

# EPIDEMIC UPDATE

» THE OVERALL GROWTH OF THE GLOBAL AIDS EPIDEMIC APPEARS TO HAVE STABILIZED. THE ANNUAL NUMBER OF NEW HIV INFECTIONS HAS BEEN STEADILY DECLINING SINCE THE LATE 1990s AND THERE ARE FEWER AIDS-RELATED DEATHS DUE TO THE SIGNIFICANT SCALE UP OF ANTIRETROVIRAL THERAPY OVER THE PAST FEW YEARS. ALTHOUGH THE NUMBER OF NEW INFECTIONS HAS BEEN FALLING, LEVELS OF NEW INFECTIONS OVERALL ARE STILL HIGH, AND WITH SIGNIFICANT REDUCTIONS IN MORTALITY THE NUMBER OF PEOPLE LIVING WITH HIV WORLDWIDE HAS INCREASED.

### New HIV infections are declining

In 2009, there were an estimated 2.6 million [2.3 million–2.8 million] people who became newly infected with HIV. This is nearly one fifth (19%) fewer than the 3.1 million [2.9 million–3.4 million] people newly infected in 1999, and more than one fifth (21%) fewer than the estimated 3.2 million [3.0 million–3.5 million] in 1997, the year in which annual new infections peaked (Figure 2.1).

In 33 countries, the HIV incidence has fallen by more than 25% between 2001 and 2009 (Figure. 2.2); 22 of these countries are in sub-Saharan Africa. In sub-Saharan Africa, where the majority of new HIV infections continue to occur, an estimated 1.8 million [1.6 million–2.0 million] people became infected in 2009; considerably lower than the estimated 2.2 million [1.9 million–2.4 million] people in sub-Saharan Africa newly infected with HIV in 2001. This trend reflects a combination of factors, including the impact of HIV prevention efforts and the natural course of HIV epidemics.

Figure 2.1  
**Number of people newly infected with HIV**

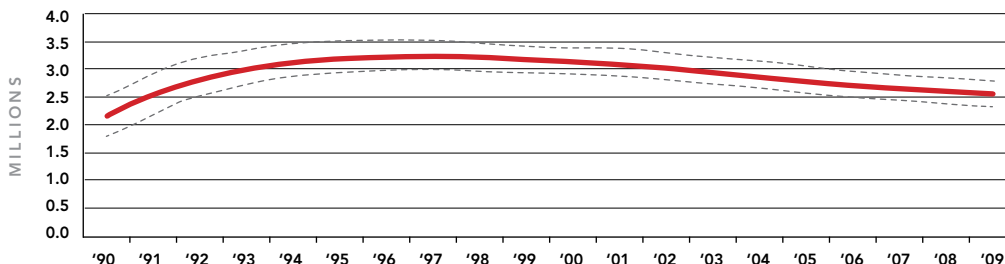
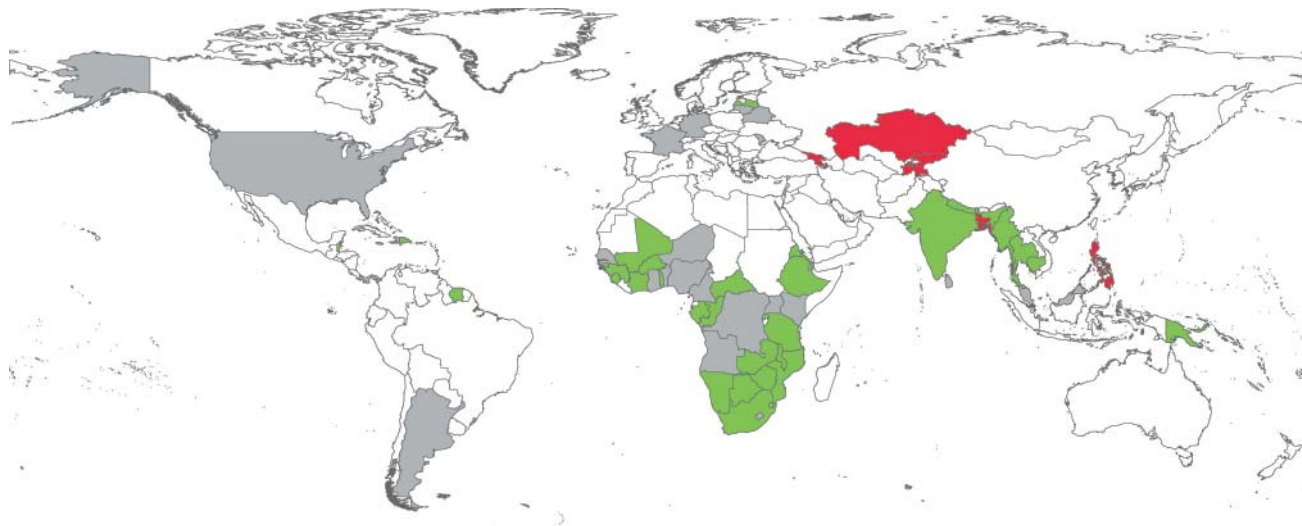


Figure 2.2  
**Changes in the incidence rate of HIV infection, 2001 to 2009, selected countries**

Source: UNAIDS.



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

*In the absence of a reliable diagnostic test that can directly measure the level of new HIV infections in a population, estimates of HIV incidence have been produced through modeling. The map includes 60 countries for which reliable estimates of new HIV infections over time were available from the 2010 round of country-specific estimation using the EPP/Spectrum tools, and 3 countries for which peer-reviewed publications with incidence trends were available. The EPP/Spectrum methods estimate HIV incidence trends from HIV prevalence over time combined with the changing level of antiretroviral therapy. The criteria for including countries in this analysis were as follows. EPP files were available and trends in EPP were not derived from workbook prevalence estimates; prevalence data were available up to at least 2007; there were at least four time points between 2001 and 2009 for which prevalence data were available for concentrated epidemics and at least three data points in the same period for generalized epidemics; for the majority of epidemic curves for a given country, EPP did not produce an artificial increase in HIV prevalence in recent years due to scarcity of prevalence data points; data were representative of the country; the EPP/Spectrum-derived incidence trend was not in conflict with the trend in case reports of new HIV diagnoses; and the EPP/Spectrum-derived incidence trend was not in conflict with modelled incidence trends derived from age-specific prevalence in national survey results. For some countries with complex epidemics including multiple populations groups with different risk behaviours as well as major geographic differences, such as Brazil, China and the Russian Federation, this type of assessment is highly complex and it could not be concluded in the 2010 estimation round. UNAIDS will continue to work with countries and partners to improve the quality of available information and modeling methodologies to include HIV incidence data for additional countries in future reports.*

Several regions and countries do not fit the overall trend. In seven countries, the HIV incidence increased by more than 25% between 2001 and 2009. In Western, Central, and Eastern Europe, Central Asia, and North America, the rates of annual new HIV infections have been stable for at least the past five years. However, evidence is increasing of a resurgence of HIV in several high-income countries among men who have sex with men. In Eastern Europe and Central Asia, high rates of HIV transmission continue to occur in networks of people who inject drugs and their sexual partners.

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

### Young people leading a revolution in HIV prevention

A recent analysis among young people provides further evidence of decreasing incidence and safer sexual behaviour (Table 2.1). Seven countries showed a statistically significant decline of 25% or more in HIV prevalence (the percentage of people living with HIV) by 2008 among young pregnant women attending antenatal clinics.

Table 2.1

### HIV prevalence and behaviour

Trends in HIV prevalence and behaviour among young people in countries most severely affected by HIV

Source: UNAIDS.

	Prevalence data were available from antenatal care surveillance	Prevalence trend among antenatal care attendees		National HIV prevalence surveys conducted	Trend in HIV prevalence from national surveys		Percentage who have had sex by age 15		Percentage who have had sex with more than one partner in past year		Proportion who have had more than one partner not using condoms during last sex		
		URBAN	RURAL		YEARS	F	M	F	M	F	M	F	M
Angola	2004–2007		↑										
Bahamas	2000–2008	↓											
Belize	NA												
Botswana	2001–2006	⊘	⊘	2004, 2008	⊘	⊘							
Burundi	2000–2007	↓	↑	2002, 2007	↓	↑	↑						
Cameroon	NA						⊘	⊘	⊘	⊘	⊘	⊘	
Central African Republic	ID						↑	↓					
Chad	ID						↓	↑	↓	⊘	↑	↓	
Congo	NA												
Côte d'Ivoire	2000–2008	⊘	⊘				⊘	↑	⊘	⊘	⊘	↓	
Djibouti	ID												
Ethiopia	2001–2005	⊘	↓				⊘	⊘	⊘	⊘		↑	
Gabon	ID												
Guyana	NA												
Haiti	2000–2007	↓	↑				↑	↑	↑	↓	↑	⊘	
Kenya	2000–2005	⊘	⊘	2003, 2007	↓	↑	↔	↓	⊘	⊘	↑	⊘	
Lesotho	2003–2007	↓	↓										
Malawi	1999–2007	⊘	↑				⊘	⊘	↑	⊘	↔	↓	
Mozambique	2001–2007	↔					↓	↑					
Namibia	2002–2008	⊘	⊘				↔	↓	↔	↓	⊘	↓	
Nigeria	2003–2008	↓	↓				⊘	↓					
Rwanda	2002–2007	↓	↓				↑	↑	↔	↓			
South Africa	2000–2007	↔		2002, 2005, 2007		⊘			↓	↑			
Suriname	NA												
Swaziland	2002–2008	↓	↔										
Togo	2004–2007	↑	↑										
Uganda	2003–2008	↑	↑				⊘	↓	↑	↔	⊘	⊘	
United Republic of Tanzania	2002–2006	↓	↓	2003, 2004, 2007	↓	⊘	↓	⊘	⊘	⊘	⊘	⊘	
Zambia	2002–2006	↓	↓	2002, 2007	⊘	↑	⊘	⊘	⊘	⊘	⊘	↓	
Zimbabwe	2000–2006	⊘	⊘	2002, 2006	⊘	↓	↓	⊘	⊘	⊘	⊘	↔	

NOTES: NA=Not Available ID=Insufficient Data M=Male F=Female  
 ↑ Increasing Trends ↓ Decreasing Trends ↔ No Evidence of Change ⊘ Declining trend is statistically significant

Five countries—Botswana, South Africa, United Republic of Tanzania, Zambia, and Zimbabwe—showed a significant decline in HIV prevalence among young women or men in national surveys. Sexual behaviour changed in most countries. In eight countries with significant declines in HIV prevalence, the sexual behaviour of either men or women also changed significantly.

### **New infections among children decreasing**

As access to services for preventing the mother-to-child transmission of HIV has increased, the total number of children being born with HIV has decreased. An estimated 370 000 [230 000–510 000] children were newly infected with HIV in 2009 (a drop of 24% from five years earlier).

### **AIDS-related deaths are decreasing**

The number of annual AIDS-related deaths worldwide is steadily decreasing from the peak of 2.1 million [1.9 million–2.3 million] in 2004 to an estimated 1.8 million [1.6 million–2.1 million] in 2009 (Figure 2.3). The decline reflects the increased availability of antiretroviral therapy, as well as care and support, to people living with HIV, particularly in middle- and low-income countries; it is also a result of decreasing incidence starting in the late 1990s.

The effects of antiretroviral therapy are especially evident in sub-Saharan Africa, where an estimated 320 000 (or 20%) fewer people died of AIDS-related causes in 2009 than in 2004, when antiretroviral therapy began to be dramatically expanded (Figure 2.5).

AIDS-related mortality began to decline in sub-Saharan Africa and the Caribbean in 2005. Different patterns have emerged in other regions. In North America and Western and Central Europe, deaths due to AIDS began to decline soon after antiretroviral therapy was introduced in 1996. In Asia and Central and South America, the number of deaths has stabilized, but there is no indication yet of decline. Deaths continue to increase in Eastern Europe.

Globally, deaths among children younger than 15 years of age are also declining. The estimated 260 000 [150 000–360 000] children who died from AIDS-related illnesses in 2009 were 19% fewer than the estimated 320 000 [210 000–430 000] who died in 2004. This trend reflects the steady expansion of services to prevent transmission of HIV to infants and an increase (albeit slow) in access to treatment for children.

# 19%

Estimated decrease in AIDS-related deaths globally among children from 2004 to 2009.

Table 2.2

**Regional HIV and AIDS statistics, 2001 and 2009**

Regional figures on adults and children newly infected and living with HIV and AIDS-related deaths

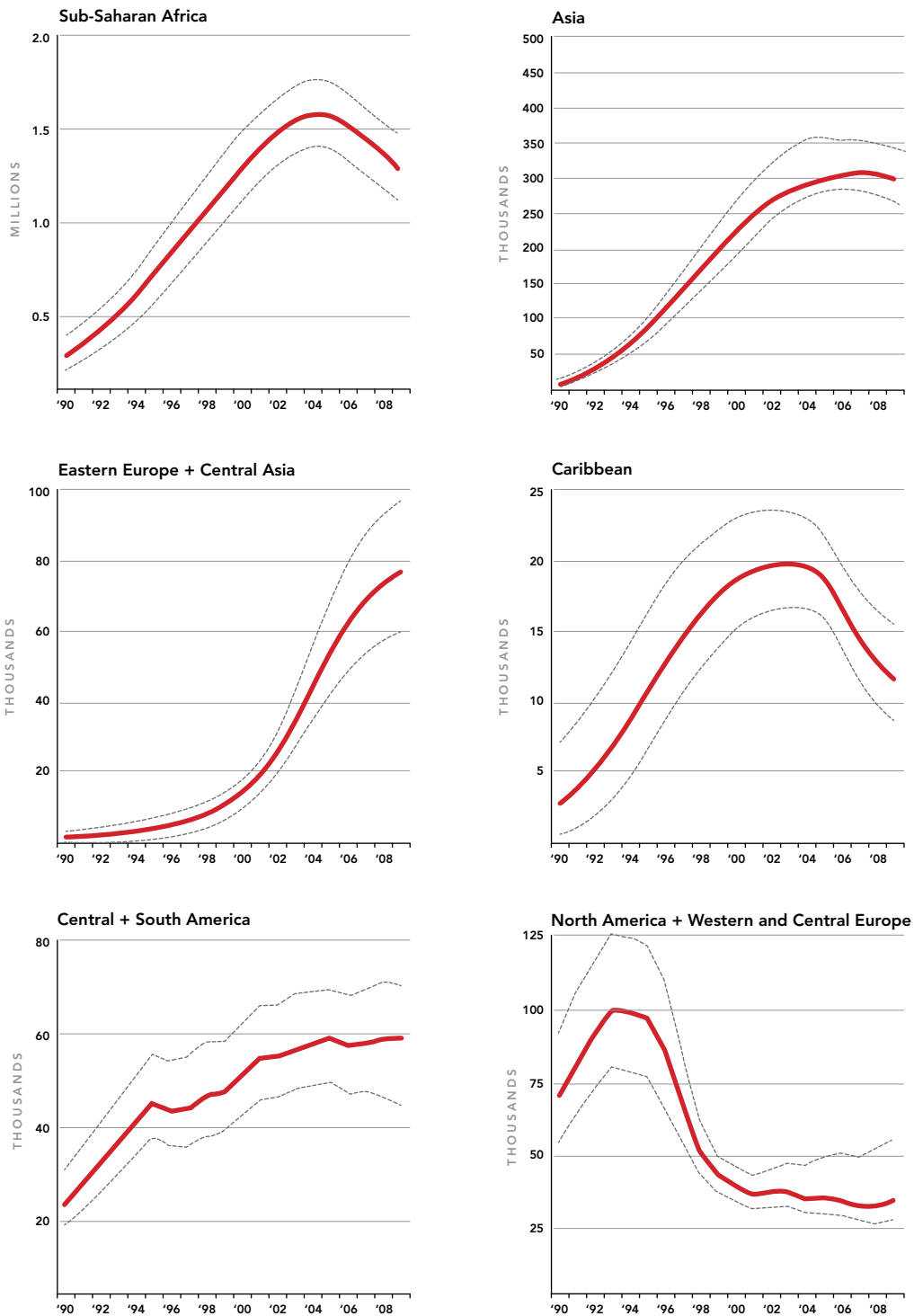
Source: UNAIDS.

