

## 2. HIV TESTING AND COUNSELLING

### Key findings

- More countries provided information on HIV testing and counselling than in previous years. In 2008, 119 countries reported data on the availability of HIV testing and counselling in health facilities and 101 countries reported on the uptake of these services, up from 81 and 53 countries (respectively) in 2007.
- Nearly 90% of reporting countries had national HIV testing and counselling policies in 2008, up from 70% in 2007. Among the 53 countries with generalized HIV epidemics that reported information on provider-initiated HIV testing and counselling, half reported that their policies encourage health care workers to propose testing and counselling to everyone, regardless of presenting symptoms and type of facility.
- The reported number of health facilities providing HIV testing and counselling increased to 95 300 in 2008 (119 countries), up from 30 500 in 2007 (81 countries) and 21 900 in 2006 (52 countries). In 66 low- and middle-income countries reporting comparable data in 2007 and 2008, the combined availability of HIV testing and counselling services increased from 25 000 to 33 600, with varying rates across countries.
- The expansion of HIV testing and counselling services was accompanied by an increase in uptake. In 39 low- and middle-income countries which reported comparable data in 2007 and 2008, the combined reported number of HIV tests performed in these countries more than doubled over the two-year period.
- Data from 6 countries in sub-Saharan Africa which have conducted repeated population-based surveys since 2002 show that an increasing percentage of survey participants report having received an HIV test in recent years. The data also show that on the whole, more women report being tested than men.
- Despite these reported increases in the availability and uptake of HIV testing and counselling, knowledge of HIV status remains inadequate. Seven population-based surveys conducted in 2007 and 2008 indicate that the median percentage of people living with HIV who knew their HIV status prior to the survey remains below 40%.
- Reported proportions of population groups most at risk who received HIV testing and counselling in the past 12 months are also low. The median percentage of those who had received HIV testing and counselling was 38% among sex workers (45 reporting countries), 23% among people who inject drugs (26 reporting countries) and 30% among men who have sex with men (31 reporting countries).
- The use of diverse and appropriate provider-initiated and client-initiated approaches is necessary to expand HIV testing and counselling uptake and facilitate access to prevention, care and treatment services.

HIV testing and counselling is often referred to as the gateway to HIV prevention, treatment and care services, and needs to be linked to prevention and care to increase the coverage of services around HIV. Although diverse client-initiated and provider-initiated models are increasing service availability and more people are being tested for HIV, people's knowledge of HIV status remains low and HIV infection is often diagnosed late. Low uptake of HIV testing is one of the reasons for delayed access to antiretroviral therapy for people in need and in high mortality in the months after treatment is initiated (see Chapter 4). Even when people report being aware of their HIV-negative status, their knowledge may not be accurate or up to date.

This chapter synthesizes the global situation regarding the availability and coverage of HIV testing and counselling. Although the evidence is still insufficient, information is increasingly available on policies and programmes from low- and middle-income countries and the process by which this information is collected and compiled is improving rapidly. In 2008, as many as 119 countries reported information on the availability of HIV testing and counselling in health facilities and 101 countries reported on the uptake of these services, up from 81 and 53 countries (respectively) in 2007. All sources of data indicate upward trends in the availability and uptake of HIV testing and counselling services. They also show that progress is uneven across and within countries (Box 2.1).

## 2.1. HIV testing and counselling policies

WHO and UNAIDS recommend continuing the scale-up of client-initiated HIV testing and counselling (in which individuals actively seek HIV testing and counselling at a

facility that offers these services) and provider-initiated HIV testing and counselling in health facilities, in which health care providers recommend an HIV test:

- for everyone, irrespective of epidemic setting, whose clinical presentation might result from underlying HIV infection;
- as a standard part of health care for everyone attending health facilities in generalized HIV epidemics; and
- more selectively in concentrated and low-level epidemics.

Data show that the number of countries that have developed national policies on HIV testing and counselling has increased in recent years. Nearly 90% (111 of 125 countries reporting) indicated having national HIV testing and counselling policies, an increase since 2007 when 70% (58 of 82 countries reporting) had HIV testing and counselling policies.

