

Annex 1.

Data by WHO region and methods used in estimating the numbers of people receiving and needing ARV therapy

Estimated number of people receiving ARV therapy, people needing ARV and percentage coverage in developing and transitional countries by WHO region, December 2004^{a,b}

WHO region	Estimated number of people receiving ARV therapy, December 2004 (low estimate–high estimate) ^c	Estimated number of people 15–49 years old needing ARV therapy, 2004 ^d	ARV therapy coverage, December 2004 (%) ^e	Estimated number of people receiving ARV therapy, June 2004
African Region	310 000 [270 000–350 000]	4 000 000	8%	150 000
Region of the Americas	275 000 [260 000–290 000]	425 000	65%	220 000
European Region	15 000 [13 000–17 000]	150 000	10%	11 000
Eastern Mediterranean Region ^f	4 000 [2 000–6 000]	77 500	5%	4 000
South-East Asia Region	85 000 [70 000–100 000]	950 000	9%	40 000
Western Pacific Region	17 000 [15 000–19 000]	200 000	9%	15 000
Total	700 000 [630 000–780 000]	5.8 million	12%	440 000

Note: numbers do not add up due to rounding.

^a See below for explanation of the methods used.

^b All countries except those in western Europe and Australia, Bahamas, Bahrain, Brunei, Canada, Cyprus, Grenada, Israel, Japan, Kuwait, New Zealand, Qatar, Republic of Korea, Singapore, United Arab Emirates and United States of America.

^c A few countries report the number of children younger than 15 years of age receiving ARV therapy, and they have been included in this table. Preliminary data show that, overall, less than 5% of the total number receiving ARV therapy are children younger than 15 years of age.

^d The figure presented is the midpoint of the low and high estimates of the number of AIDS deaths and the number of AIDS cases.

^e This is a best coverage estimate based on the midpoints of the number of people receiving ARV therapy and the estimated need for ARV therapy.

^f No updates have been received from the Eastern Mediterranean Region since June 2004.

Explanatory notes (also apply to Table 1 of the report)

Number of people 15–49 years old receiving ARV therapy, December 2004 (low estimate–high estimate)

The estimate of the number of people receiving ARV therapy is based on the most recent report received from the Ministry of Health, the WHO or UNAIDS office in the country or another reliable source in the country. Annex 2 provides details. The estimated numbers will be somewhat uncertain for countries that have not yet established systems for monitoring the people receiving therapy with regular reporting of numbers of new people receiving treatment, adherence, defaulters, loss to follow-up and deaths. One source of uncertainty is that country-reported figures often do not distinguish between those who have ever started ARV therapy and those who are still on treatment (that is, continuing to pick up and take their drugs). The difference between the two numbers reflects losses due to discontinuation of treatment or death.

Another source of uncertainty is the difficulty of measuring the extent of ARV therapy provided through the private sector. Many people are supplied with ARV drugs through local pharmacies and private clinics that do not report through the usual channels (this also applies to treatment for other diseases). Private companies may have programmes that support ARV therapy for workers with advanced HIV infection, but in many cases data are not easily accessible.

A third source of uncertainty arises from the time lag between global reporting, which is for the end of 2004, and country reporting, which usually relates to an earlier point in time. The current rapid expansion in numbers has required estimating the monthly increases and projecting these to December 2004. Thus, the estimates for end of 2004 are based on simple linear projections of reported numbers using the current trend as an indicator of growth.

Because of the uncertainty involved in making the overall estimates by country, the annex tables indicate uncertainty ranges for the December 2004 estimate of the number of people receiving treatment. For the country-reported data, public sector only or public and private sector combined, we used 0–10% uncertainty ranges depending on the strength of the monitoring system. For private sector numbers, which were separately reported for a limited number of countries, we used uncertainty ranges of 10–30%. For the numbers of people receiving ARV therapy, we used a 0.8% monthly attrition rate from dropping out of treatment or death (corresponding to an annual attrition of 10%).