		Adults and children living with HIV	Adults and children newly infected with HIV	% Adult prevalence (15–49 years)	AIDS-related deaths among adults and children
SUB-SAHARAN AFRICA	2009	22.5 million [20.9–24.2 million]	1.8 million [1.6–2.0 million]	5.0 [4.7–5.2]	1.3 million [1.1–1.5 million]
	2001	20.3 million [18.9–21.7 million]	2.2 million [1.9–2.4 million]	5.9 [5.6–6.1]	1.4 million [1.2–1.6 million]
MIDDLE EAST AND NORTH AFRICA	2009	460 000 [400 000–530 000]	75 000 [61 000–92 000]	0.2 [0.2–0.3]	24 000 [20 000–27 000]
	2001	180 000 [150 000–210 000]	36 000 [32 000–42 000]	0.1 [0.1–0.1]	8300 [6300–11 000]
SOUTH AND SOUTH-EAST ASIA	2009	4.1 million [3.7–4.6 million]	270 000 [240 000–320 000]	0.3 [0.3–0.3]	260 000 [230 000–300 000]
	2001	3.8 million [3.5–4.2 million]	380 000 [350 000–430 000]	0.4 [0.3–0.4]	230 000 [210 000–280 000]
EAST ASIA	2009	770 000 [560 000–1.0 million]	82 000 [48 000–140 000]	0.1 [0.1–0.1]	36 000 [25 000–50 000]
	2001	350 000 [250 000–480 000]	64 000 [47 000–88 000]	<0.1 [<0.1–<0.1]	15 000 [9400–28 000]
OCEANIA	2009	57 000 [50 000–64 000]	4500 [3400–6000]	0.3 [0.2–0.3]	1400 [<1000–2400]
	2001	29 000 [23 000–35 000]	4700 [3800–5600]	0.2 [0.1–0.2]	<1000 [<500–1100]
CENTRAL AND SOUTH AMERICA	2009	1.4 million [1.2–1.6 million]	92 000 [70 000–120 000]	0.5 [0.4–0.6]	58 000 [43 000–70 000]
	2001	1.1 million [1.0–1.3 million]	99 000 [85 000–120 000]	0.5 [0.4–0.5]	53 000 [44 000–65 000]

		Adults and children living with HIV	Adults and children newly infected with HIV	% Adult prevalence (15–49 years)	AIDS-related deaths among adults and children
CARIBBEAN	2009	240 000 [220 000–270 000]	17 000 [13 000–21 000]	1.0 [0.9–1.1]	12 000 [8500–15 000]
	2001	240 000 [210 000–270 000]	20 000 [17 000–23 000]	1.1 [1.0–1.2]	19 000 [16 000–23 000]
EASTERN EUROPE AND CENTRAL ASIA	2009	1.4 million [1.3–1.6 million]	130 000 [110 000–160 000]	0.8 [0.7–0.9]	76 000 [60 000–95 000]
	2001	760 000 [670 000–890 000]	240 000 [210 000–300 000]	0.4 [0.4–0.5]	18 000 [14 000–23 000]
WESTERN AND CENTRAL EUROPE	2009	820 000 [720 000–910 000]	31 000 [23 000–40 000]	0.2 [0.2–0.2]	8500 [6800–19 000]
	2001	630 000 [570 000–700 000]	31 000 [27 000–35 000]	0.2 [0.2–0.2]	7300 [5700–11 000]
NORTH AMERICA	2009	1.5 million [1.2–2.0 million]	70 000 [44 000–130 000]	0.5 [0.4–0.7]	26 000 [22 000–44 000]
	2001	1.2 million [960 000–1.4 million]	66 000 [54 000–81 000]	0.4 [0.4–0.5]	30 000 [26 000–35 000]
TOTAL	2009	33.3 million [31.4–35.3 million]	2.6 million [2.3–2.8 million]	0.8 [0.7–0.8]	1.8 million [1.6–2.1 million]
	2001	28.6 million [27.1–30.3 million]	3.1 million [2.9–3.4 million]	0.8 [0.7–0.8]	1.8 million [1.6–2.0 million]

Figure 2.3  
**Annual AIDS-related deaths by region, 1990-2009**

Source: UNAIDS.



### Trends in the number of people living with HIV

UNAIDS estimates that there were 33.3 million [31.4 million–35.3 million] people living with HIV at the end of 2009 compared with 26.2 million [24.6 million–27.8 million] in 1999—a 27% increase (Figure 2.4 and Figure 2.5). Although the annual number of new HIV infections has been steadily declining since the late 1990s, this decrease is offset by the reduction in AIDS-related deaths due to the significant scale up of antiretroviral therapy over the past few years (Table 2.2).

This report revises the estimate of the number of people living with HIV in 2008 of 33.4 million [31.1 million–35.8 million] published in *AIDS epidemic update: November 2009*, to 32.8 million [30.9 million–34.7 million], which is within the uncertainty range of the previous estimate. This revision is based on additional data becoming available for many countries, including data from population-based surveys such as in Mozambique. *AIDS epidemic update: November 2009* included Mexico in Latin America. This report includes Mexico in North America and categorizes the rest of Latin America as Central and South America. This report presents trend analysis based on the new definition of these regions.

The estimated number of children living with HIV increased to 2.5 million [1.7 million–3.4 million] in 2009 (Figure 2.3). The proportion of women living with HIV has remained stable, at slightly less than 52% of the global total (Figure 2.6).

Figure 2.4  
Global prevalence of HIV, 2009

Source: UNAIDS.

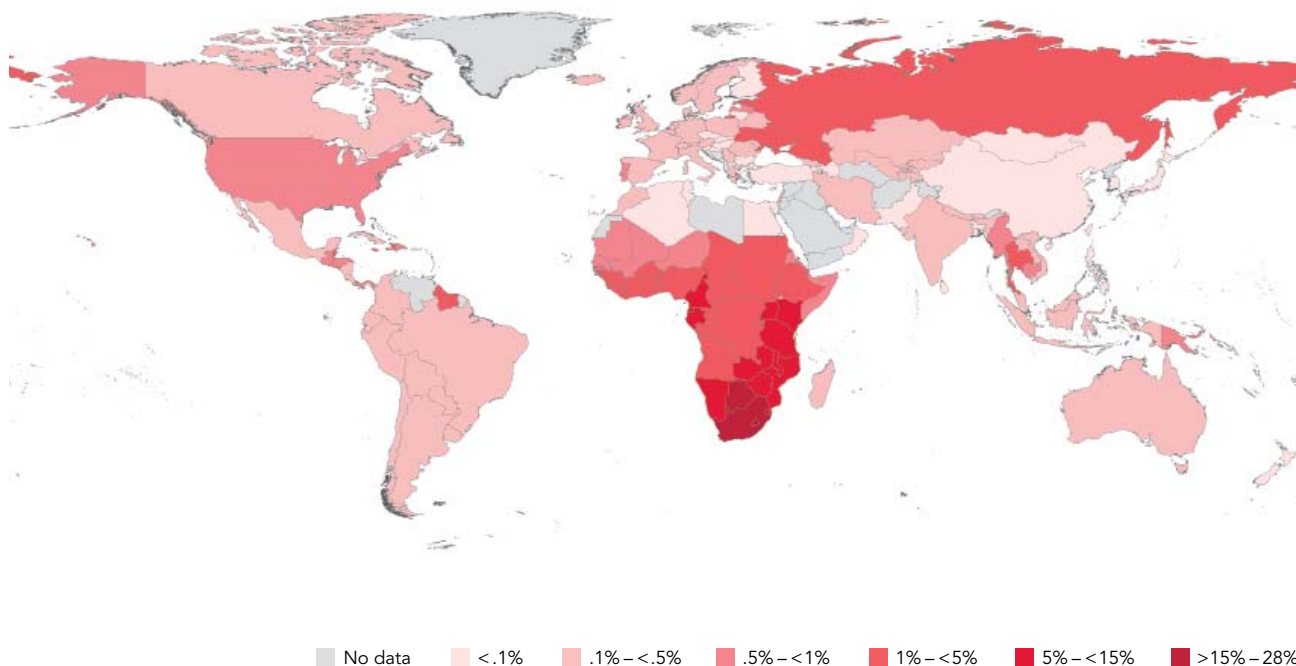
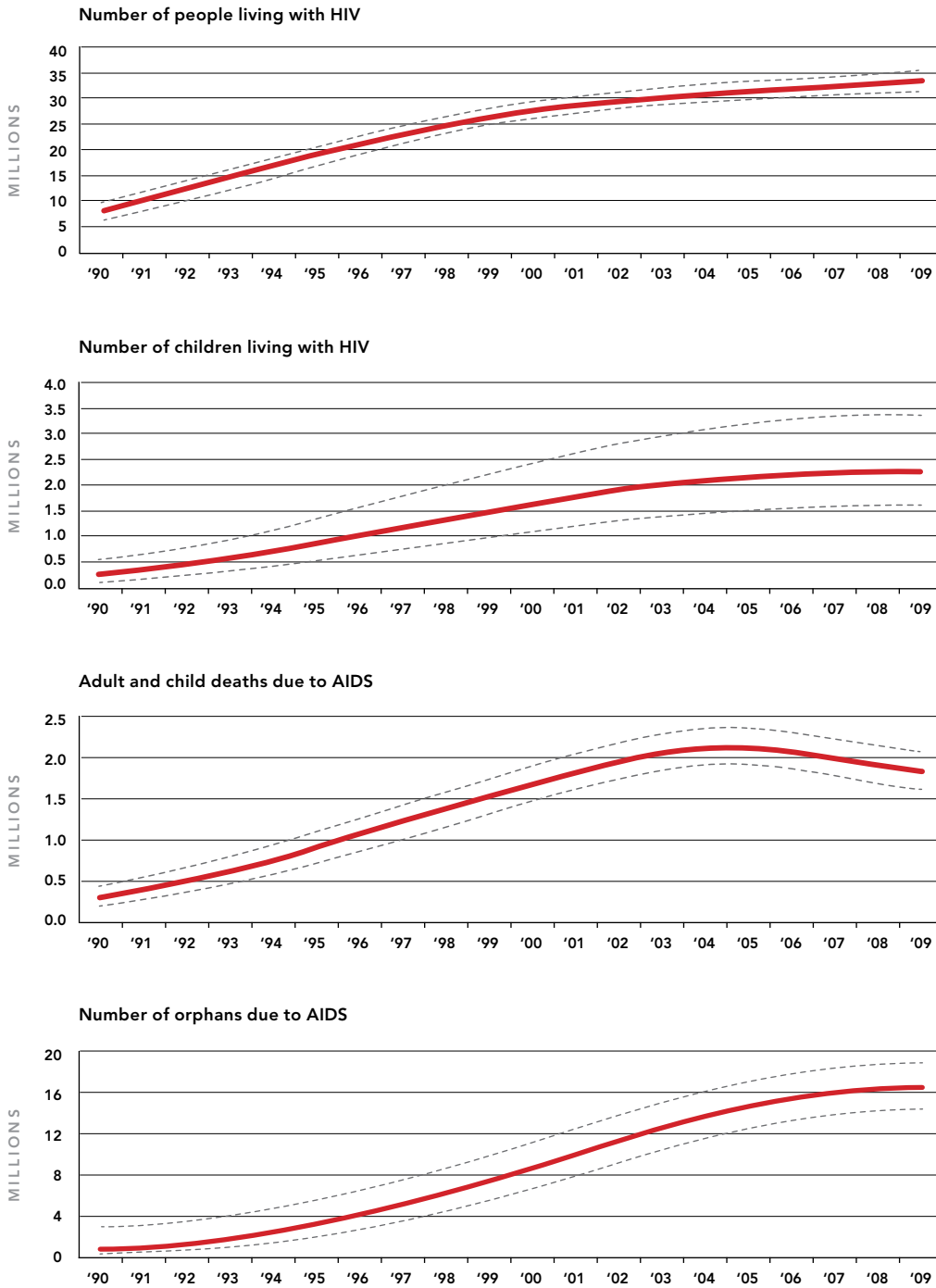


Figure 2.5  
**Global HIV trends, 1990 to 2009**

Source: UNAIDS.



Sub-Saharan Africa still bears an inordinate share of the global HIV burden. Although the rate of new HIV infections has decreased, the total number of people living with HIV continues to rise. In 2009, that number reached 22.5 million [20.9 million–24.2 million], 68% of the global total. Sub-Saharan Africa has more women than men living with HIV.

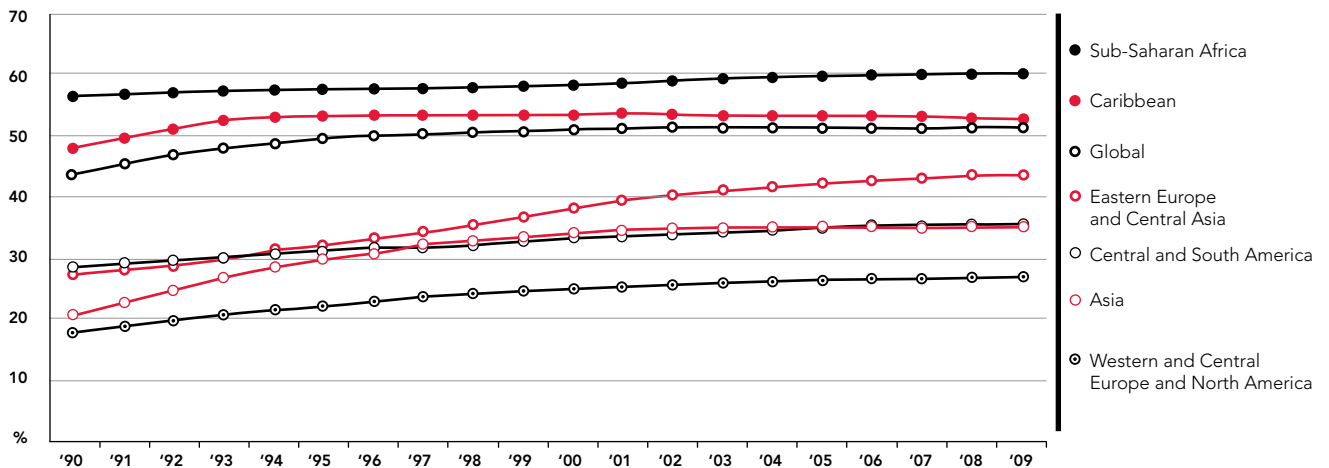
The largest epidemics in sub-Saharan Africa—Ethiopia, Nigeria, South Africa, Zambia, and Zimbabwe—have either stabilized or are showing signs of decline. The estimated 1.3 million [1.1 million–1.5 million] people who died of HIV-related illnesses in sub-Saharan Africa in 2009 comprised 72% of the global total of 1.8 million [1.6 million–2.0 million] deaths attributable to the epidemic.

Figure 2.6

**Trends in women living with HIV**

Proportion of people 15 years and older living with HIV who are women, 1990–2009.

Source: UNAIDS.



## SUB-SAHARAN AFRICA

Table 2.3

### AIDS statistics for sub-Saharan Africa, 2001 and 2009

Source: UNAIDS.

		People living with HIV	People newly infected with HIV	Children living with HIV	AIDS-related deaths
<b>SUB-SAHARAN AFRICA</b>	<b>2009</b>	<b>22.5 million</b> [20.9–24.2 million]	<b>1.8 million</b> [1.6–2.0 million]	<b>2.3 million</b> [1.4–3.1 million]	<b>1.3 million</b> [1.1–1.5 million]
	<b>2001</b>	<b>20.3 million</b> [18.9–21.7 million]	<b>2.2 million</b> [1.9–2.4 million]	<b>1.8 million</b> [1.1–2.5 million]	<b>1.4 million</b> [1.2–1.6 million]

Figure 2.7

### HIV prevalence in sub-Saharan Africa

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

Source: UNAIDS.