Second, HIV testing and counselling is increasingly shifting from the client-initiated model (also referred to as voluntary counselling and testing) towards including other modalities, especially provider-initiated testing and counselling. Country efforts have increased attention to testing at health facilities, facilitated by normative guidance by WHO and UNAIDS. The WHO/UNAIDS guidance on provider-initiated HIV testing and counselling in health facilities issued in 2007 (3) defined the conditions under which testing would be offered and conducted at health facilities as well as the key elements designed to ensure that individuals' rights would be respected. Reports by countries indicate that policies are indeed giving greater attention to provider-initiated testing and counselling. Of 110 countries reporting this information on their policies in 2008, 95 indicated that the policy promoted provider-initiated testing and counselling

### Box 2.1. Data sources and interpretation

Describing availability and coverage of HIV testing and counselling requires information about the services themselves as well as estimates of the size of the population considered to need services, which in turn, depend on assessments of the state of the HIV epidemic and its characteristics in various countries. Thus, data need to be compiled from several sources, such as information on the procurement of HIV tests (Box 2.2); national health sector programme records; surveys among specific populations or reports by various groups; and population-based surveys. Some limitations exist when information from different countries is combined: definitions may not be standardized, and measurements depend on how services are organized. For instance, data on service availability and uptake may not cover all public, private and nongovernmental health facilities in the country or may not include all service delivery areas where HIV testing and counselling services are provided.

Despite these limitations, a broad picture of HIV testing and counselling can be obtained at the global and regional levels in 2008. This section uses the following data sources: reports by national programmes to WHO, UNICEF and UNAIDS over different time periods; population-based surveys conducted between 2005 and 2008, with special attention to repeated surveys conducted in the same countries; the Global Price Reporting Mechanism of the AIDS Medicines and Diagnostics Service (1); and the district-level assessments of service availability and uptake conducted in selected countries as part of the five-year evaluation of the Global Fund to Fight AIDS, Tuberculosis and Malaria (2). The picture described here represents an effort to make sense of these multiple sources of information. Further analyses would require more systematic investment of resources in strategic information.

in health facilities. In addition, 89 countries reported that their guidelines on provider-initiated testing and counselling ensure confidentiality and informed consent.

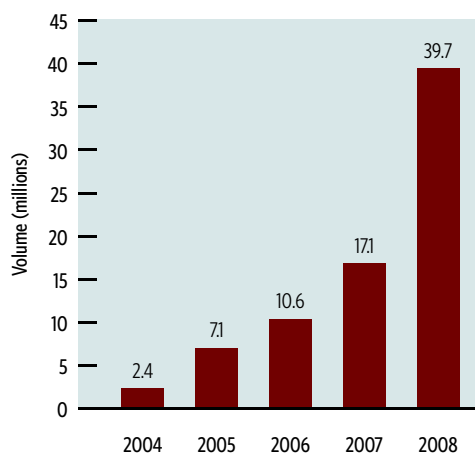
The WHO/UNAIDS guidance recommends that, in settings with generalized epidemics, HIV testing be initiated as a standard part of health care at health facilities, whereas in low-level or concentrated epidemics, HIV testing be

scaled up in selected health facilities. Among the 53 countries with generalized HIV epidemics that reported information on provider-initiated testing and counselling policies in 2008, half (including 20 in sub-Saharan Africa) report that their policies encourage health care workers to propose testing and counselling to everyone, regardless of presenting symptoms and type of facility. In 2007, only 12 of 27 reporting countries with generalized epidemics had reported having such policies.

