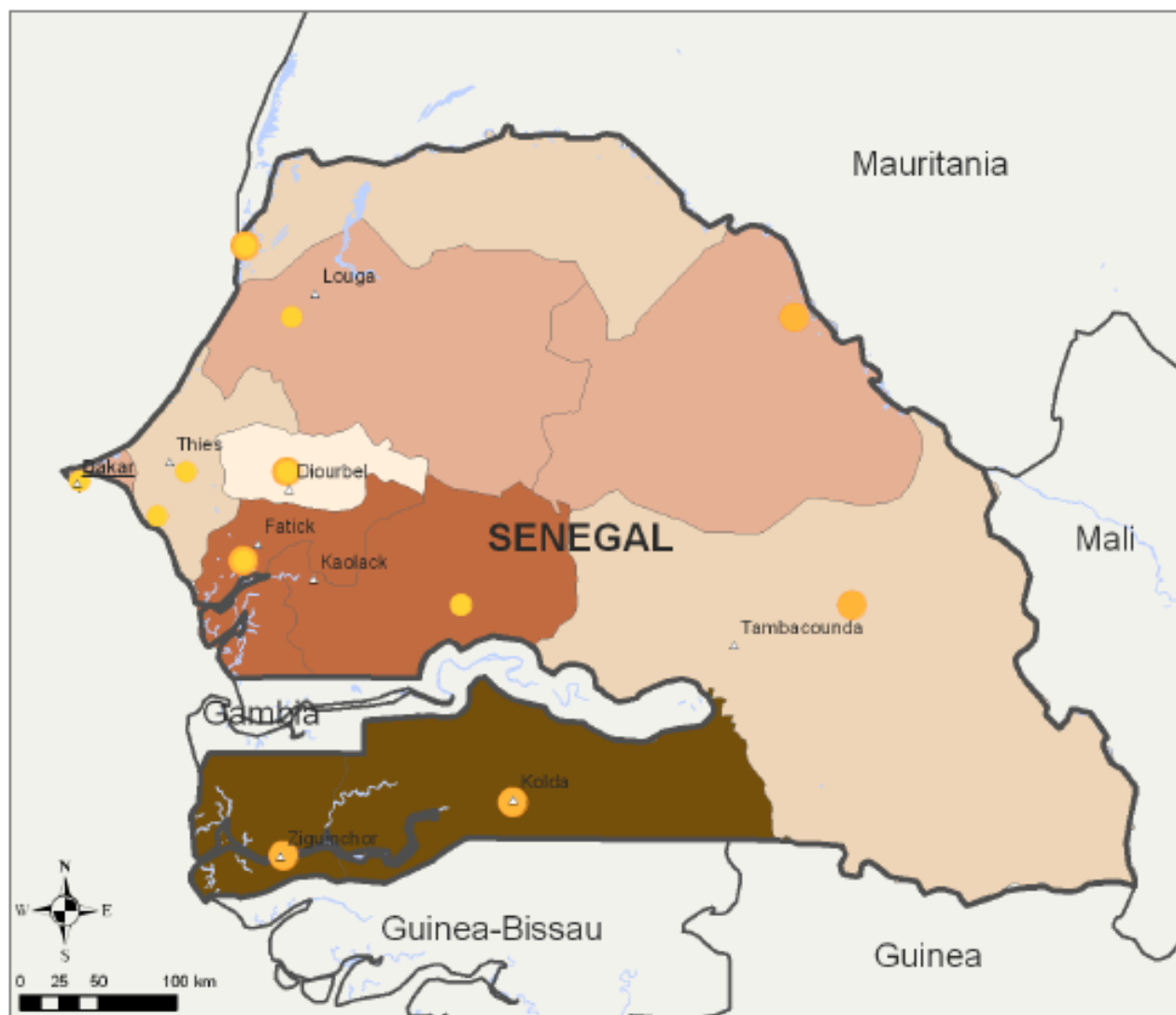
GRAPH 1: GENERIC COMPETITION AS A CATALYST FOR PRICE REDUCTIONS.