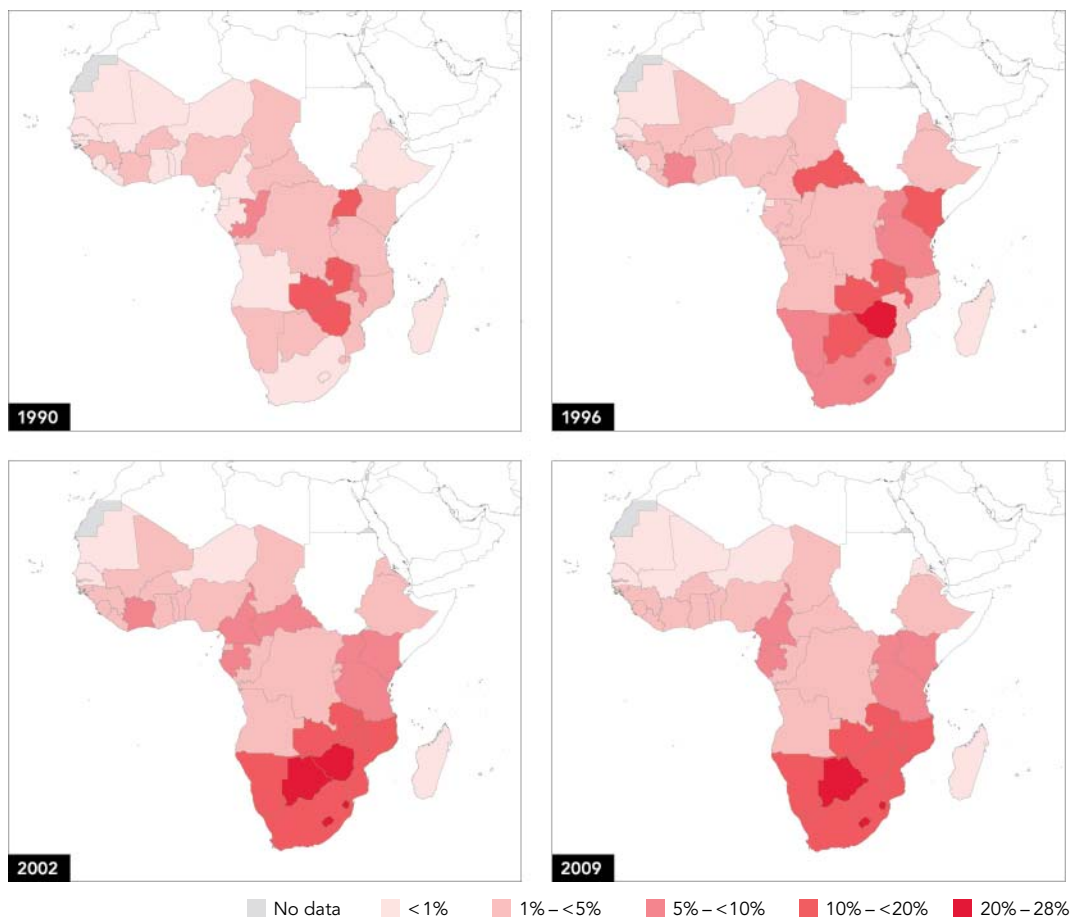
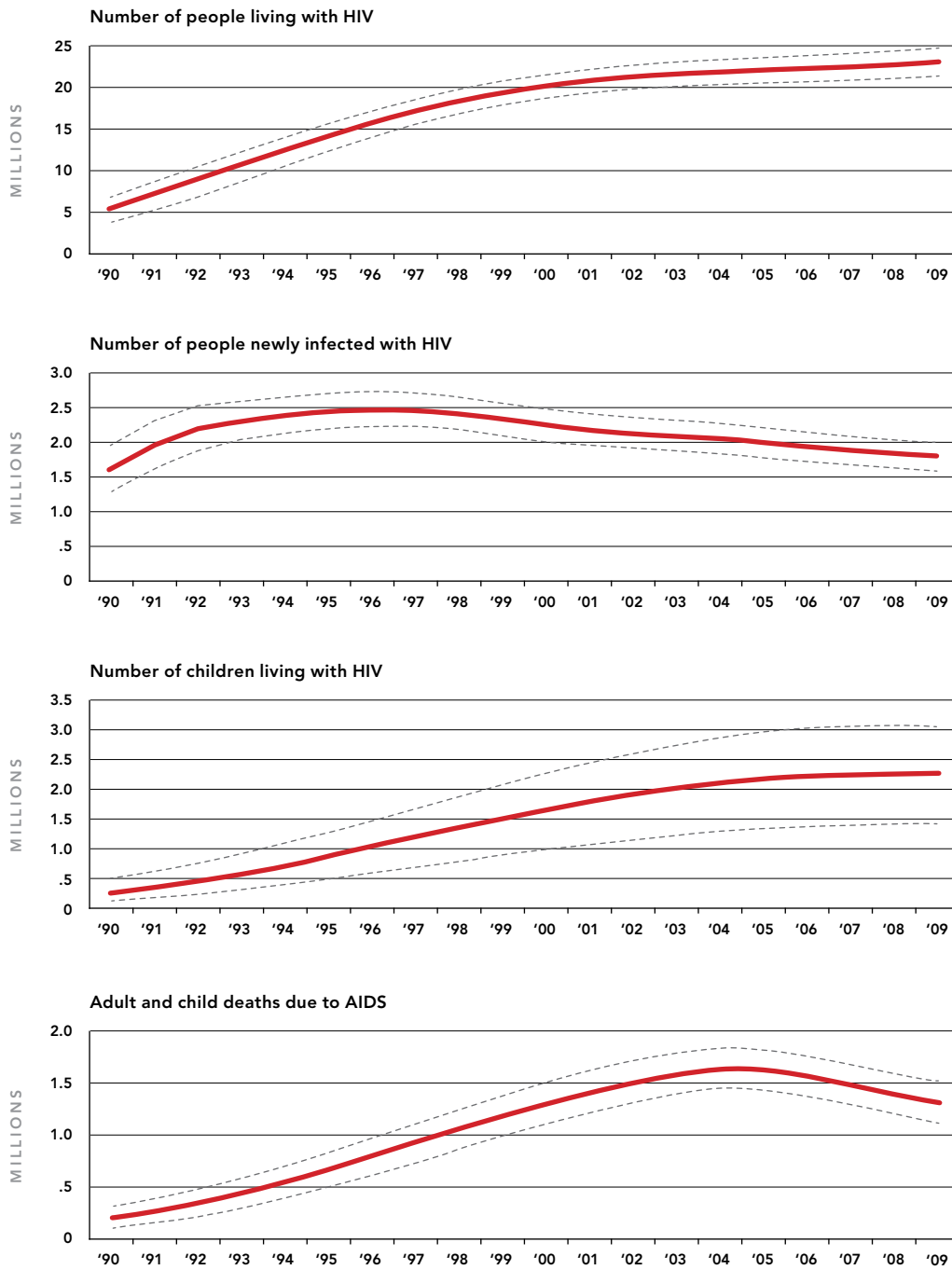


Figure 2.8  
**HIV trends in sub-Saharan Africa**

Source: UNAIDS.



## SUB-SAHARAN AFRICA

### Sub-Saharan Africa still bears an inordinate share of the global HIV burden

The epidemics in sub-Saharan Africa vary considerably, with southern Africa<sup>1</sup> still the most severely affected (Table 2.2 and Figure 2.8). An estimated 11.3 million [10.6 million–11.9 million] people were living with HIV in southern Africa in 2009, nearly one third (31%) more than the 8.6 million [8.2 million– 9.1 million] people living with HIV in the region a decade earlier.

Globally, 34% of people living with HIV in 2009 resided in the 10 countries in southern Africa; 31% of new HIV infections in the same year occurred in these 10 countries, as did 34% of all AIDS-related deaths. About 40% of all adult women with HIV live in southern Africa.

### HIV incidence falling in 22 countries in sub-Saharan Africa

The HIV incidence (number of people newly infected with HIV) appears to have peaked in the mid-1990s, and there is evidence of declines in incidence in several countries in sub-Saharan Africa. Between 2001 and 2009, the incidence of HIV infection declined by more than 25% in an estimated 22 countries.

In Zimbabwe, the main behavioural change appears to have been a reduction in the proportion of men with casual partners, while condom use with non-regular partners has remained high since the late 1990s (1,2).

With an estimated 5.6 million [5.4 million–5.8 million] people living with HIV in 2009, South Africa's epidemic remains the largest in the world. New indications show a slowing of HIV incidence amid some signs of a shift towards safer sex among young people (3). The annual HIV incidence among 18-year-olds declined sharply from 1.8% in 2005 to 0.8% in 2008, and among women 15–24 years old it dropped from 5.5% in 2003–2005 to 2.2% in 2005–2008 (4).

Other epidemics in southern Africa have also levelled off at very high levels. At an estimated 25.9% [24.9%–27.0%] in 2009, Swaziland has the highest adult HIV prevalence in the world.

The epidemics in East Africa have declined since 2000 but are stabilizing in many countries. The HIV incidence slowed in the United Republic of Tanzania to about 3.4 per 1000 person-years between 2004 and 2008 (5). The national HIV prevalence in Kenya fell from about 14% in the mid-1990s to 5% in 2006 (6). The HIV prevalence in Uganda has stabilized at between 6.5% and 7.0% since 2001. The HIV prevalence in Rwanda has been about 3.0% since 2005.

The HIV prevalence in West and Central Africa remains comparatively low, with the adult HIV prevalence estimated at 2% or under in 12 countries in 2009 (Benin, Burkina Faso, Democratic Republic of the Congo, Gambia, Ghana, Guinea, Liberia, Mali, Mauritania, Niger, Senegal, and Sierra Leone). The prevalence of HIV is highest in Cameroon at 5.3% [4.9%–5.8%], Central African Republic 4.7% [4.2%–5.2%], Côte d'Ivoire 3.4% [3.1%–3.9%], Gabon 5.2% [4.2%–6.2%], and Nigeria 3.6% [3.3%–4.0%].

# 5.6m

With an estimated 5.6 million people living with HIV in 2009, South Africa's epidemic remains the largest in the world.

<sup>1</sup> Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe.

Slight declines in prevalence have been detected in household surveys in Mali and Niger and among antenatal clinic attendees in Benin, Burkina Faso, Côte d'Ivoire, and Togo (7).

### **Reducing new HIV infections among children**

There has been pronounced progress in reducing the incidence and impact of HIV among children younger than 15 years in southern Africa. There were 32% fewer children newly infected—an estimated 130 000 [90 000–160 000] versus 190 000 [140 000–230 000]—and 26% fewer AIDS-related deaths among children—90 000 [61 000–110 000] versus 120 000 [88 000–150 000]—in 2009 compared with 2004. About 890 children became newly infected with HIV in Botswana in 2007, down from 4600 in 1999 (information from NACA).

South Africa is one of the few countries in the world where child and maternal mortality has risen since the 1990s (8). AIDS is the largest cause of maternal mortality in South Africa and also accounts for 35% of deaths in children younger than five years (3).

### **AIDS-related mortality decreasing**

The scaling up of treatment is profoundly affecting sub-Saharan Africa. At the end of 2009, 37% of adults and children eligible for antiretroviral therapy were receiving it in the region overall (41% in Eastern and Southern Africa and 25% in Western and Central Africa), compared with only 2% seven years earlier (9). AIDS-related deaths decreased by 18% in southern Africa—an estimated 610 000 [530 000–700 000] people died from AIDS-related illnesses in southern Africa in 2009, compared with 740 000 [670 000–820 000] five years earlier.

In Botswana, where antiretroviral therapy coverage exceeds 90%, the estimated annual number of AIDS-related deaths declined by half (from 18 000 [15 000–22 000] in 2002 to 9100 [2400–19 000] in 2009), while the estimated number of children newly orphaned by AIDS fell by 40% (10). The extensive provision of antiretroviral therapy has averted an estimated 50 000 adult deaths and, if this is sustained, Botswana could avert a further estimated 130 000 deaths through 2016 (11).

AIDS-related deaths in Kenya fell by 29% between 2002 and 2007 (6). In rural Malawi, provision of antiretroviral therapy was linked to a 10% drop in the adult death rate between 2004 and 2008 (12). Antiretroviral therapy and other types of treatment have expanded since the early 2000s, but the number of AIDS-related deaths remains high.

Most people receiving antiretroviral therapy in sub-Saharan Africa start treatment late (13), which limits the overall impact of HIV treatment programmes. The infrastructure, systems, and staff required to properly monitor treatment retention and loss are becoming increasingly inadequate as programmes are scaled up. As HIV testing expands, systems are strengthened to monitor the health status of people living with HIV, and access to treatment is provided at the appropriate time, AIDS-related mortality is likely to further reduce.

# 25.9%

At an estimated 25.9% in 2009, Swaziland has the highest adult HIV prevalence in the world.

## SUB-SAHARAN AFRICA

### Addressing sexual behaviour to prevent the sexual transmission of HIV

The vast majority of people newly infected with HIV in sub-Saharan Africa are infected during unprotected heterosexual intercourse (including paid sex) and onward transmission of HIV to newborns and breastfed babies. Having unprotected sex with multiple partners remains the greatest risk factor for HIV in this region. Large proportions of people living with HIV are in long-term relationships—62% in Kenya and 78% in Malawi, for example (14).

As mainly heterosexual epidemics evolve, the numbers of discordant couples (only one person is infected with HIV) increase and HIV transmission within long-term relationships increases (15). Research in 12 countries in eastern and southern Africa shows that prevalence of discordant couples is high, ranging between 36% and 85% (16).

Urban data in Zambia suggest that 60% of the people newly infected through heterosexual transmission are infected within marriage or cohabitation (17), compared with more than half (50%–65%) in Swaziland (18), 35%–62% in Lesotho (19) and an estimated 44% in Kenya (20).

Prevention strategies, however, often do not adequately address the patterns of HIV transmission. Couples testing and other prevention services for serodiscordant couples receive inadequate support (20).

Increasing evidence indicates that unprotected paid sex, sex between men, and the use of contaminated drug-injecting equipment by two or more people on the same occasion are significant factors in the HIV epidemics of several countries with generalized epidemics. Together, those modes of transmission are believed to account for about 33% of new HIV infections in Kenya and almost 40% in Ghana, for example. However, comparatively little funding is channelled into prevention services for populations at higher risk (20).

Paid sex remains an important factor in many of the HIV epidemics in Western, Central and Eastern Africa. It is estimated that almost one third (32%) of new HIV infections in Ghana, 14% in Kenya and 10% in Uganda are linked to sex work (HIV infection among sex workers, their clients, or their other sex partners) (20, 21).

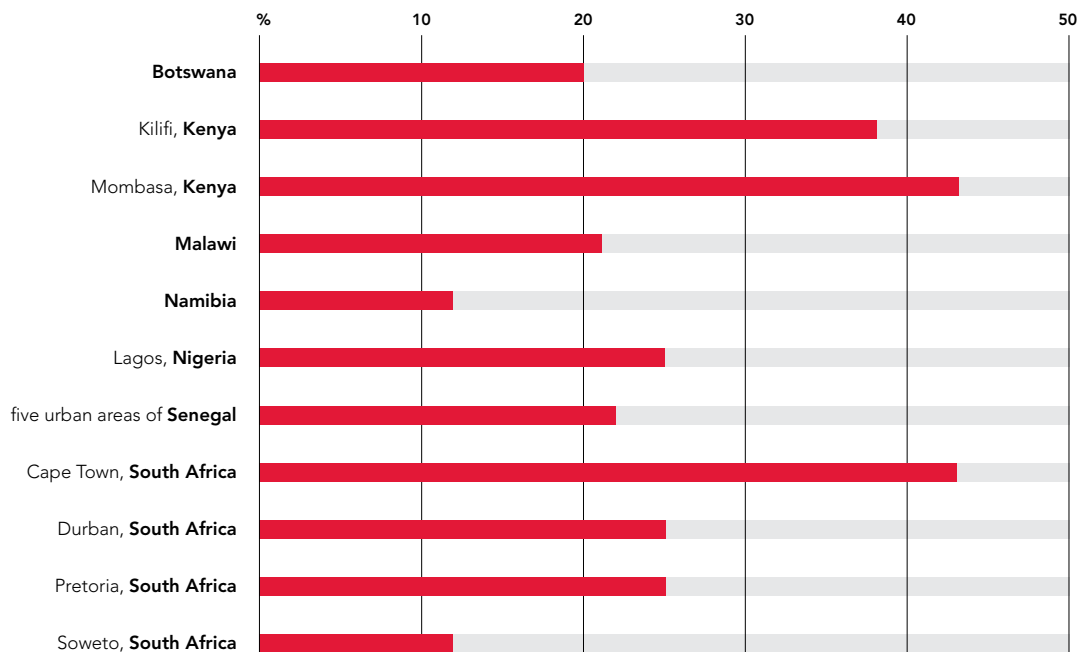
Results from recent studies in sub-Saharan Africa indicate the existence of groups of men who have sex with men and high levels of HIV infection among them (Figure 2.9) (22). Up to 20% of new HIV infections in Senegal (23) and 15% of those in Kenya (20) and Rwanda (24) could be linked to unprotected sex between men. Available evidence suggests that in sub-Saharan Africa, as elsewhere in the world, the majority of men who have sex with men also have sex with women. In Senegal, four fifths (82%) of the surveyed men who have sex with men said that they also have sex with women (25). In Malawi, one third of men who have sex with men were married or cohabiting with a woman (26), as were two thirds of those surveyed in the Nigerian state of Enugu (27).

Figure 2.9

**HIV among men who have sex with men in sub-Saharan Africa**

HIV prevalence (%) among male adults 15–49 years old who have sex with men in seven countries in sub-Saharan Africa, 2009 or latest available year.

Source: Baral et al. (28); Nigeria Federal Ministry of Health (29); Lane et al. (30); Parry et al. (31); Sander et al. (32); Sander et al. (33); and Wade et al. (34).

**Injecting drug use appearing in sub-Saharan Africa**

Injecting drug use is a relatively recent phenomenon in sub-Saharan Africa that features in some of the region's epidemics, including in Kenya, Mauritius, South Africa, and the United Republic of Tanzania. Uniquely in sub-Saharan Africa, injecting drug use is the main driver of the comparatively small HIV epidemic in Mauritius (35). Available research shows high HIV prevalence among people who inject drugs: 36% among those tested in Nairobi (Kenya) (36), 26% in Zanzibar (37), and an estimated 12% in South Africa (38). In 2007, 10% of people who inject drugs surveyed in the Kano region of Nigeria tested HIV-positive (29). Overall, however, injecting drug use remains a minor factor in most of the epidemics in the region. In Kenya, for example, it accounted for an estimated 3.8% of people newly infected with HIV in 2006 (20). ■

Table 2.4  
**AIDS statistics for Asia, 2001 and 2009**

Source: UNAIDS.

		People living with HIV	People newly infected with HIV	Children living with HIV	AIDS-related deaths
ASIA	2009	4.9 million [4.5–5.5 million]	360 000 [300 000–430 000]	160 000 [110 000–210 000]	300 000 [260 000–340 000]
	2001	4.2 million [3.8–4.6 million]	450 000 [410 000–500 000]	100 000 [69 000–140 000]	250 000 [220 000–300 000]

Figure 2.10  
**HIV prevalence in Asia**

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

Source: UNAIDS.