## Box 2.2. Transaction volumes of HIV tests

Data on the procurement of HIV tests at the global level also indicate the growing demand and uptake of HIV testing worldwide. The Global Price Reporting Mechanism (GPRM) provides information on the transaction prices and volumes of HIV diagnostics procured by low-income, lower-middle-income and upper-middle-income countries (1). At the end of 2008, data on transactions were available from 75 countries. These data were analysed for 15 rapid tests for the period from 2004 to the first quarter of 2009 and for six ELISA (enzyme-linked immunosorbent assay) and four confirmatory tests purchased between 2007 and the first quarter of 2009. They show that the number of rapid tests procured almost doubled from 2007 to 2008 (Fig. 2.1). Analysing the representativeness of these data from the GPRM and their comparability over time is difficult because they cover only a fraction of the global transactions in diagnostic tests. Nevertheless, they are consistent with programmatic reports about the increased uptake of testing.

**Fig. 2.1. Transaction volumes of rapid HIV tests, 2004–2008**



1 Rapid tests: Capillus HIV 1/2, Clearview Complete HIV 1/2, Determine HIV 1/2, DoubleCheck Gold HIV 1/2, First Response HIV 1.2.0, Genie II HIV 1/2, HIV 1/2 Antibody Colloidal Gold, HIV Tri-dot, Immunocomb II Bispot HIV 1/2, OraQuick HIV 1/2, Retrocheck HIV test, SD Bioline HIV 1/2 3.0, Serodia HIV 1/2, Stat-Pak HIV 1/2, Uni-Gold HIV, ELISA (enzyme-linked immunosorbent assay) tests: Enzygnost Anti-HIV 1/2, Genedia HIV Ag-Ab, Genscreen HIV 1/2 V2, HIV EIA Elisa, Murex HIV Ag-Ab, Vironostika HIV Uni-form II. Confirmatory tests: HIV BLOT 2.2, Inno-Lia HIV 1/2, New LAV Blot, Pepti-LAV.

Similarly, 66 of 82 countries with low-level or concentrated epidemics had policies or guidelines to scale up HIV testing and counselling in selected health facilities such as those providing antenatal services, TB services, sexual health services and health services for population groups most at risk; 17 of these countries were in East, South and South-East Asia, 12 in Latin America and the Caribbean, 17 in Europe and Central Asia and 9 in the Middle-East and North Africa.

A third major observation regarding policies related to HIV testing and counselling is that most countries make HIV tests available free of charge in the public sector. In 2008, 94 of 101 countries across all regions had policies to provide free HIV testing in the public sector (Box 2.2).

## 2.2. HIV testing and counselling programmes

The results showing considerable expansion of HIV testing and counselling policies are consistent with the evidence available in the public health literature on HIV testing and counselling programmes. Reports from several countries in sub-Saharan Africa document the considerable expansion of testing and counselling and the emergence of new ways to encourage its use. Whereas in the 1990s, HIV testing and counselling was conducted largely in client-initiated testing sites, provider-initiated testing initiatives have been established in numerous countries and outreach programmes have been put in place: for example, in tertiary hospitals in Kenya, Malawi and Uganda (4–6) and in TB wards in Kenya and Uganda (7,8). Testing in the course of prenatal care, which was the first provider-initiated approach in such countries as Botswana, Kenya and Zimbabwe (9–13), has continued and expanded to an increasing number of countries. National testing and counselling campaigns have been planned and implemented in Burkina Faso, Kenya, Lesotho, Malawi, Namibia, Rwanda, South Africa, Swaziland, Uganda and the United Republic of Tanzania, and innovative approaches have included offering tests at workplaces such as in Rwanda and Zimbabwe (14,15), through mobile units or at people’s homes (16,17).

There is less evidence on progress in HIV testing and counselling in the published literature outside sub-Saharan Africa, in part because where HIV prevalence is lower

and concentrated among particular groups, the epidemic has not mobilized as much attention and resources as in sub-Saharan Africa. There are, nevertheless, examples of promising initiatives in Asia and Latin America, showing that making services accessible at health facilities, such as in labour wards, TB wards or private-sector facilities (18–21), increases the uptake of HIV testing and can reduce costs and increase effectiveness.