Estimated number of people 15–49 years old needing ARV therapy, 2004

UNAIDS and WHO have developed a standard method to estimate the size and course of the AIDS epidemic²⁶ that also generates estimates of the number of new HIV infections, AIDS cases and deaths. These numbers are used to estimate the number of adults needing treatment, taking into account the maturity of the epidemic. In a young and growing epidemic, a smaller proportion of HIV-infected people will need to start treatment than in a mature or declining epidemic.

WHO recommends that, in resource-constrained settings, HIV-infected adults and adolescents start ARV therapy when the infection has been confirmed and there are signs of clinically advanced disease (HIV disease stage IV, regardless of CD4 cell count or stage III with CD4 cell count below 350 cells per mm³) or laboratory evidence of severe immune suppression (CD4 cell count below 200 per mm³ or, if not available, lymphocyte count below 1200 per mm³ with symptomatic disease.²⁷

Studies have shown that the median survival time for people with AIDS who are not receiving ARV therapy, in resource-constrained settings is just under one year.²⁸ Ideally, people should start receiving treatment before they develop AIDS: once they have advanced HIV infection. The number of adults with advanced HIV infection who need to start treatment is estimated as the number of AIDS cases in the current year times two.

The total number of adults needing ARV therapy is calculated by adding the number of adults needing to start ARV therapy to the number of adults who were being treated in the previous year and survived into the current year. Since some of the adults who are projected to develop AIDS in these two years may already have started treatment in the previous year, the number needing to start ARV therapy is adjusted to subtract the adults who started treatment in the previous year. It is currently assumed that between 80% and 90% of adults receiving treatment will survive to the following year, depending on the time of treatment initiation, adherence to treatment, drug resistance patterns, the quality of clinical management and other factors.

Again, there is uncertainty around these estimates. This is related to uncertainty in the estimates of HIV prevalence, AIDS cases, AIDS deaths and treatment need. The better the surveillance system in place in the country, the smaller the uncertainty range. The greatest difficulty lies in estimating treatment needed, especially because of the uncertainty around death rates. If programme performance is good and increasing numbers of people begin treatment, coverage will increase but only slowly because need will be increasing at the same time. If programme performance is sluggish, people will die before receiving treatment, but

²⁶ Ward H, Walker N, Ghys PD, eds. Methods and tools for HIV/AIDS estimates and projections. *Sexually Transmitted Infections*, 2004, 80(Suppl. 1):i1–i38.

²⁷ *Scaling up antiretroviral therapy in resource-limited settings: treatment guidelines for a public health approach*. Geneva, World Health Organization, 2003 (http://www.who.int/3by5/publications/documents/arv_guidelines/en, accessed 31 December 2004).

²⁸ Schneider M, Zwahlen M, Egger M. *Natural history and mortality in HIV-positive individuals living in resource-poor settings: a literature review*. London, UNAIDS Reference Group on Estimates, Modelling and Projections, 2004 (http://www.epidem.org/Publications/unaid%20HQ_03_463871%20final.pdf, accessed 31 December 2004).

coverage will decrease only slowly because the need also decreases. Survival rates may also improve if programmes expand, as more people will begin treatment earlier.

ARV therapy coverage, December 2004

The coverage is the number of people receiving ARV therapy by the end of 2004 divided by the estimated number of people needing ARV therapy. The latter figure only includes adults 15–49 years old, as no good method to estimate need in children is currently available. Further, adults 50 years and older are not included, as no estimate of HIV prevalence is available. The numerator includes children and all adults, and coverage is therefore slightly overestimated. Children, however, are only a small proportion of the number of people receiving treatment, probably less than 5% (see also main text).

Estimated number of people 15–49 years old receiving ARV therapy, June 2004

Estimates made for the first "3 by 5" progress report presented at the XV International AIDS Conference in Bangkok, Thailand.