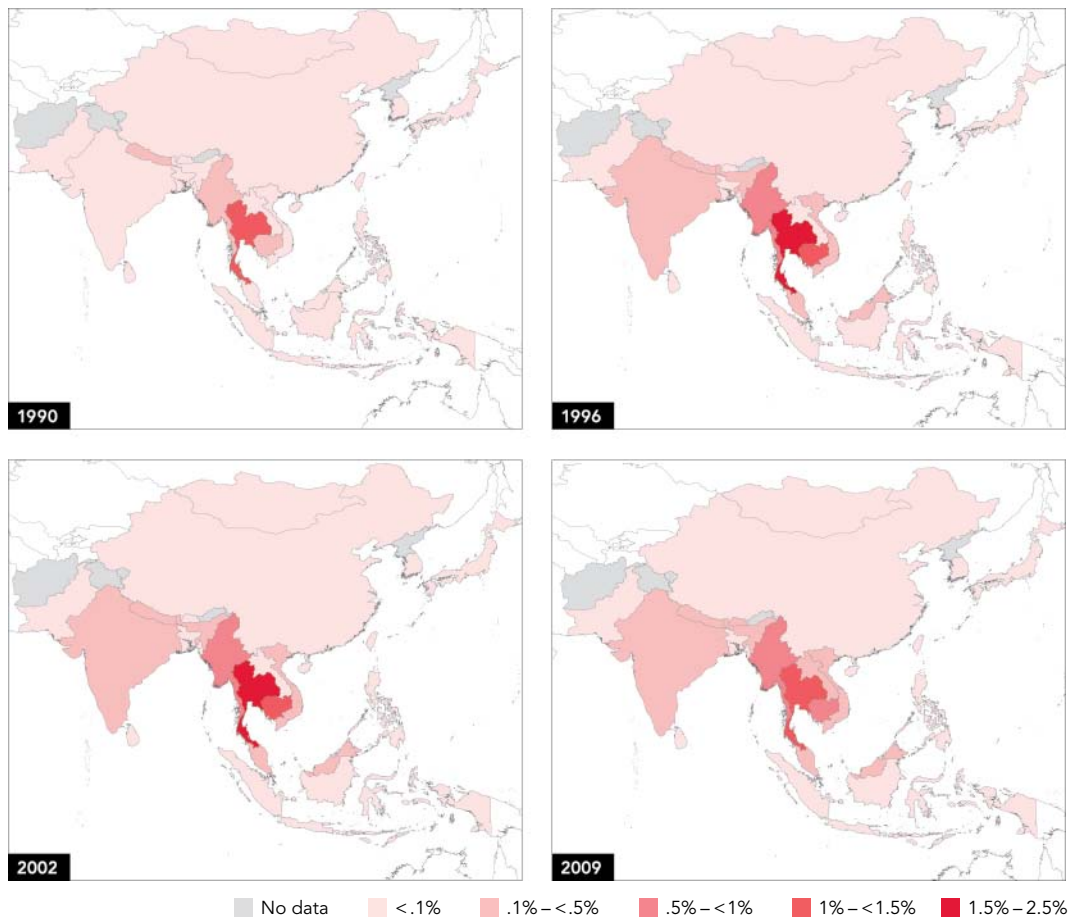
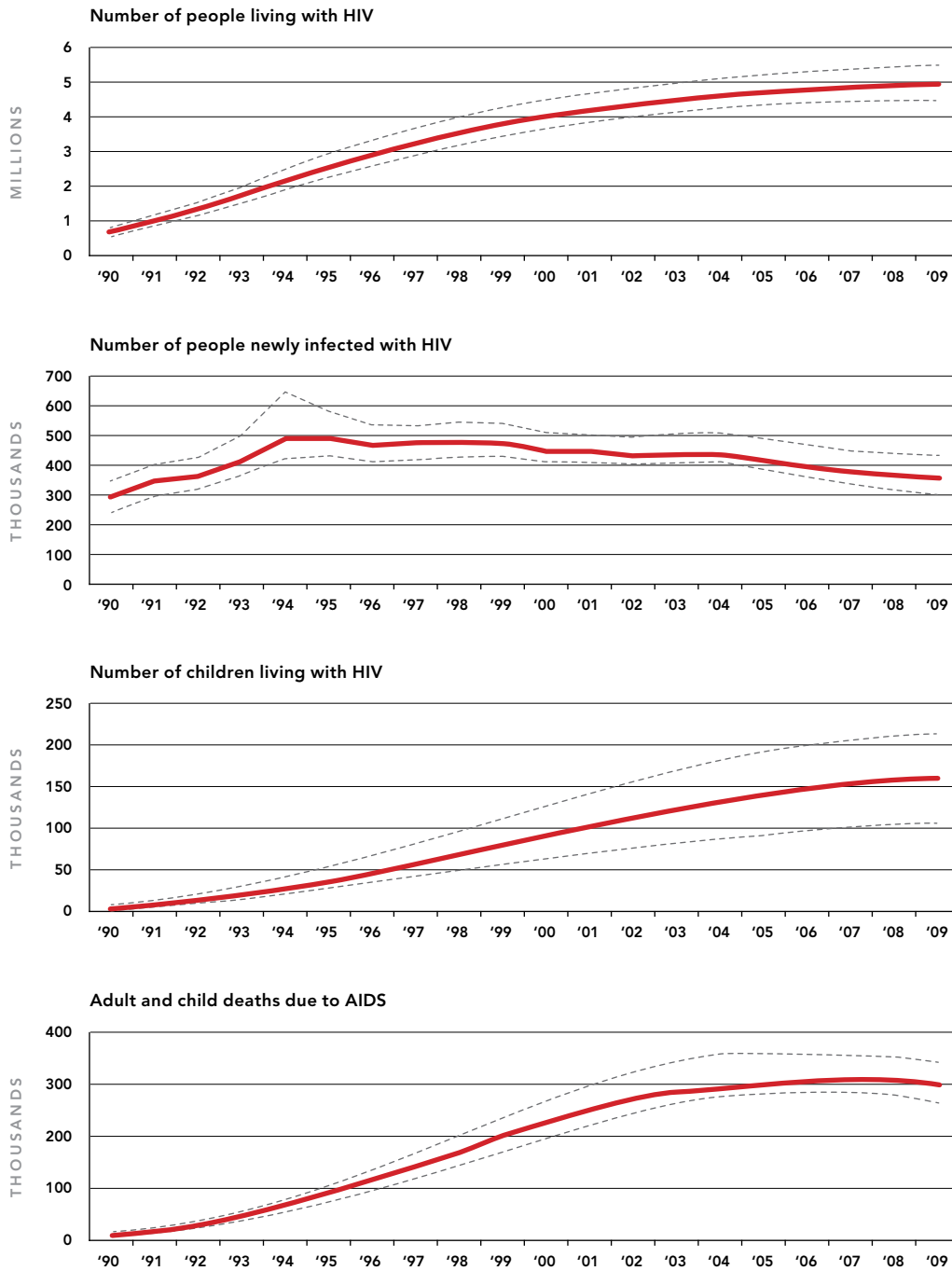


Figure 2.11  
**HIV trends in Asia**

Source: UNAIDS.



## ASIA

**“HIV PREVALENCE IS INCREASING IN LOW-PREVALENCE COUNTRIES SUCH AS PAKISTAN, WHERE DRUG INJECTING IS THE MAIN MODE OF HIV TRANSMISSION.”**

### Asian epidemic largely stable

In Asia, an estimated 4.9 million [4.5 million–5.5 million] people were living with HIV in 2009, about the same as five years earlier (Table 2.4 and Figure 2.11). Most national HIV epidemics appear to have stabilized. No country in the region has a generalized epidemic. Thailand is the only country in this region in which the prevalence is close to 1%, and its epidemic appears to be stable overall. A resurgent epidemic in the late 1990s (when up to 60 000 people were becoming newly infected annually) has since receded. The adult HIV prevalence was 1.3% [0.8%–1.4%] in 2009, and the HIV incidence had slowed to 0.1% (39). In Cambodia, the adult HIV prevalence declined to 0.5% [0.4%–0.8%] in 2009, down from 1.2% [0.8%–1.6%] in 2001. But the HIV prevalence is increasing in such low-prevalence countries as Bangladesh, Pakistan (where drug injecting is the main mode of HIV transmission), and the Philippines.

### New HIV infections—mixed progress

There were 360 000 [300 000–430 000] people newly infected with HIV in 2009, 20% lower than the 450 000 [410 000–500 000] in 2001. Incidence fell by more than 25% in India, Nepal, and Thailand between 2001 and 2009. The epidemic remained stable in Malaysia and Sri Lanka during this time period.

Incidence increased by 25% in Bangladesh and Philippines between 2001 and 2009 even as the countries continue to have relatively low epidemic levels.

### Epidemic patterns vary—between and within countries

The overall trends in this region hide important variation in the epidemics, both between and within countries. In most of them, the epidemics appear stable. In many countries in the region, national epidemics are concentrated in a relatively small number of provinces. In China, five provinces account for just over half (53%) of the people living with HIV (40), and HIV infection levels in Indonesia’s Papua province are 15 times higher than the national average (41).

Asia’s epidemics remain concentrated largely among people who inject drugs, sex workers and their clients, and men who have sex with men. Incidence patterns can vary considerably in large countries such as India. About 90% of people newly infected with HIV in India are believed to have acquired it during unprotected sex, but the common use of contaminated injecting equipment by two or more people on the same occasion is the main mode of HIV transmission in the country’s north-eastern states (42).

### Sex work—central to the region’s epidemics

Paid sex features centrally in the region’s HIV epidemics. In some countries such as Viet Nam, condom use during commercial sex is infrequent. Further, the people who inject drugs in some countries are also buying or selling sex. Almost one in five (18%) surveyed female sex workers in Myanmar tested HIV-positive in the mid-2000s. In southern India, up to 15% of female sex workers were living with HIV (43). The Indian state of Karnataka has shown evidence that intensive HIV prevention efforts among female sex workers can be highly effective. A four-year prevention programme in 18 of the state’s 27 districts almost halved HIV prevalence among young antenatal clinic attendees (from 1.4% to 0.8%) (44).

### **Injecting drug use—fuelling new epidemics**

It is estimated that as many as 4.5 million people in Asia inject drugs, more than half of whom live in China (38). India, Pakistan, and Viet Nam also have large numbers of people who inject drugs. In Asia, on average, an estimated 16% of the people who inject drugs are living with HIV, although the prevalence is considerably higher in some countries. In studies in Myanmar, up to 38% of the people who inject drugs have tested HIV-positive; this is estimated to be 30%–50% in Thailand and more than half in parts of Indonesia (41,45,46). In Viet Nam, between 32% and 58% of people who inject drugs are living with HIV in various provinces (47–49). In China, an estimated 7%–13% of the people who inject drugs are living with HIV (40).

### **Men who have sex with men—marginalized but not marginal to the growth of the epidemic**

High HIV prevalence among men who have sex with men has been reported in several countries: 29% in Myanmar (50), 5% nationally in Indonesia (41), 6% in the Laotian capital of Vientiane (51), between 7% and 18% in parts of southern India (52), and 9% in rural parts of Tamil Nadu state in India (53). The epidemic among men who have sex with men in Thailand had been largely ignored until a study uncovered 17% prevalence in Bangkok in 2005. Subsequent studies in 2005 and 2007 found that the infection levels had risen to 28% and 31% (54), and an annual HIV incidence of 5.5% was recorded in 2008 (55).

Surveys have also found rising HIV prevalence in China among men who have sex with men, including in Shandong (56) and Jiangsu provinces (57) and in the city of Beijing (58). Although studies in Asia suggest that a significant proportion of men who have sex with men also have sex with women (51), the risk of living with HIV appears to be much higher for men who only have sex with men (56,59).

As the epidemics mature in Asia, HIV is spreading more widely, especially to the female partners of people who inject drugs and the clients of sex workers and their other sex partners. In Asia overall, women account for a growing proportion of HIV infections: from 21% in 1990 to 35% in 2009.

### **New HIV infections among children**

The estimated number of children younger than 15 years living with HIV has increased marginally, from 140 000 [92 000–190 000] in 2005 to 160 000 [110 000–210 000] in 2009. But decreasing HIV incidence and slowly widening access to services that prevent mother-to-child transmission of HIV have led to a steep drop in the number of children becoming newly infected. An estimated 22 000 [15 000–31 000] children aged 0–14 years became infected in 2009—a 15% decrease on the 1999 estimate of 26 000 [18 000–38 000]. AIDS-related deaths in this age group have declined by 15% since 2004, from 18 000 [11 000–25 000] to 15 000 [9000–22 000].

### **AIDS-related mortality stable**

The number of deaths has stabilized in Asia, but there are no indications of a decline. There were an estimated 300 000 [260 000–340 000] AIDS-related deaths in 2009 compared with 250 000 [220 000–300 000] in 2001. ■

## EASTERN EUROPE AND CENTRAL ASIA

Table 2.5

### AIDS statistics for Eastern Europe and Central Asia, 2001 and 2009

Source: UNAIDS.

		People living with HIV	People newly infected with HIV	Children living with HIV	AIDS-related deaths
<b>EASTERN EUROPE + CENTRAL ASIA</b>	<b>2009</b>	<b>1.4 million</b> [1.3–1.6 million]	<b>130 000</b> [110 000–160 000]	<b>18 000</b> [8600–29 000]	<b>76 000</b> [60 000–95 000]
	<b>2001</b>	<b>760 000</b> [670 000–890 000]	<b>240 000</b> [210 000–300 000]	<b>4000</b> [2000–6100]	<b>18 000</b> [14 000–23 000]

Figure 2.12

### HIV prevalence in Eastern Europe and Central Asia

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

Source: UNAIDS.

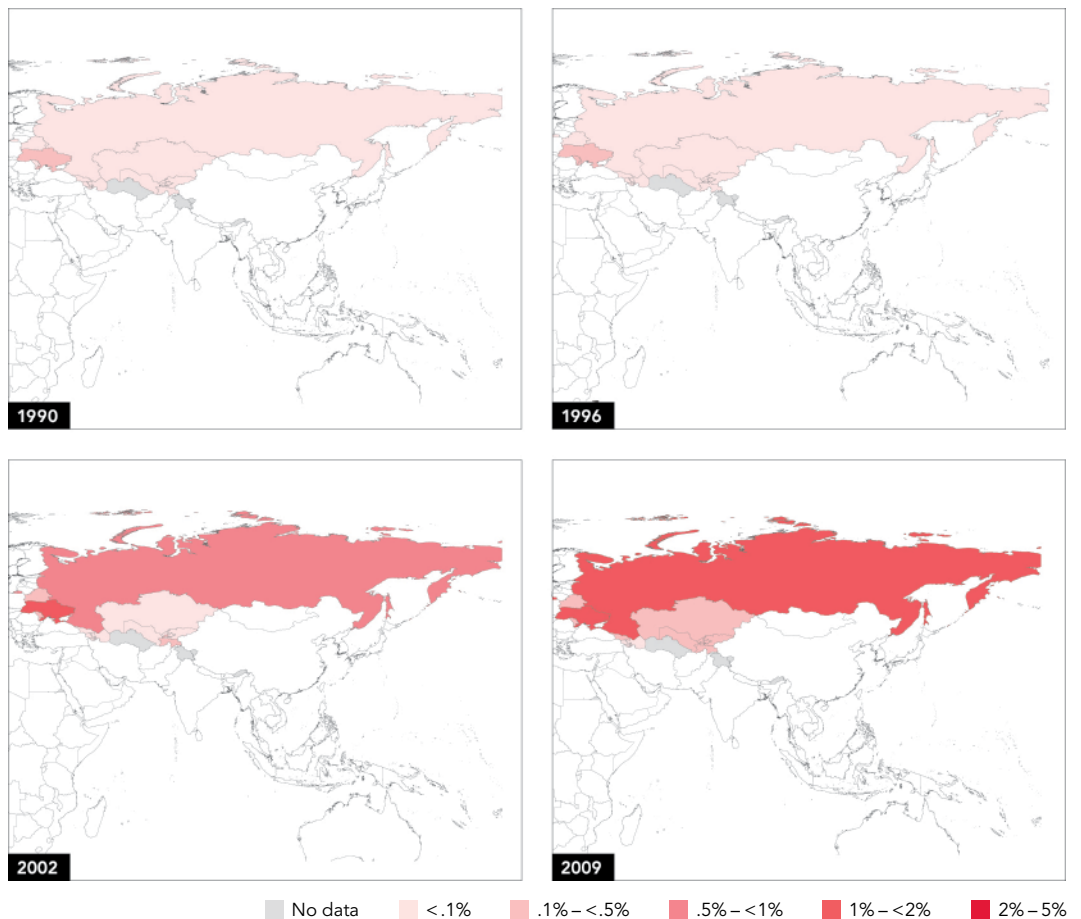
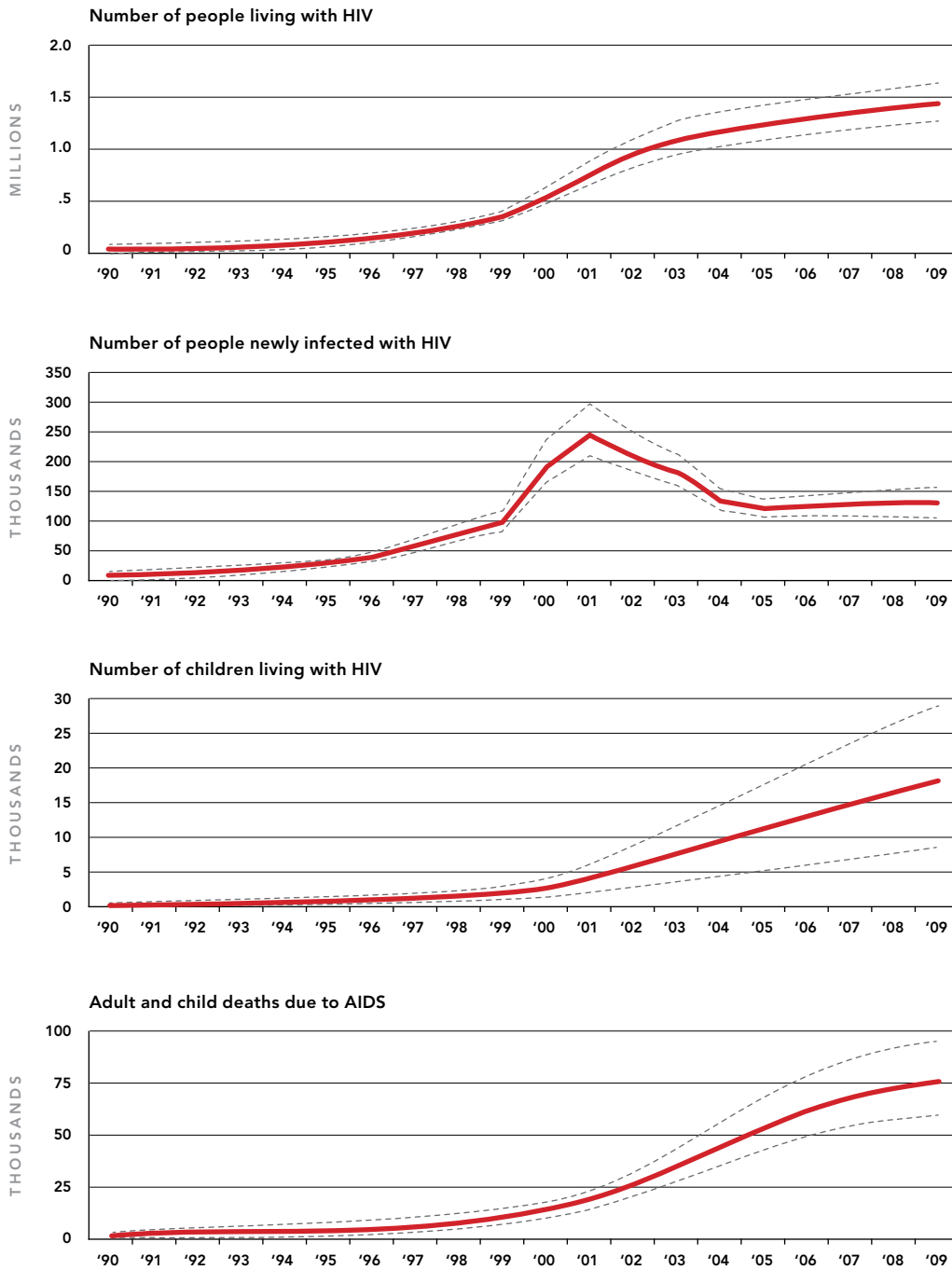