In high-income countries, despite the availability of services, many people living with HIV tend to be diagnosed late, after their immunity is compromised. Studies in Europe, Australia and the United States show that individuals who are eventually diagnosed with HIV had previously visited health facilities but were not offered an HIV test. Recent estimates (22–24) show that, in Europe, 15–38% of all people living with HIV present late when their CD4 counts are less than 200 per mm<sup>3</sup>. Such evidence underscores the missed opportunity that contact with health services represents. Similar delays are also noted in the United States. In 2006, the United States Centers for Disease Control and Prevention had recommended HIV screening for all people aged 13–64 years who attend health facilities in the United States, to address this problem. Such changes are expected to result in reaching individuals earlier in the process of

infection to provide the needed counselling, prevention and treatment services.

Scaling up access to testing and counselling services in Europe also raises a number of other issues that are common to low-prevalence settings in which the epidemic is concentrated among marginalized groups (Box 2.3). While in western Europe the challenge is to increase the uptake of testing and counselling services, in eastern Europe and central Asia the priority is to make quality services available and accessible, specially for populations at high risk. Policies need to be harmonized in accordance with the protection of individuals' rights and need to address stigma and discrimination. Services are not easily accessible to the people who need them the most – marginalized population groups – and their quality is uneven. The WHO Regional Office for Europe has initiated the development of a regional policy framework for testing and counselling, and a tool is being developed for this purpose.

### 2.3. Availability of HIV testing and counselling services

More countries are reporting on the number of health facilities providing HIV testing and counselling services; from 52 countries in 2006 to 81 countries in 2007 and 119 countries in 2008. The 119 countries reported 95 300 health facilities providing HIV testing and counselling services in 2008, up from 30 500 reported by 81 countries in 2007 and 21 900 by 52 countries in 2006. Such improvements in reporting allow the availability of HIV testing and counselling services to be described more comprehensively at the regional and global levels.

In 66 low- and middle-income countries that reported comparable data for 2007 and 2008, the total number of health facilities increased by about 35%, from 25 000 facilities in 2007 to 33 600 in 2008, with the increase ranging from 1.5 to 2 times across regions (Fig. 2.2).<sup>1</sup> In sub-Saharan Africa, the total number of health facilities providing HIV testing and counselling services increased by 50%, from 11 000 in 2007 to 16 500 in 2008, in the 37 countries in this region with comparable data for 2007 and 2008.

Increases in the number of facilities providing these services between 2007 and 2008 have been uneven (Table 2.1).

#### Box 2.3. HIV testing and counselling in Europe: the experience of Portugal

Portugal illustrates both the challenges of scaling up testing and counselling in Europe and possible responses to the epidemic. Until recently, HIV testing and counselling in Portugal was limited to formal health structures; it was mainly conducted as part of blood safety procedures, during the diagnostic work-up of people suspected of having HIV infection or for risk assessment at the request of the client who might have HIV infection or the health care provider.

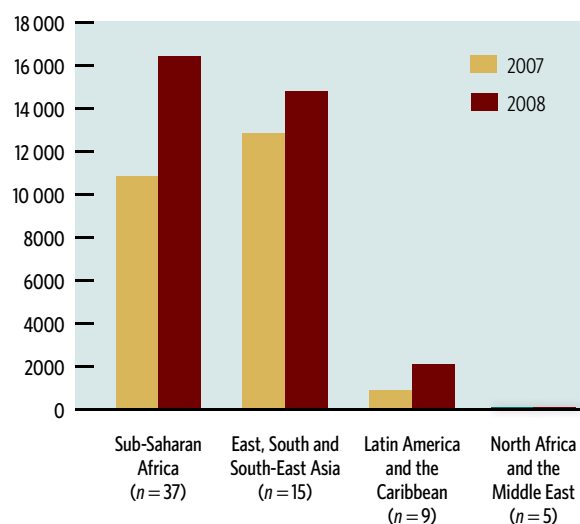
Growing awareness of the missed opportunities for diagnosing those who would benefit from HIV counselling, treatment, care and prevention has led to a rapid expansion of testing. Now about 1 million tests are performed yearly free of charge, most as part of the universal offer of testing to pregnant women. HIV testing is also conducted among drug users and in TB centres; this has helped to double the number of people receiving an HIV test between 2006 and 2008, reaching 85% of those receiving health care. The number of HIV tests performed in anonymous voluntary counselling and testing centres has increased tenfold, especially after rapid tests were introduced in 2007. Despite these efforts, multiple problems remain with access barriers, inconvenient schedules and unfriendly attitudes towards the most-vulnerable population groups. The proportion of people diagnosed with CD4 counts under 350 per mm<sup>3</sup> remains high at 60%. A national testing policy to expand testing to non-formal health settings (including prisons) and to increase the use of rapid tests in primary care is under discussion.