The fall in the price of first-line combinations of stavudine (d4T), lamivudine (3TC), and nevirapine (NVP), since 2000.



*LMIC – Lower middle-income countries (see annex 6)

GRAPH 2: THE PRICE OF NEWER, IMPROVED FIRST-LINE REGIMENS IN 2010.



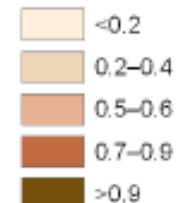
HIV sentinel surveillance in pregnant women, 2004–2008

HIV prevalence (%)



Sub-national HIV prevalence, 2005

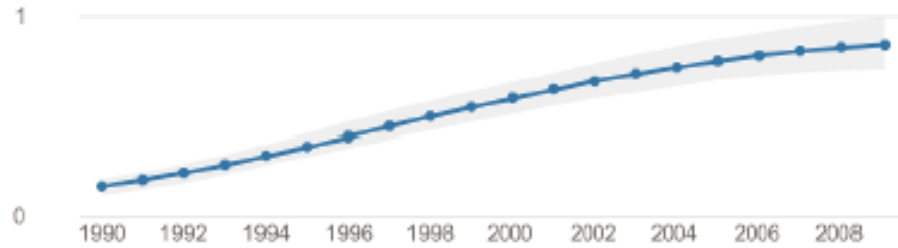
Prevalence among 15–49 years old (%)



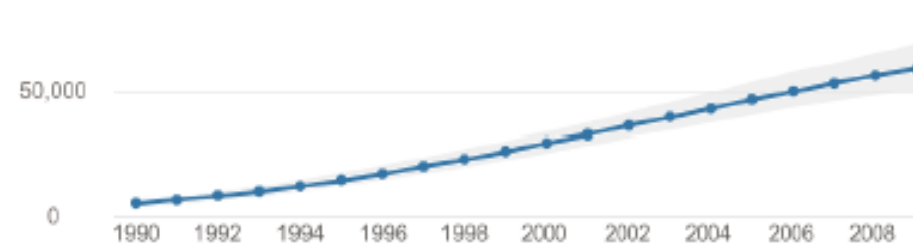
The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.
Map production: Public Health Information and Geographic Information Systems (GIS), WHO.

Data source: UNAIDS, WHO, CIESIN/FAO/CIAT, DCW, GeoNames, USCB, Ndiaye, Salif, et Mohamed Ayad, 2006. Enquête Démographique et de Santé au Sénégal 2005.

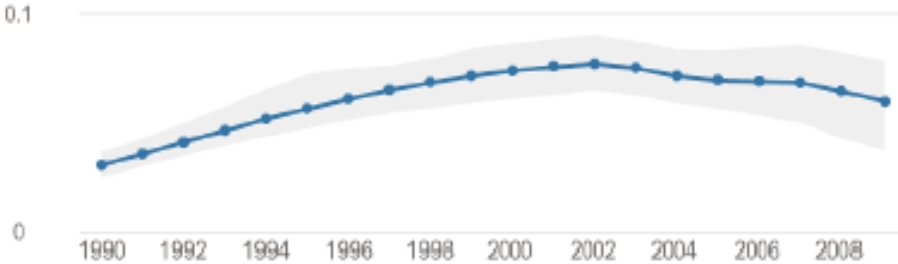
HIV prevalence-Ages 15-49(%)