Figure 2.13  
**HIV trends in Eastern Europe and Central Asia**

Source: UNAIDS.



**200%**

The number of people living with HIV in Eastern Europe and Central Asia has almost tripled since 2000.

### **The largest regional increase in HIV prevalence**

In Eastern Europe and Central Asia, the number of people living with HIV has almost tripled since 2000 and reached an estimated total of 1.4 million [1.3 million–1.6 million] in 2009 compared with 760 000 [670 000–890 000] in 2001 (Table 2.5 and Figure 2.13). A rapid rise in HIV infections among people who inject drugs at the turn of the century caused the epidemic in this region to surge.

Overall, the HIV prevalence is 1% or higher in two countries in this region, the Russian Federation and Ukraine, which together account for almost 90% of newly reported HIV diagnoses.

At 1.1% [1.0%–1.3%], the adult HIV prevalence in Ukraine is higher than in any other country in all of Europe and Central Asia (60). Annual HIV diagnoses in Ukraine have more than doubled since 2001.

The HIV epidemic in the Russian Federation also continues to grow, but at a slower pace than in the late 1990s. Newly reported HIV cases have increased in several of the countries in Central Asia, including Uzbekistan, which has the largest epidemic in Central Asia (61).

### **Concentrated epidemics—sex work, drug use and sex between men linked**

The HIV epidemics in Eastern Europe and Central Asia are concentrated mainly among people who inject drugs, sex workers, their sexual partners and, to a much lesser extent, men who have sex with men. An estimated one quarter of the 3.7 million people (most of whom are men) who inject drugs in the region are living with HIV (38). In the Russian Federation, more than one third (37%) of the country's estimated 1.8 million people who inject drugs are believed to be living with HIV (38), compared with between 39% and 50% in Ukraine (60). Surveys among people who inject drugs in 2007 found HIV prevalence as high as 88% (in the city of Kryvyi Rih) (62).

High HIV prevalence has also been found in prison populations, especially among incarcerated people who inject drugs (63). An estimated 10 000 prisoners are living with HIV in Ukraine (60).

The interplay between sex work and injecting drug use is accelerating the spread of HIV in the region. At least 30% of sex workers in the Russian Federation, for example, have injected drugs (64), and the high HIV infection levels found among sex workers in Ukraine (14% to 31% in various studies) (60) are almost certainly due to the overlap of paid sex with injecting drug use.

Because most people who inject drugs are sexually active, sexual transmission of HIV has increased in older epidemics such as that in Ukraine, making these more challenging to manage (65). As the epidemic spreads from (predominantly male) people who inject drugs to their sexual partners, the proportion of women living with HIV is also growing. By 2009, an estimated 45% of the people living with HIV in Ukraine were women, compared with 41% in 2004

and 37% in 1999. Different people using the same contaminated injecting equipment within a short time frame remains a core driver of these epidemics. An estimated 35% of women living with HIV probably acquired HIV through injecting drug use, while an additional 50% were probably infected by partners who inject drugs (61,66).

Unprotected sex between men is responsible for a small share of new infections in the region—less than 1% of people newly diagnosed with HIV infection for whom the route of transmission was identified (67). Nevertheless, official data may underplay the actual extent of infection in this highly stigmatized population (68). In small surveys, the HIV prevalence among men who have sex with men has ranged from zero in Belarus, Lithuania and parts of Central Asia to 5% in Georgia (69), 6% in the Russian Federation (70) and between 4% (in Kyiv) and 23% (in Odessa) in Ukraine (60).

### **AIDS-related mortality**

AIDS-related deaths continue to rise in the region. There were an estimated 76 000 [60 000–95 000] AIDS-related deaths in 2009 compared with 18 000 [14 000–23 000] in 2001, a four-fold increase during this period. ■

**“AS THE EPIDEMIC SPREADS FROM PREDOMINANTLY MALE POPULATIONS WHO INJECT DRUGS TO THEIR SEXUAL PARTNERS, THE PROPORTION OF WOMEN LIVING WITH HIV IS ALSO GROWING.”**

## CARIBBEAN

Table 2.6

### AIDS statistics for the Caribbean, 2001 and 2009

Source: UNAIDS.

		People living with HIV	People newly infected with HIV	Children living with HIV	AIDS-related deaths
<b>CARIBBEAN</b>	<b>2009</b>	<b>240 000</b> [220 000–270 000]	<b>17 000</b> [13 000–21 000]	<b>17 000</b> [8500–26 000]	<b>12 000</b> [8500–15 000]
	<b>2001</b>	<b>240 000</b> [210 000–270 000]	<b>20 000</b> [17 000–23 000]	<b>18 000</b> [9100–27 000]	<b>19 000</b> [16 000–23 000]

Figure 2.14

### HIV prevalence in the Caribbean

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

Source: UNAIDS.

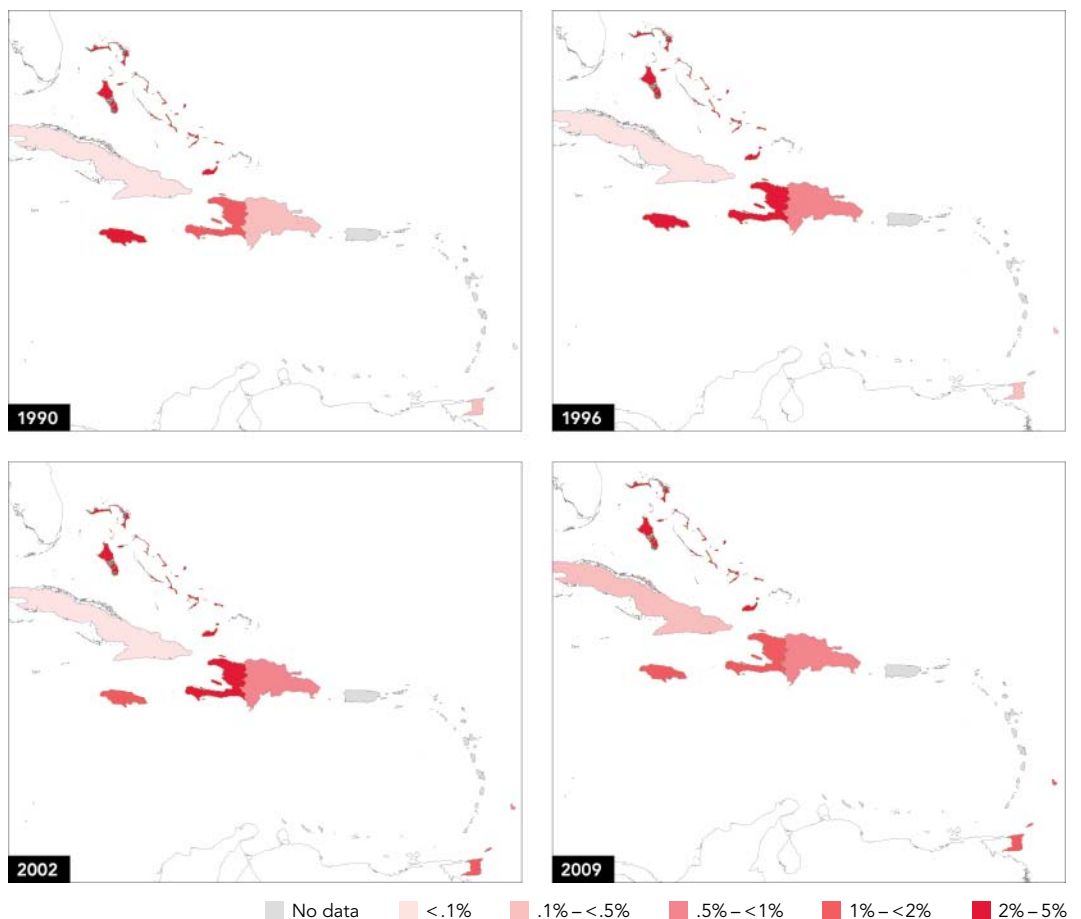
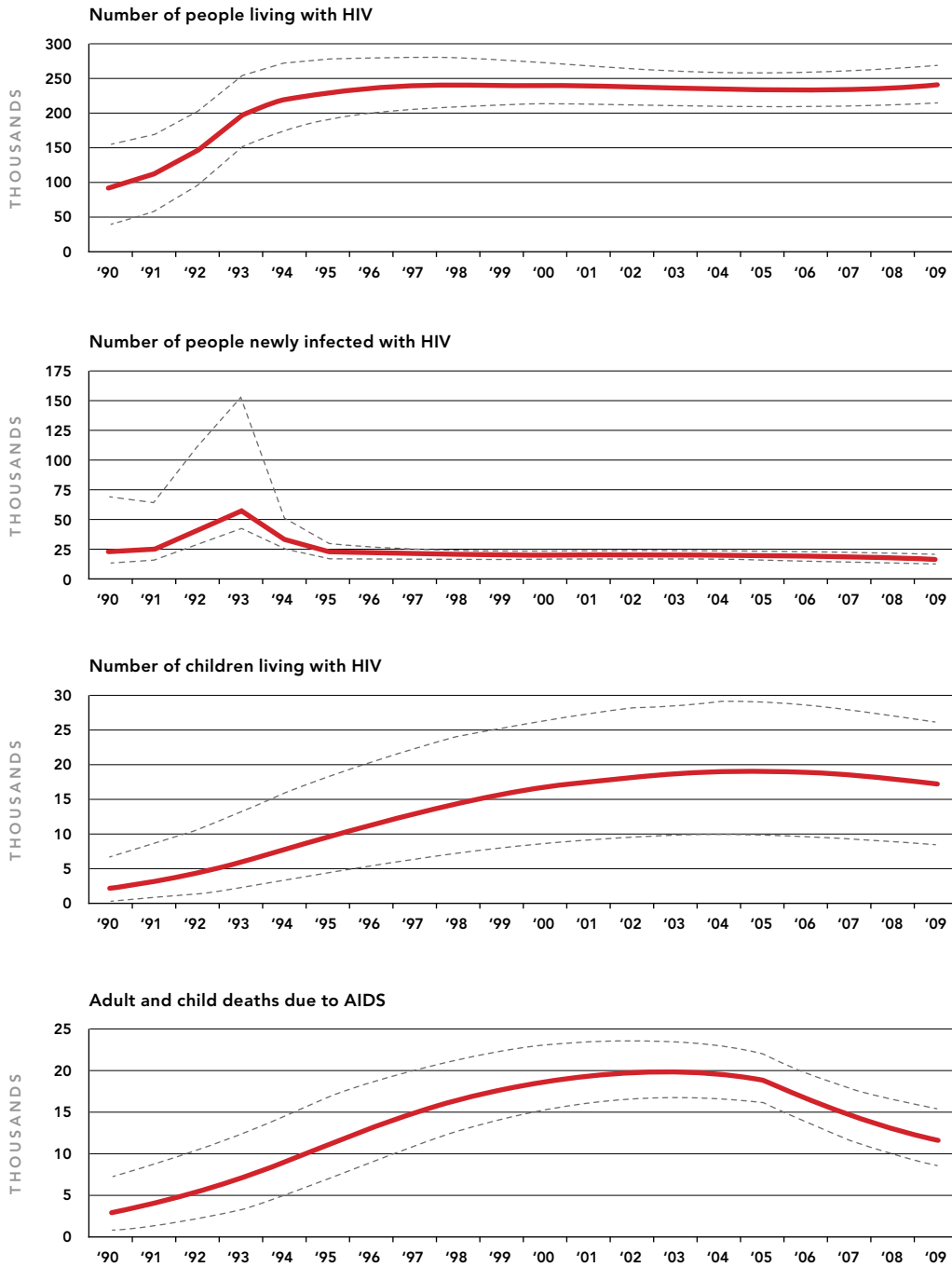


Figure 2.15  
**HIV trends in the Caribbean**

Source: UNAIDS.



## CARIBBEAN

### High HIV prevalence but fewer people living with HIV

The HIV prevalence among adults in the Caribbean is about 1.0% [0.9%–1.1%], which is higher than in other all regions outside sub-Saharan Africa (Table 2.5 and Figure 2.13). However, the number of people living with HIV in the Caribbean is relatively small—240 000 [220 000–270 000] in 2009—and has varied little since the late 1990s.

0.1%

Estimated HIV prevalence in Cuba, which is exceptionally low.

The burden of HIV varies considerably between and within countries. The exceptionally low HIV prevalence in Cuba (0.1% [0.08%–0.13%]) contrasts, for example, with a 3.1% [1.2%–5.4%] adult HIV prevalence in the Bahamas (64). Meanwhile, 12% of pregnant women using antenatal facilities in one of Haiti's cities have tested HIV-positive, compared with less than 1% in the west of the country (71). In the neighbouring Dominican Republic, HIV infection levels also vary considerably, with HIV prevalence among communities near sugar plantations (the bateyes) about four times higher than the national average (72).

### New HIV infections slightly declining

New infections have slightly declined between 2001 and 2009. An estimated 17 000 [13 000–21 000] people became newly infected with HIV in 2009, about 3000 less than the 20 000 [17 000–23 000] in 2001.

Unprotected sex between men and women—especially paid sex—is believed to be the main mode of HIV transmission in this region (73,74). The Caribbean remains the only region, besides sub-Saharan Africa, where women and girls outnumber men and boys among people living with HIV. In 2009, an estimated 53% of people with HIV were female.

High infection levels have been found among female sex workers, including 4% in the Dominican Republic (72,76), 9% in Jamaica (77), and 27% in Guyana (78). Most countries in the region have focused their HIV prevention efforts on paid sex.

Unsafe sex between men is a significant but largely hidden facet of the epidemics in this region, where several countries still criminalize sexual relations between men (79). One in five men who have sex with men surveyed in Trinidad and Tobago were living with HIV, for example, and one in four said they regularly also had sex with women (69). In Jamaica, a study found an HIV prevalence of 32% among men who have sex with men (73). Evidence indicates increasing HIV infections among men who have sex with men in Cuba (80) and the Dominican Republic (81).

In Bermuda and Puerto Rico, unsafe injecting drug use contributes significantly to the spread of HIV. In Puerto Rico, contaminated injecting equipment accounted for about 40% of males becoming newly infected in 2006 and for 27% among females (82).

### **AIDS-related mortality declining**

AIDS-related deaths are falling in the Caribbean. An estimated 12 000 [8500–15 000] people lost their lives due to AIDS in 2009 compared with 19 000 [16 000–23 000] deaths in 2001. ■

**“THE CARIBBEAN  
REMAINS THE ONLY  
REGION, BESIDES  
SUB-SAHARAN AFRICA,  
WHERE WOMEN AND  
GIRLS OUTNUMBER MEN  
AND BOYS AMONG  
PEOPLE LIVING WITH HIV.”**

## CENTRAL AND SOUTH AMERICA

Table 2.7

### AIDS statistics for Central and South America, 2001 and 2009

Source: UNAIDS.