<sup>1</sup> Data reported by countries to WHO, UNICEF and UNAIDS in response to the annual reporting form for monitoring the health sector response to HIV/AIDS, 2009. The 66 countries considered for the analysis include those that reported data using consistent definitions in 2007 and 2008. Countries that clearly indicated that the data were not nationally representative were not included. The 66 countries include low- and middle-income countries from the regions of sub-Saharan Africa; East, South and South-East Asia; Latin America and the Caribbean; and the Middle East and North Africa. Data for an additional 11 countries in Europe and Central Asia are available for 2006 and 2008.

For instance, some countries have increased by 50–100%, such as Burkina Faso (from 454 to 815 facilities), Cameroon (1107 to 1860), Ethiopia (1005 to 1469) and the United Republic of Tanzania (527 to 1035), whereas others show smaller increases. Overall availability of services, measured by the proportion of total health facilities in a country that offer HIV testing and counselling, varies considerably, from less than 10% in the Central African Republic, Congo, the Democratic Republic of the Congo, Gabon, Mauritania, Niger, Nigeria and Somalia to more than 70% in Botswana, Lesotho, Malawi, Namibia, Rwanda, Sao Tome and Principe, Swaziland and Zimbabwe.

Among 15 countries in East, South and South-East Asia with comparable data for 2007 and 2008, the total reported number of health facilities providing HIV testing and counselling services increased from 13 000 to 15 000. China reported an additional 740 facilities providing these services in 2008, bringing the total to 6082. The reported number of facilities increased from 4269 to 4817 in India and from 961 to 1014 in Thailand. In Papua New Guinea, which has a generalized HIV epidemic, the reported number of facilities increased from 32 in 2007 to 118 in 2008.

**Fig. 2.2. Reported number of health facilities providing HIV testing and counselling services in low- and middle-income countries with comparable data, by region, 2007 and 2008**



*n*: number of countries by subregion among all 66 countries with comparable data for 2007 and 2008.

**Table 2.1. Number of health facilities with HIV testing and counselling services and ratio of adult population (≥15 years) per testing and counselling facility in 77 reporting low- and middle-income countries, by region, 2007 and 2008**