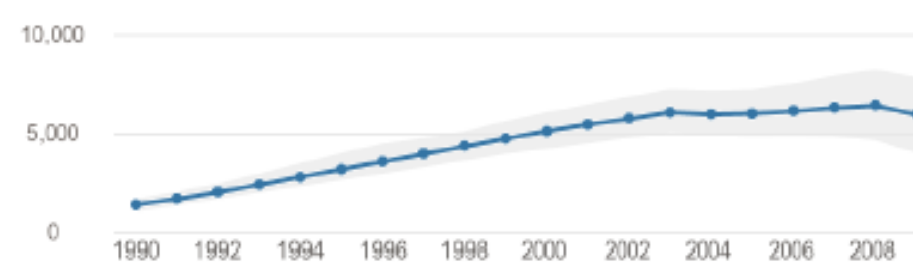
Number of people living with HIV



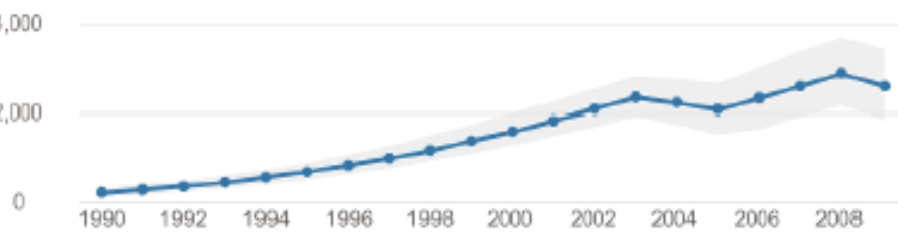
HIV incidence rate-Ages 15-49(%)



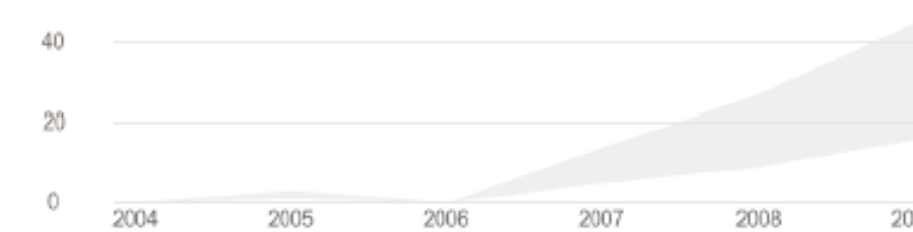
Number of new infections-All ages



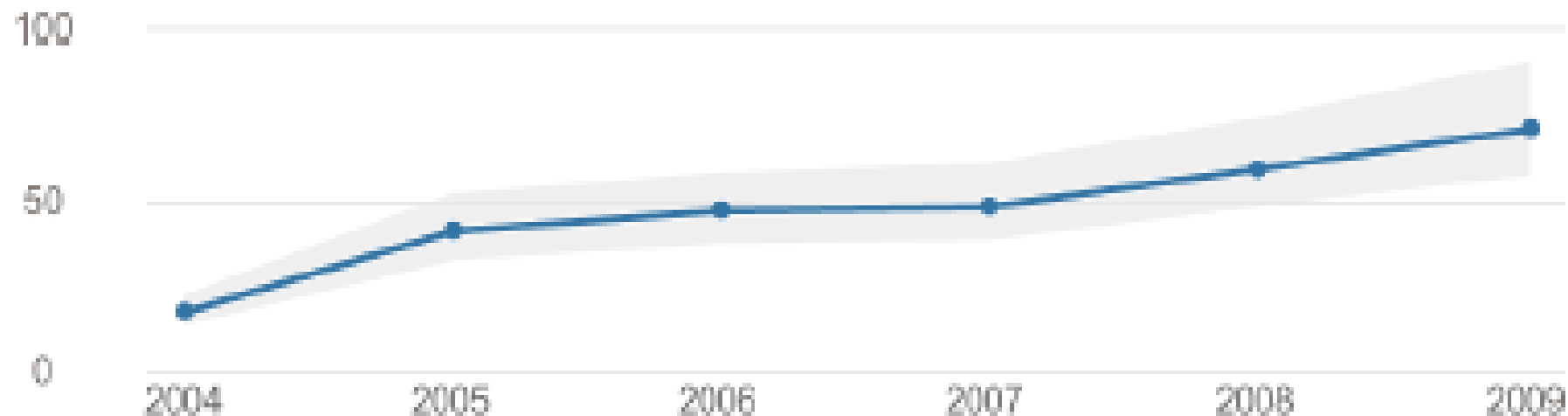
Annual number of AIDS deaths



PMTCT coverage (%)



ART coverage (%) CD4<200



ART coverage (%) CD4<350