		People living with HIV	People newly infected with HIV	Children living with HIV	AIDS-related deaths
<b>CENTRAL AND SOUTH AMERICA</b>	<b>2009</b>	<b>1.4 million</b> [1.2–1.6 million]	<b>92 000</b> [70 000–120 000]	<b>36 000</b> [25 000–50 000]	<b>58 000</b> [43 000–70 000]
	<b>2001</b>	<b>1.1 million</b> [1.0–1.3 million]	<b>99 000</b> [85 000–120 000]	<b>30 000</b> [20 000–42 000]	<b>53 000</b> [44 000–65 000]

Figure 2.16

### 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.

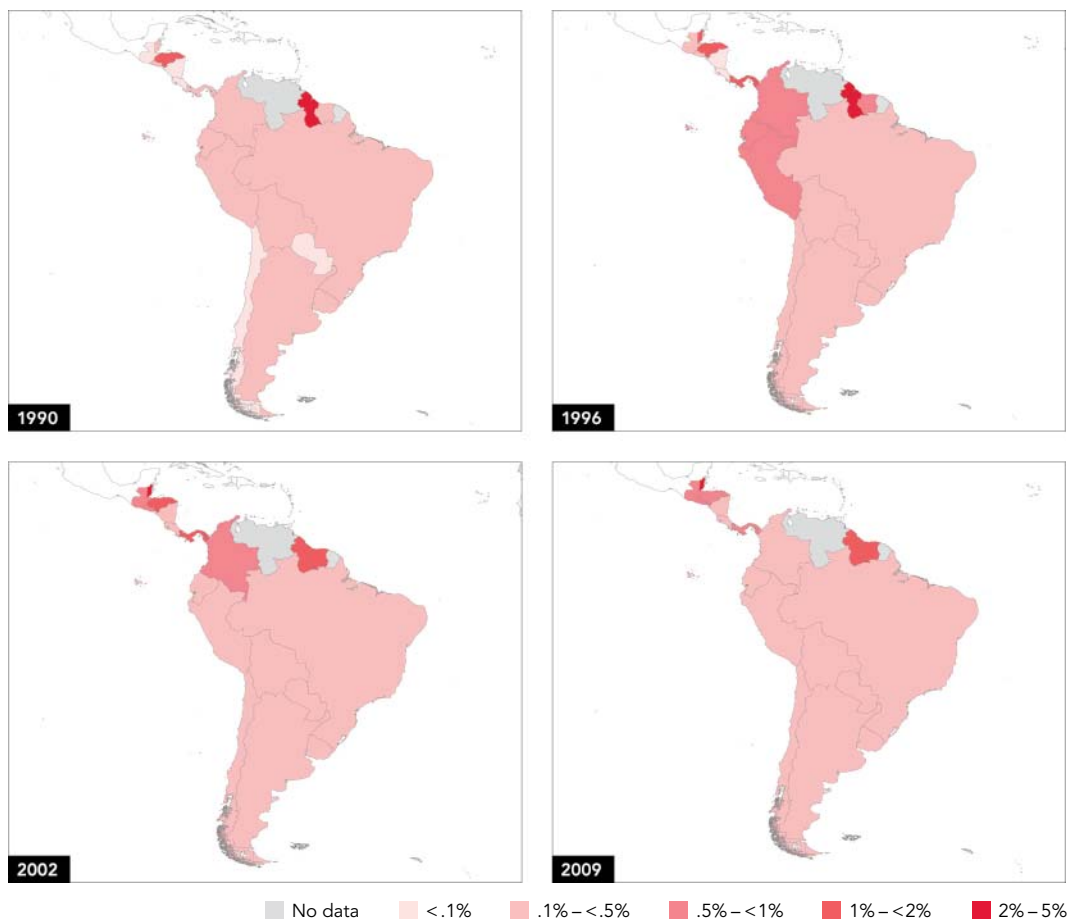
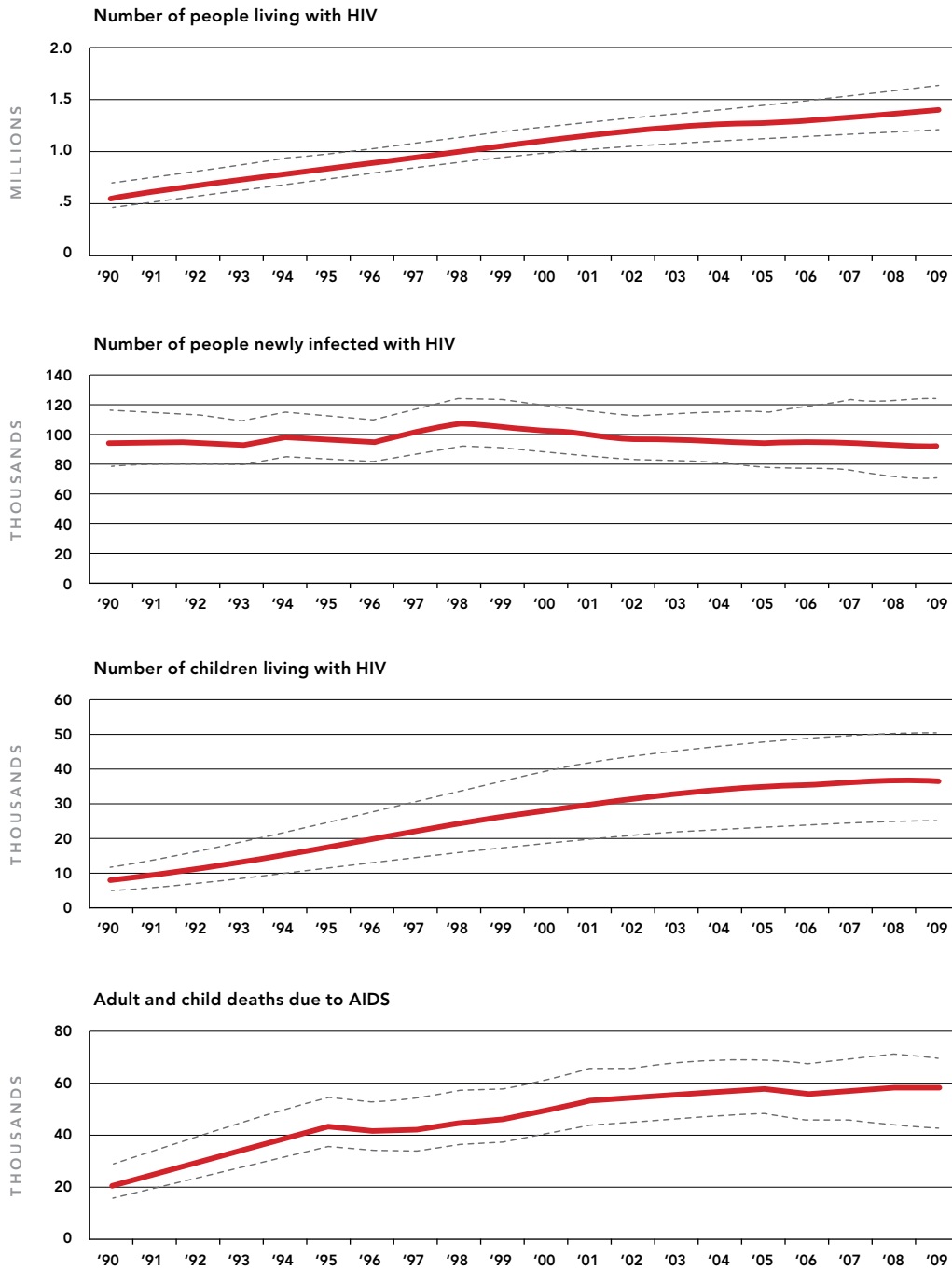


Figure 2.17  
**HIV trends in Central and South America**

Source: UNAIDS.



**Stable epidemic—but HIV prevalence rises with high access to antiretroviral therapy**

The HIV epidemics in South and Central America have changed little in recent years (Table 2.6 and Figure 2.14). The total number of people living with HIV continues to grow to an estimated 1.4 million [1.2 million–1.6 million] in 2009 from 1.1 million [1.0 million–1.3 million] in 2001) due largely to the availability of antiretroviral therapy.

About one third of all people living with HIV in Central and South America live in populous Brazil, where early and ongoing HIV prevention and treatment efforts have contained the epidemic. The adult HIV prevalence in Brazil has remained well under 1% for at least the past decade.

**Concentrated epidemics—primarily among men who have sex with men**

Most of the HIV epidemics in this region are concentrated in and around networks of men who have sex with men. Surveys conducted in groups of urban men who have sex with men have found HIV prevalence of at least 10% in 12 of 14 countries (69), including in Costa Rica (83). High rates of HIV infection have been found in networks of men who have sex with men. In five Central American countries, the annual HIV incidence was 5.1% (84) among men who have sex with men, while an incidence of 3.5% has been found among men who have sex with men who attended public health clinics in Lima, Peru. These rates were higher than those observed among the men who have sex with men in Europe and North America (85).

Social stigma, however, has kept many of these epidemics among men who have sex with men hidden and unacknowledged. Several countries, especially in Central America and in the Andes, continue to have fewer programmes that address the key role of unsafe sex between men in their HIV epidemics (64).

Fear of being stigmatized can compel many men who have sex with men to also have sexual relationships with women. In Central America, for example, more than one in five men who said that they had sex with other men reported having had sex with at least one woman in the previous six months (84).

**Stopping HIV among sex workers—investments are reaping dividends**

Most countries have focused attention on preventing HIV transmission during paid sex, and there are indications that these efforts are paying off. High condom use rates and low HIV prevalence have been reported among female sex workers in Santiago, Chile (86), El Salvador (87) and Guatemala (88).

Injecting drug use has been the other main route of HIV transmission in this region, especially in the southern cone of South America. It has been estimated that as many as 2 million people in Central and South America inject drugs and that more than one quarter of these might be living with HIV (38).

**1/3**

Proportion of the population living with HIV in Central and South America that live in Brazil.

As in other regions with many people who inject drugs, prisoners and detainees also have a high HIV prevalence. Close to 6% of male inmates tested at a São Paulo (Brazil) penitentiary, for example, were living with HIV (89). Such evidence has prompted some countries to move towards introducing HIV prevention services in prisons.

Meanwhile, heterosexual HIV transmission is increasing in the older epidemics in South America. When injecting drug use receded as a mode of transmission in Argentina's HIV epidemic, for example, an estimated four of five new HIV diagnoses in the mid-2000s were attributed to unprotected sexual intercourse, mainly between men and women (90). Almost half (43%) of the new HIV infections in Peru are now attributed to heterosexual transmission (91), although most of those infections are believed to occur during paid and other forms of higher-risk sex.

### **HIV among children**

The number of children (younger than 15 years of age) living with HIV, however, remains small in Central and South America (around 4000 children newly infected in 2009) and appears to be declining. This trend is occurring despite the comparatively low coverage of services for preventing the transmission of HIV to infants. At the end of 2009, 54% [39%–83%] of the pregnant women living with HIV in the region were receiving antiretroviral drugs to prevent transmission to their newborns, only slightly higher than the global coverage of 53% [40%–79%] in low- and middle-income countries (9). ■

**“THE NUMBER OF CHILDREN LIVING WITH HIV REMAINS SMALL IN CENTRAL AND SOUTH AMERICA AND APPEARS TO BE DECLINING.”**

## NORTH AMERICA AND WESTERN AND CENTRAL EUROPE

Table 2.8

### AIDS statistics for North America and Western and Central Europe, 2001 and 2009

Source: UNAIDS.

		People living with HIV	People newly infected with HIV	Children living with HIV	AIDS-related deaths
<b>NORTH AMERICA AND WESTERN AND CENTRAL EUROPE</b>	<b>2009</b>	<b>2.3 million</b> [2.0–2.7 million]	<b>100 000</b> [73 000–150 000]	<b>6000</b> [3500–8000]	<b>35 000</b> [29 000–56 000]
	<b>2001</b>	<b>1.8 million</b> [1.6–2.0 million]	<b>97 000</b> [82 000–110 000]	<b>7400</b> [4500–10 000]	<b>37 000</b> [32 000–44 000]

Figure 2.18

### HIV prevalence in North America and Western and Central Europe

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

Source: UNAIDS.

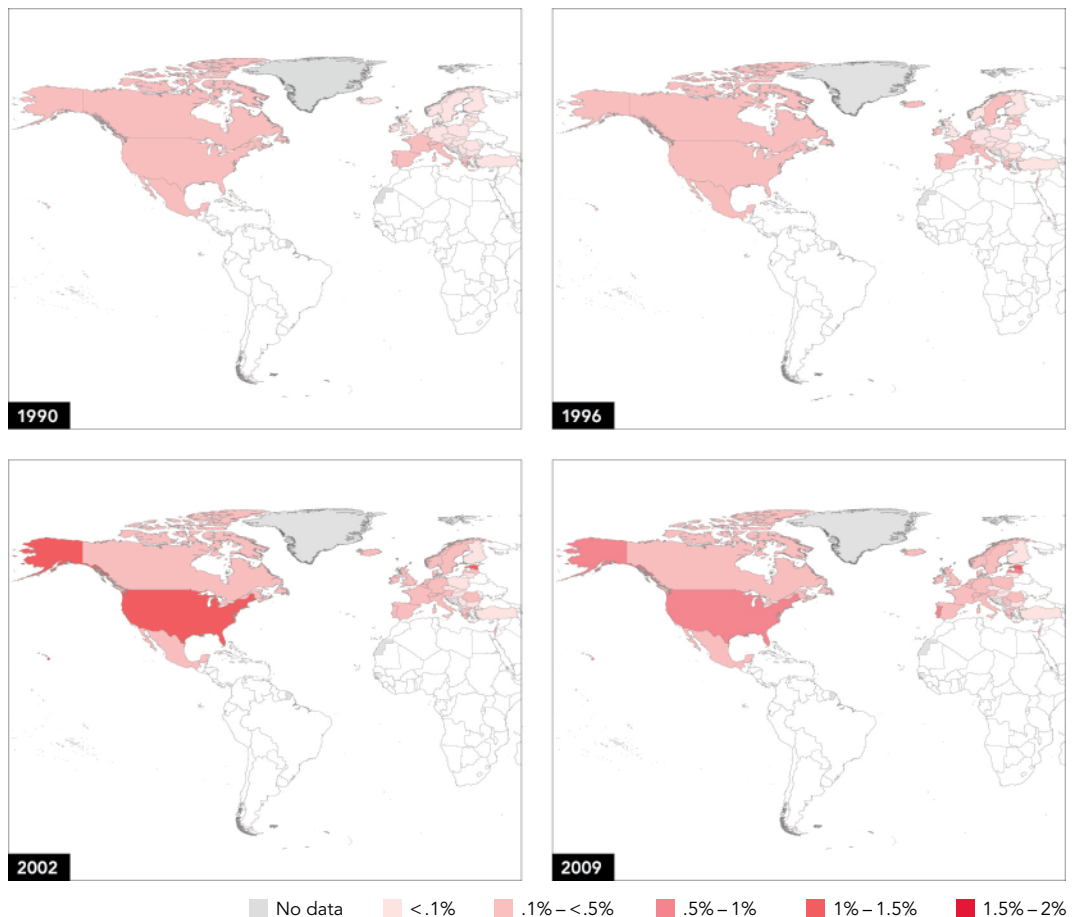
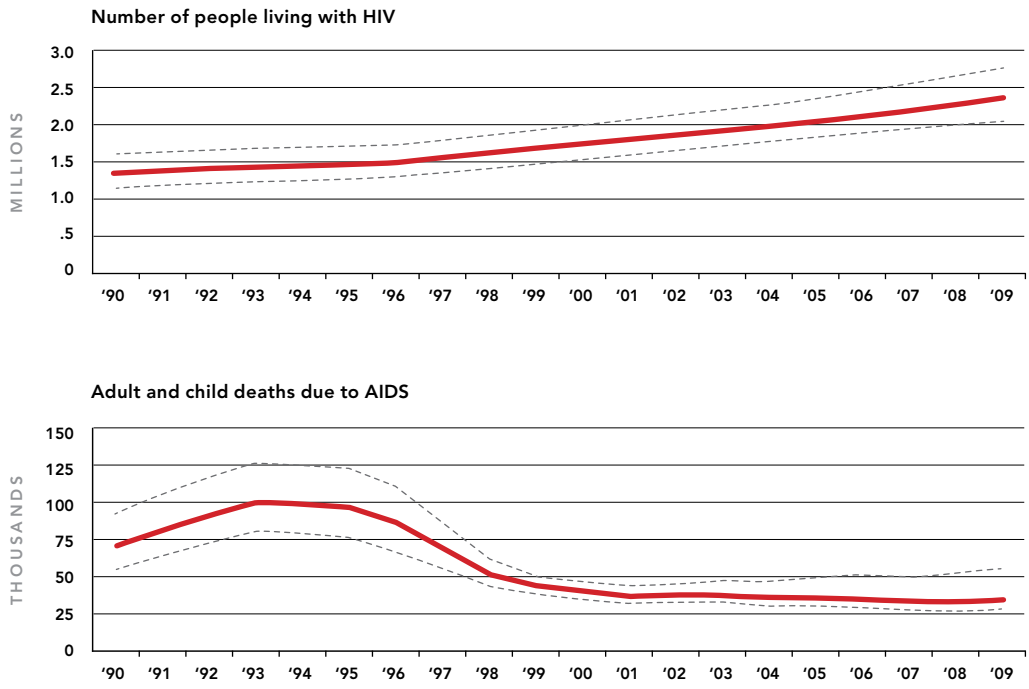


Figure 2.19

**HIV trends in North America and Western and Central Europe**

Source: UNAIDS.