|                                  | Epidemic level | Number of facilities with HIV testing and counselling, 2007 | Number of facilities with HIV testing and counselling, 2008 | Population ≥15 years per testing and counselling facility, 2007 | Population ≥15 years per testing and counselling facility, 2008 |
|----------------------------------|----------------|---|---|---|---|
| <b>Sub-Saharan Africa</b>        |                |   |   |   |   |
| Angola                           | Generalized    | 154   | 221   | 54 000  | 38 000  |
| Benin                            | Generalized    | 183   | 389   | 22 000  | 10 000  |
| Botswana                         | Generalized    | 634   | 643   | 2 000   | 2 000   |
| Burkina Faso                     | Generalized    | 454   | 815   | 16 000  | 9 000   |
| Burundi                          | Generalized    | 180   | 266   | 23 000  | 16 000  |
| Cameroon                         | Generalized    | 1107  | 1860  | 8 000   | 5 000   |
| Cape Verde                       | Generalized    | 32  | 32  | 8 000   | 8 000   |
| Central African Republic         | Generalized    | 24  | 78  | 86 000  | 27 000  |
| Comoros                          | Concentrated   | 4   | 13  | 85 000  | 26 000  |
| Congo                            | Generalized    | 54  | 101   | 33 000  | 17 000  |
| Côte d'Ivoire                    | Generalized    | 124   | 457   | 79 000  | 21 000  |
| Democratic Republic of the Congo | Generalized    | 286   | 315   | 100 000   | 91 000  |
| Djibouti                         | Generalized    | 24  | 28  | 19 000  | 16 000  |
| Eritrea                          | Generalized    | 109   | 130   | 23 000  | 19 000  |
| Ethiopia                         | Generalized    | 1005  | 1469  | 37 000  | 25 000  |
| Gabon                            | Generalized    | 75  | 75  | 10 000  | 10 000  |
| Gambia                           | Concentrated   | 26  | 32  | 30 000  | 24 000  |
| Ghana                            | Generalized    | 422   | 524   | 28 000  | 22 000  |
| Lesotho                          | Generalized    | 163   | 204   | 6 000   | 5 000   |
| Liberia                          | Generalized    | 12  | 90  | 149 000   | 20 000  |
| Madagascar                       | Concentrated   | 630   | 757   | 14 000  | 12 000  |
| Malawi                           | Generalized    | 504   | 677   | 13 000  | 10 000  |
| Mali                             | Generalized    | 58  | 260   | 104 000   | 23 000  |
| Mauritania                       | Concentrated   | 22  | 17  | 74 000  | 96 000  |