## NORTH AMERICA AND WESTERN AND CENTRAL EUROPE

### AIDS is not over in the higher-income countries

The total number of people living with HIV in North America and Western and Central Europe continues to grow and reached an estimated 2.3 million [2.0 million–2.7 million] in 2009—30% more than in 2001 (Table 2.8, Figure 2.18).

Unprotected sex between men continues to dominate patterns of HIV transmission in North America and Western and Central Europe, although injecting drug use and unprotected paid sex also feature (especially in Mexico and parts of southern Europe).

In France, for example, men who have sex with men account for more than half the men newly diagnosed with HIV, yet they represent only 1.6% of the country's population (92,93). This epidemic pattern means that men outnumber women among people living with HIV. In 2009, women comprised about 26% of the people living with HIV in North America and 29% of those in Western and Central Europe.

### Resurging epidemics among men who have sex with men

There is strong evidence of resurgent HIV epidemics among men who have sex with men in North America and in Western Europe (94). Data from 23 European countries show that the annual number of HIV diagnoses among men who have sex with men rose by 86% between 2000 and 2006 (95).

# 3160

Number of new HIV diagnoses among men who have sex with men in 2007 in the UK, the most ever reported up to that point.

The 3160 new HIV diagnoses among men who have sex with men in 2007 in the United Kingdom were the most ever reported up to that point (96). National surveillance data also show significant increases in new HIV diagnoses between 2000 and 2005 among men who have sex with men in Canada, Germany, the Netherlands, Spain, and the United States of America (97). In the United States of America, new HIV infections attributed to unprotected sex between men increased by more than 50% from 1991–1993 to 2003–2006 (98). Similar trends have been reported in Canada (99).

Increases in higher-risk sexual behaviour are associated with this trend. Researchers in Catalonia (Spain), for example, have reported that one third (32%) of men who have sex with men had recently had unprotected anal sex with a casual partner (100), and surveys in Denmark and Amsterdam (the Netherlands) have reported similar findings (101,102).

The HIV epidemics are disproportionately concentrated in racial and ethnic minorities in some countries. In the United States of America, for example, African-Americans constitute 12% of the population but accounted for 45% of the people newly infected with HIV in 2006 (98). African-American males are 6.5 times and African-American females 19 times more likely to acquire HIV compared with their Caucasian counterparts (103).

In Canada in the mid-2000s, aboriginal people comprised 3.8% of the population but accounted for 8% of the cumulative people living with HIV and 13% of the people newly infected annually. Two thirds (66%) of the people newly infected inject drugs (99).

Rates of new infections among people who inject drugs have been falling overall—largely due to harm-reduction services. In the Netherlands (67) and Switzerland (98), for example, HIV infections due to ‘social’ drug using—several people using the same contaminated injecting equipment—have almost been eliminated: at most 5% of new infections (in 2008 and 2007, respectively) were attributable to injecting drug use.

The epidemic is also declining among people who inject drugs in North America. Fewer than 10 000 people who inject drugs contracted HIV in 2006 in the United States of America, for example, one third as many as in 1984–1986.

Multiple use by different people of contaminated drug-injecting equipment can still dramatically accelerate an HIV epidemic, as Estonia has discovered. Hardly any people newly infected with HIV were detected there a decade ago; within a few years, a majority of the surveyed people who inject drugs (72% in one survey) were living with HIV (38).

There are also flashpoints along the border between Mexico and the United States of America where intersecting networks of drug use and paid sex appear to be driving the spread of HIV. Studies have found an HIV prevalence of 12% among female sex workers who inject drugs in Ciudad Juarez and Tijuana (104) and 3% among other people who inject drugs (105) in Tijuana. These localized epidemics have considerable potential for growth. In a large study among pregnant women in Tijuana, for example, the HIV prevalence was 1%, and among those who used drugs it was 6% (106).

Immigrants living with HIV have become a growing feature of the epidemics in several countries in Europe. Heterosexual transmission accounts for about half of the people newly infected with HIV in Central Europe (67), but many of these people were infected abroad (mostly in sub-Saharan Africa, the Caribbean, and Asia).

In the United Kingdom, about 44% of the people newly infected with HIV in 2007 had acquired HIV abroad, mainly in sub-Saharan Africa (96). Overall in Europe, almost one in five (17%) people newly diagnosed with HIV in 2007 were from countries with generalized epidemics (107). ■

# 19x

Increase in likelihood that African-American females will acquire HIV, compared to their Caucasian counterparts, in the United States.

## MIDDLE EAST AND NORTH AFRICA

Table 2.9

### AIDS statistics for the Middle East and North Africa, 2001 and 2009

Source: UNAIDS.

		People living with HIV	People newly infected with HIV	Children living with HIV	AIDS-related deaths
<b>MIDDLE EAST AND NORTH AFRICA</b>	<b>2009</b>	<b>460 000</b> [400 000–530 000]	<b>75 000</b> [61 000–92 000]	<b>21 000</b> [13 000–28 000]	<b>23 000</b> [20 000–27 000]
	<b>2001</b>	<b>180 000</b> [150 000–200 000]	<b>36 000</b> [32 000–42 000]	<b>7100</b> [3800–13 000]	<b>8300</b> [6300–11 000]

Figure 2.20

### HIV prevalence in Middle East and North Africa

HIV prevalence among adults aged 15–49 years old in Middle East and North Africa, 1990 to 2009.

Source: UNAIDS.

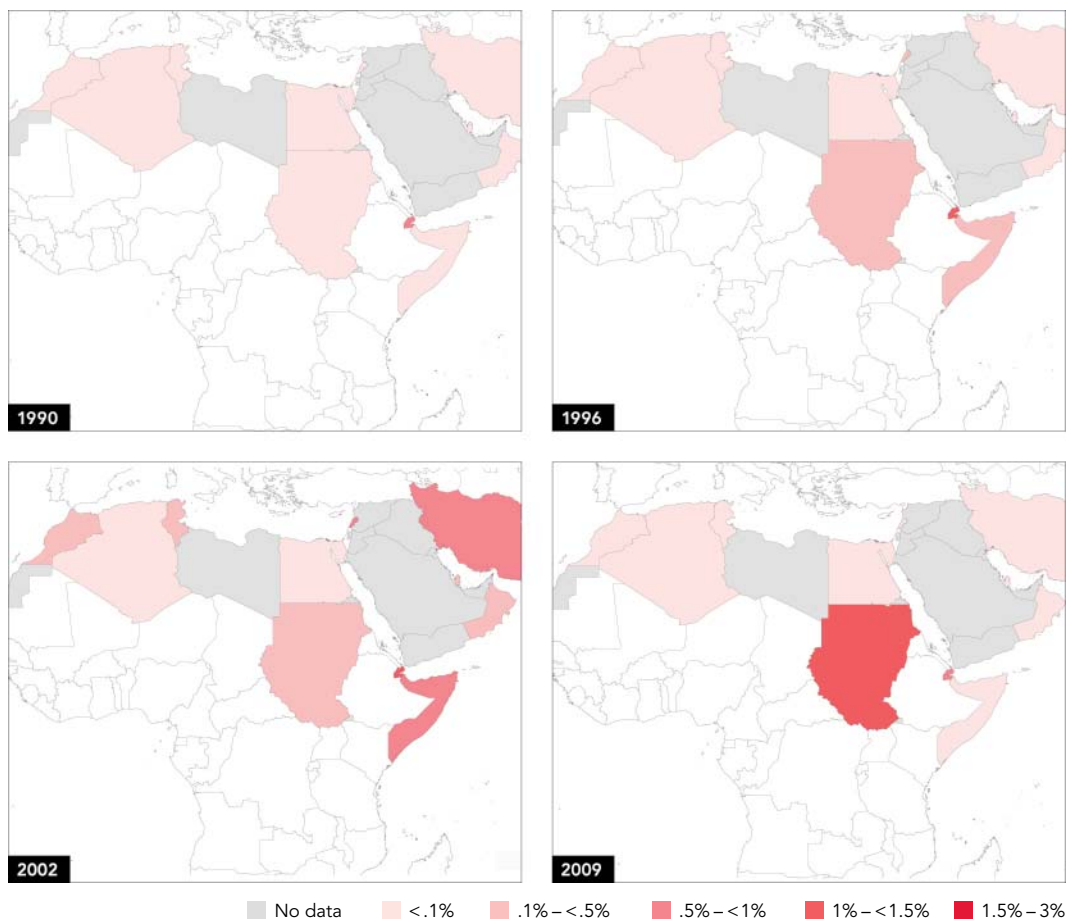
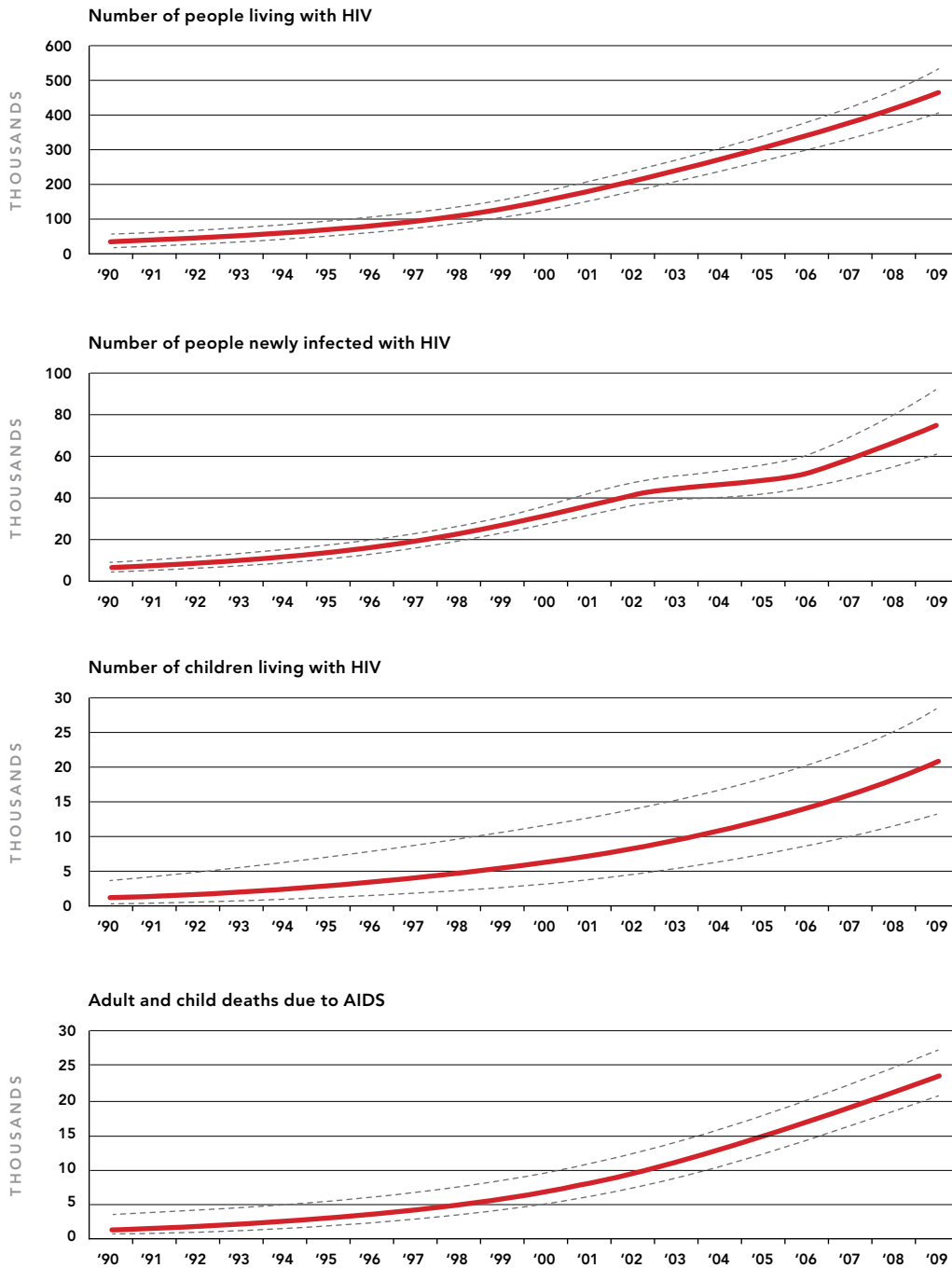


Figure 2.21  
**HIV trends in the Middle East and North Africa**

Source: UNAIDS.



## MIDDLE EAST AND NORTH AFRICA

### Increasing HIV prevalence, new HIV infections and AIDS-related deaths

An estimated 460 000 [400 000–530 000] people were living with HIV in the Middle East and North Africa at the end of 2009, up from 180 000 [150 000–200 000] in 2001 (Table 2.9 and Figure 2.20). The number of people newly infected has also increased over the last decade. There were 75 000 [61 000–92 000] people newly infected in 2009, more than twice the number (36 000 [32 000–42 000]) in 2001. AIDS-related deaths have nearly tripled: from 8300 [6300–11 000] in 2001 to 23 000 [20 000–27 000] at the end of 2009.

Reliable data on the epidemics in the Middle East and North Africa remain in short supply, creating difficulty in tracking recent trends with confidence. The available evidence points to increases in HIV prevalence, new HIV infections, and AIDS-related deaths.

The HIV prevalence is low—with the exceptions of Djibouti and southern Sudan, where HIV is spreading in the general population, and pregnant women using antenatal services have a HIV prevalence of more than 1%.

The Islamic Republic of Iran is believed to have the largest number of people who inject drugs in the region, and its HIV epidemic is centred mainly within this population group. An estimated 14% of people who inject drugs country-wide were living with HIV in 2007 (108).

# 80%

Prevalence of hepatitis C virus among detained people who inject drugs in Tehran.

The extremely high prevalence of hepatitis C virus (80%) found among detained people who inject drugs in Tehran (109) indicates considerable potential for the spread of HIV among and beyond people who inject drugs. It has been estimated that close to half (45%) of the Iranian prison population is incarcerated for drug-related offences (110,111). Exposure to contaminated drug-injecting equipment features in the epidemics of Algeria, Egypt, Lebanon, the Libyan Arab Jamahiriya, Morocco, Oman, the Syrian Arab Republic, and Tunisia.

### **Men who have sex with men disproportionately affected**

Sex between men is heavily stigmatized in this region and is a punishable offence in many countries. HIV services for men who have sex with men tend to be limited (112). Evidence indicates that men who have sex with men bear a disproportionate share of the HIV burden in at least some countries.

In surveys in Sudan, 8%–9% of men who have sex with men were living with HIV (70), compared with 6% in Egypt (113). As in other regions, many men who have sex with men also have sex with women (114).

### **Sex work networks exist but have low HIV prevalence**

The available evidence suggests that HIV transmission is still limited in paid sex networks. When surveyed in 2006, about 1% of female sex workers in Egypt were living with HIV (113), compared with an estimated 2%–4% in Algeria, Morocco and Yemen (112). There are not enough data to determine the extent to which HIV is being transmitted to sex workers' male clients and other sex partners and to their respective partners. ■

**“SEX BETWEEN MEN IS HEAVILY STIGMATIZED IN THE MIDDLE EAST AND NORTH AFRICA AND IS A PUNISHABLE OFFENCE IN MANY COUNTRIES.”**

# OCEANIA

Table 2.10  
**AIDS statistics for Oceania, 2001 and 2009**

Source: UNAIDS.

		People living with HIV	People newly infected with HIV	Children living with HIV	AIDS-related deaths
<b>OCEANIA</b>	<b>2009</b>	<b>57 000</b> [50 000–64 000]	<b>4500</b> [3400–6000]	<b>3100</b> [1500–4800]	<b>1400</b> [900–2400]
	<b>2001</b>	<b>28 000</b> [23 000–35 000]	<b>4700</b> [3800–5600]	<b>&lt;1000</b> [<500–1600]	<b>&lt;1000</b> [<500–1000]

Figure 2.22  
**HIV prevalence in Oceania**

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

Source: UNAIDS.

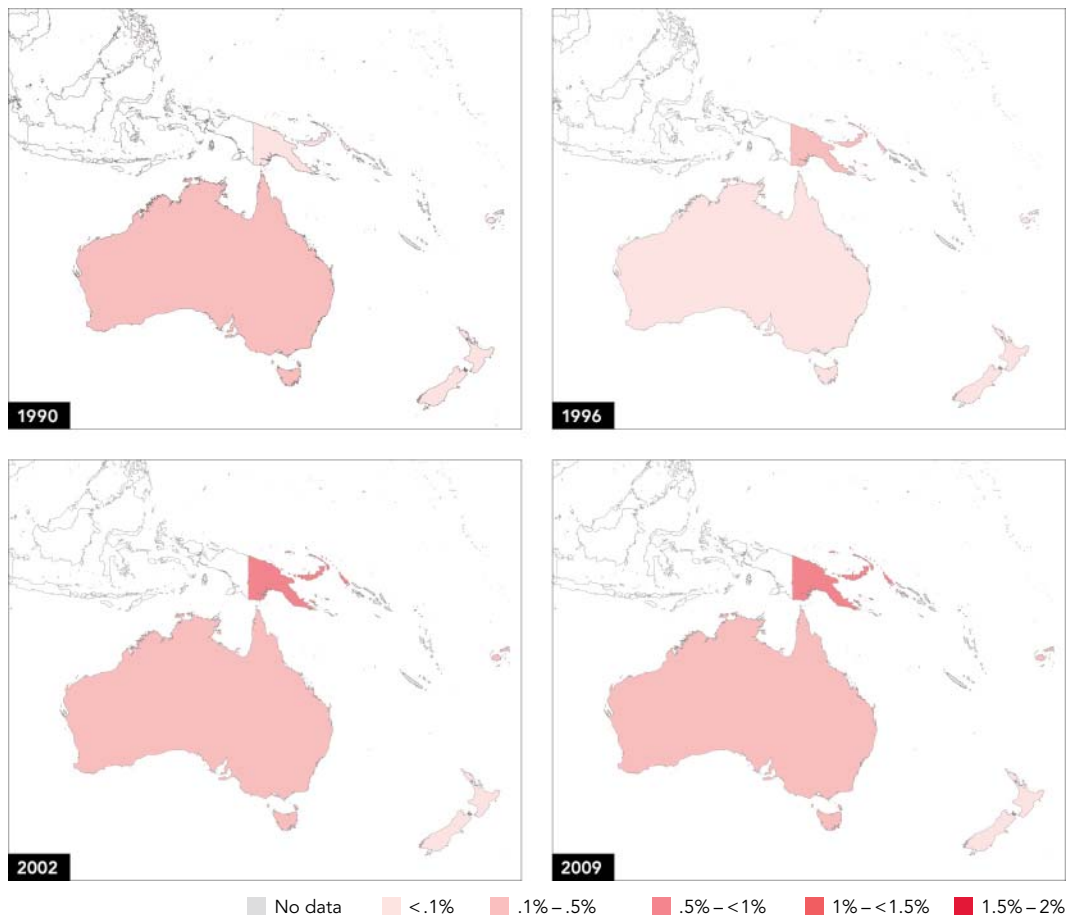
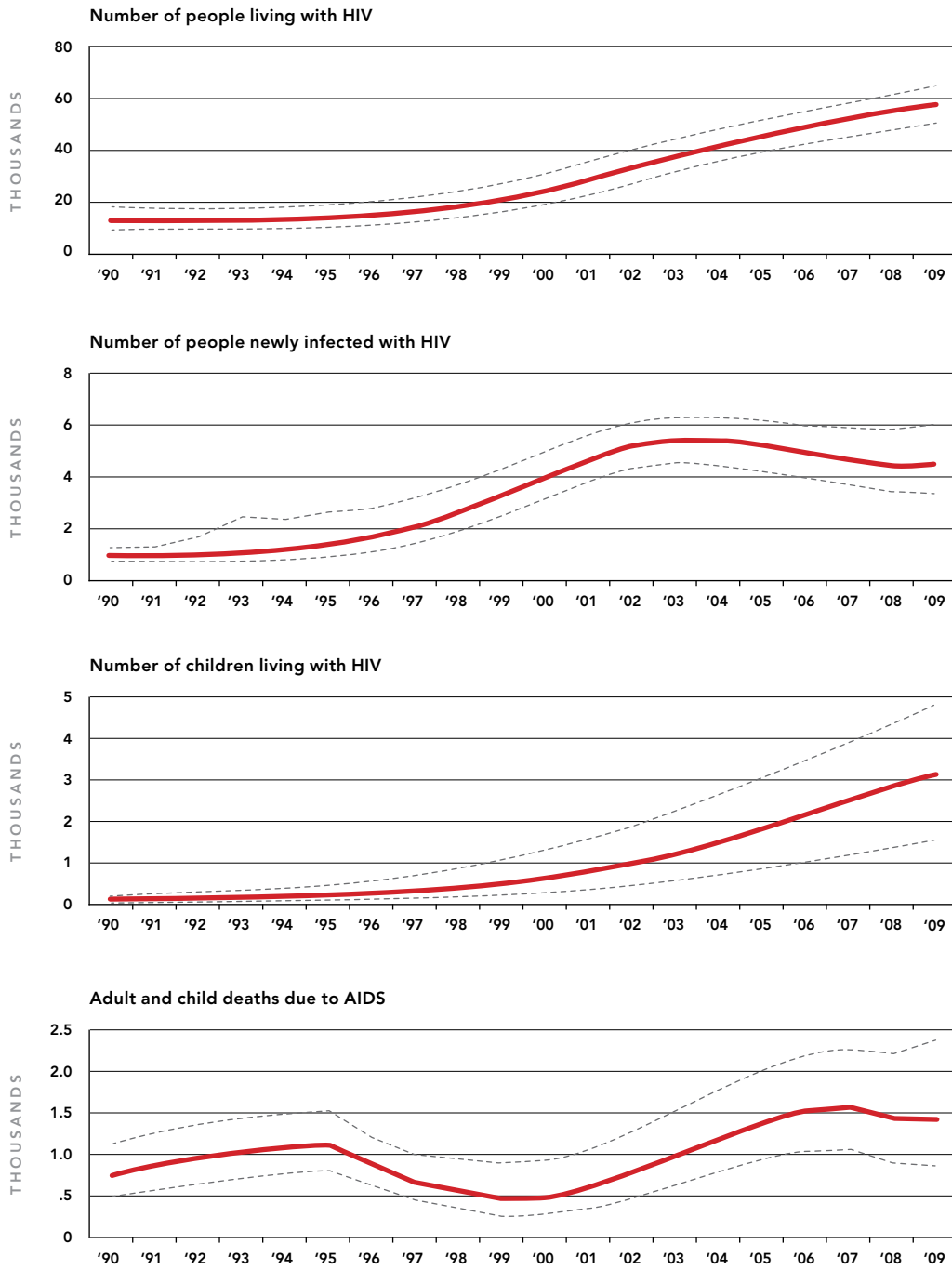


Figure 2.23  
**HIV trends in Oceania**

Source: UNAIDS.



## OCEANIA

**“THE HIV EPIDEMIC IN PAPUA NEW GUINEA IS THE LARGEST AND THE ONLY GENERALIZED ONE IN OCEANIA.”**

# 161

From 2005 to 2009, increase in number of testing sites with programmes that aim to prevent mother-to-child transmission of HIV.

### HIV epidemic begins to stabilize

The HIV epidemic in Oceania is small, but the number of people living with HIV in this region nearly doubled between 2001 and 2009—from 28 000 [23 000–35 000] to 57 000 [50 000–64 000] (Table 2.10 and Figure 2.22). However, the number of people newly infected with HIV has begun to decline from 4700 [3800–5600] in 2001 to 4500 [3400–6000] in 2009.

The HIV epidemic in Papua New Guinea is the largest and the only generalized one in this region. Recent analysis of available data across the country shows that the epidemic is starting to level off. The national adult HIV prevalence in 2009 was estimated at 0.9% [0.8%–1.0%], with about 34 000 [30 000–39 000] people living with HIV. The estimates were calculated using data from antenatal clinics in all parts of Papua New Guinea that offer HIV testing to pregnant women as part of routine care. Programmes that aim to prevent mother-to-child transmission of HIV substantially increased the number of sites providing testing services to women during recent years, from 17 in 2005 to 178 in 2009, also resulting in more information available for the estimation process.

### Sexual transmission promotes HIV epidemics

The HIV epidemics in Oceania are mainly driven by sexual transmission. Unprotected heterosexual intercourse is the main mode of transmission in Papua New Guinea, whereas unprotected sex between men predominates in the epidemics of the smaller Pacific countries and in those of Australia and New Zealand (115).

As in many other high-income countries with older HIV epidemics, new HIV diagnoses have increased among men who have sex with men in Australia and New Zealand in the past decade. The trend may point to increased higher-risk sexual behaviour in this population group (116,117).

A lack of survey data creates difficulty in determining the role of commercial sex work in Papua New Guinea’s epidemic, but paid sex appears to be commonplace among mobile populations, including migrant workers, transport workers, and military personnel (118).

**Injecting drug use—a small but significant factor**

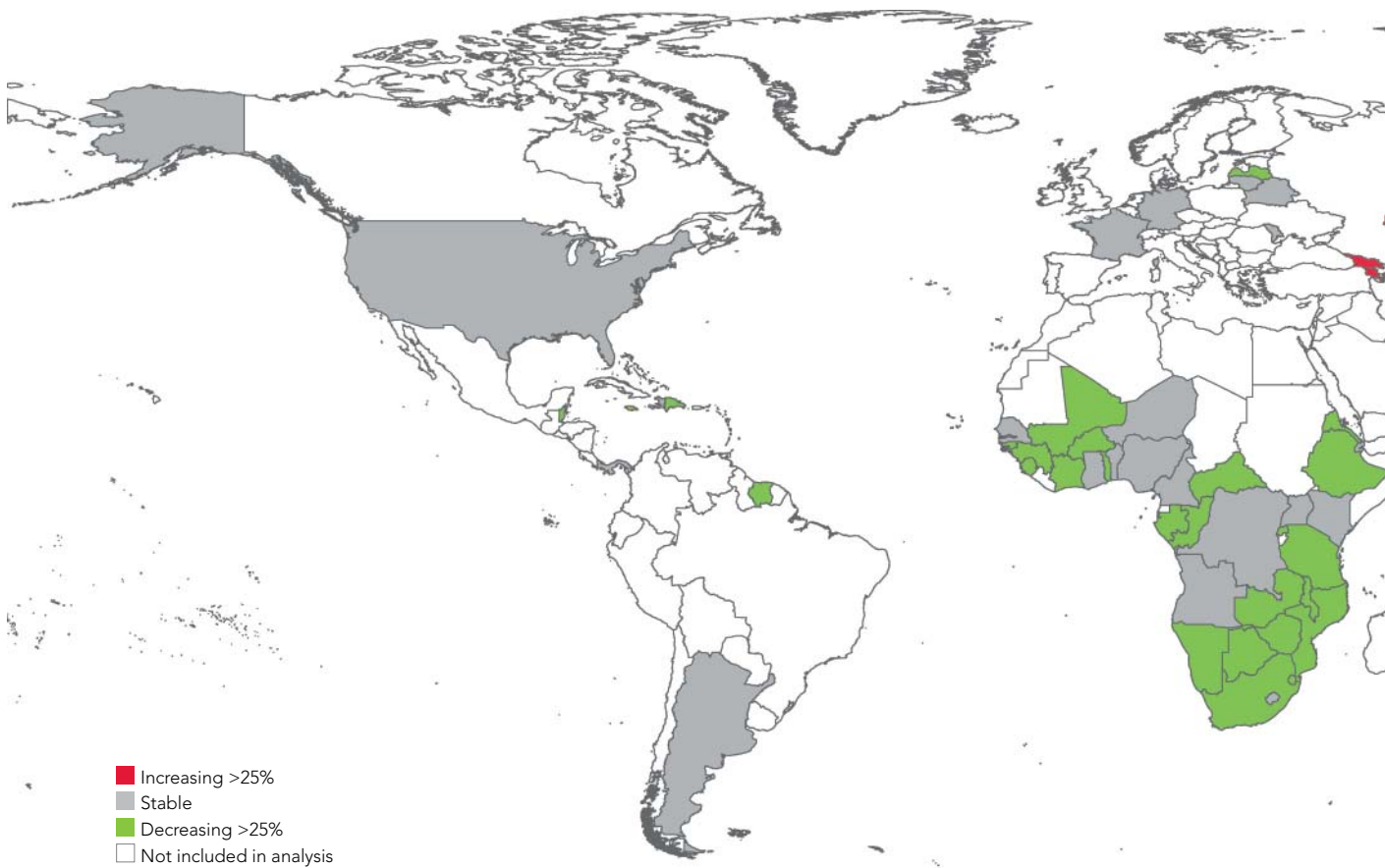
Injecting drug use is a minor factor in the epidemics in this region. But in parts of Australia, it features prominently in the HIV epidemic among aboriginal people. HIV infection among Aboriginal and Torres Strait Islander people was attributed to injecting drug use in 22% of cases over the past five years (117). However, in French Polynesia and Melanesia (excluding Papua New Guinea), people who inject drugs comprise 12% and 6%, respectively, of cumulative HIV case reports (115).

**Children newly infected—Papua New Guinea has most of the burden**

Mother-to-child transmission of HIV is a significant factor only in Papua New Guinea's epidemic, where nearly 10% of all people newly diagnosed with HIV to date acquired it during perinatal exposure (115). ■

## SCORECARD: INCIDENCE

Changes in the incidence rate of HIV infection, 2001 to 2009, selected countries



**Increasing >25%**

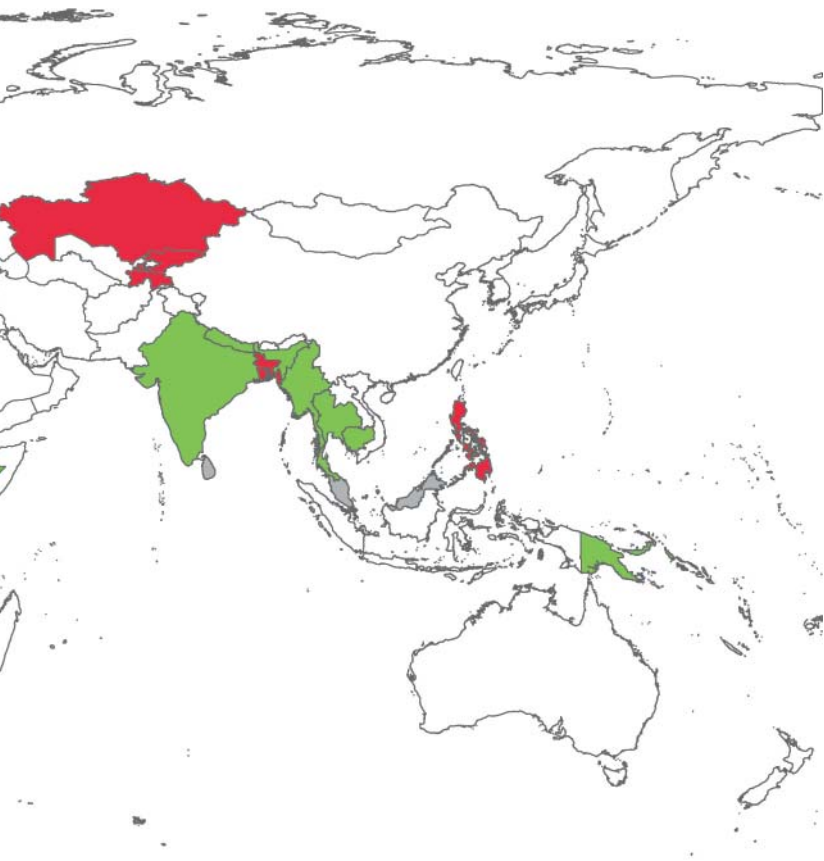
- Armenia
- Bangladesh
- Georgia
- Kazakhstan
- Kyrgyzstan
- Philippines
- Tajikistan

**Stable**

- Angola
- Argentina
- Belarus
- Benin
- Cameroon
- Democratic Republic of the Congo
- Djibouti
- France
- Germany
- Ghana
- Haiti
- Kenya
- Lesotho
- Lithuania
- Malaysia
- Niger
- Nigeria
- Panama
- Republic of Moldova
- Senegal
- Sri Lanka
- Uganda
- United States of America

**Decreasing >25%**

- Belize
- Botswana
- Burkina Faso
- Cambodia
- Central African Republic
- Congo
- Côte d'Ivoire
- Dominican Republic
- Eritrea
- Ethiopia
- Gabon
- Guinea
- Guinea-Bissau
- India
- Jamaica
- Latvia
- Malawi
- Mali
- Mozambique
- Myanmar
- Namibia
- Nepal
- Papua New Guinea
- Rwanda
- Sierra Leone
- South Africa
- Suriname
- Swaziland
- Thailand
- Togo
- United Republic of Tanzania
- Zambia
- Zimbabwe



In the absence of a reliable diagnostic test that can directly measure the level of new HIV infections in a population, estimates of HIV incidence have been produced through modeling. The map includes 60 countries for which reliable estimates of new HIV infections over time were available from the 2010 round of country-specific estimation using the EPP/Spectrum tools, and 3 countries for which peer-reviewed publications with incidence trends were available. The EPP/Spectrum methods estimate HIV incidence trends from HIV prevalence over time combined with the changing level of antiretroviral therapy. The criteria for including countries in this analysis were as follows. EPP files were available and trends in EPP were not derived from workbook prevalence estimates; prevalence data were available up to at least 2007; there were at least four time points between 2001 and 2009 for which prevalence data were available for concentrated epidemics and at least three data points in the same period for generalized epidemics; for the majority of epidemic curves for a given country, EPP did not produce an artificial increase in HIV prevalence in recent years due to scarcity of prevalence data points; data were representative of the country; the EPP/Spectrum-derived incidence trend was not in conflict with the trend in case reports of new HIV diagnoses; and the EPP/Spectrum-derived incidence trend was not in conflict with modelled incidence trends derived from age-specific prevalence in national survey results. For some countries with complex epidemics including multiple populations groups with different risk behaviours as well as major geographic differences, such as Brazil, China and the Russian Federation, this type of assessment is highly complex and it could not be concluded in the 2010 estimation round. UNAIDS will continue to work with countries and partners to improve the quality of available information and modeling methodologies to include HIV incidence data for additional countries in future reports.