|  | Epidemic level | Number of facilities with HIV testing and counselling, 2007 | Number of facilities with HIV testing and counselling, 2008 | Population ≥15 years per testing and counselling facility, 2007 | Population ≥15 years per testing and counselling facility, 2008 |
|--|----------------|---|---|---|---|
| Mozambique                                 | Generalized    | 359   | 359   | 29 000  | 29 000  |
| Namibia                                    | Generalized    | 253   | 306   | 4 000   | 4 000   |
| Niger                                      | Concentrated   | 145   | 172   | 43 000  | 36 000  |
| Nigeria                                    | Generalized    | 736   | 897   | 97 000  | 80 000  |
| Rwanda                                     | Generalized    | 312   | 341   | 15 000  | 14 000  |
| Sao Tome and Principe                      | Low level      | 32  | 40  | 2 000   | 2 000   |
| Senegal                                    | Concentrated   | 190   | 281   | 31 000  | 21 000  |
| Sierra Leone                               | Generalized    | 165   | 370   | 16 000  | 7 000   |
| Somalia                                    | Concentrated   | 17  | 19  | 240 000   | 215 000   |
| Swaziland                                  | Generalized    | 110   | 170   | 5 000   | 3 000   |
| Uganda                                     | Generalized    | 554   | 812   | 25 000  | 17 000  |
| United Republic of Tanzania                | Generalized    | 1 035   | 1 677   | 19 000  | 12 000  |
| Zimbabwe                                   | Generalized    | 791   | 1 560   | 8 000   | 4 000   |
| <b>East, South and South-East Asia</b>     |                |   |   |   |   |
| Cambodia                                   | Concentrated   | 190   | 212   | 41 000  | 37 000  |
| China                                      | Concentrated   | 5 342   | 6 082   | 142 000   | 125 000   |
| Fiji                                       | Low level      | 26  | 31  | 17 000  | 14 000  |
| India                                      | Concentrated   | 4269  | 4817  | 147 000   | 130 000   |
| Indonesia                                  | Concentrated   | 290   | 547   | 436 000   | 231 000   |
| Lao People's Democratic Republic           | Low level      | 36  | 91  | 87 000  | 35 000  |
| Mongolia                                   | Low level      | 30  | 59  | 54 000  | 27 000  |
| Nepal                                      | Concentrated   | 106   | 137   | 138 000   | 107 000   |
| Papua New Guinea                           | Generalized    | 32  | 118   | 103 000   | 28 000  |
| Philippines                                | Low level      | 52  | 52  | 908 000   | 908 000   |
| Sri Lanka                                  | Low level      | 26  | 29  | 407 000   | 365 000   |
| Thailand                                   | Concentrated   | 961   | 1014  | 39 000  | 37 000  |
| Viet Nam                                   | Concentrated   | 210   | 244   | 236 000   | 203 000   |
| <b>Latin America and the Caribbean</b>     |                |   |   |   |   |
| Belize                                     | Concentrated   | 17  | 11  | 9 000   | 14 000  |
| Bolivia (Plurinational State of)           | Concentrated   | 98  | 225   | 49 000  | 21 000  |
| Dominican Republic                         | Concentrated   | 127   | 150   | 41 000  | 35 000  |
| El Salvador                                | Concentrated   | 198   | 515   | 15 000  | 6 000   |
| Guatemala                                  | Concentrated   | 41  | 183   | 154 000   | 35 000  |
| Guyana                                     | Concentrated   | 131   | 147   | 3 000   | 3 000   |
| Haiti                                      | Generalized    | 140   | 144   | 36 000  | 35 000  |
| Honduras                                   | Concentrated   | 153   | 655   | 24 000  | 6 000   |
| Paraguay                                   | Concentrated   | 87  | 102   | 37 000  | 31 000  |
| <b>Middle East and North Africa</b>        |                |   |   |   |   |
| Iraq                                       | Low level      | 10  | 27  | 1 458 000   | 540 000   |
| Jordan                                     | Low level      | 4   | 12  | 836 000   | 279 000   |
| Lebanon                                    | Low level      | 23  | 20  | 100 000   | 116 000   |
| Tunisia                                    | Low level      | 6   | 11  | 980 000   | 534 000   |
| Yemen                                      | Low level      | 11  | 13  | 989 000   | 837 000   |
| <b>Europe and Central Asia<sup>a</sup></b> |                |   |   |   |   |
| Armenia                                    | Concentrated   | 29  | 150   | 56 000  | 11 000  |
| Azerbaijan                                 | Low level      | 19  | 43  | 265 000   | 117 000   |
| Bosnia and Herzegovina                     | Low level      | 9   | 12  | 218 000   | 164 000   |
| Georgia                                    | Low level      | 64  | 35  | 35 000  | 64 000  |
| Kazakhstan                                 | Concentrated   | 325   | 3 360   | 27 000  | 3 000   |
| Kyrgyzstan                                 | Concentrated   | 39  | 17  | 77 000  | 176 000   |
| Romania                                    | Low level      | 120   | 120   | 91 000  | 91 000  |
| Serbia                                     | Low level      | 20  | 75  | 242 000   | 65 000  |
| Tajikistan                                 | Low level      | 140   | 224   | 25 000  | 16 000  |
| The former Yugoslav Republic of Macedonia  | Low level      | 17  | 16  | 63 000  | 67 000  |
| Ukraine                                    | Concentrated   | 216   | 1806  | 110 000   | 13 000  |

Data on adult population size are from the United Nations Population Division (25).

<sup>a</sup>For Europe and Central Asia, data refer to 2006 (instead of 2007) and 2008.

#### Box 2.4. Measuring the impact of providing HIV testing and counselling in community-based settings

Community-based modalities for testing and counselling, such as through mobile, home-based or door-to-door outreach, can potentially reach population groups who are often missed through health facility-based services. These groups include men in general, women who are not accessing reproductive health services, young people, rural population groups with poor access to health care, ethnic minorities and populations most at risk. Community-based approaches represent a departure from the health service-based approach, which requires users to invest time, effort and resources to come to the service and may therefore discourage HIV testing. There have been numerous efforts to take services to people and offer testing and counselling in easily accessible and convenient locations, and assessing their effectiveness is important.

Project Accept HPTN 043 is the first international multi-site community-based randomized controlled study designed to determine the efficacy of a prevention intervention by measuring HIV incidence and stigma reduction as study endpoints (26). This large-scale trial randomized 34 sites in South Africa, the United Republic of Tanzania and Zimbabwe and 14 communities in Thailand to receive either standard, client-initiated testing and counselling or a community-based testing and counselling intervention. Intervention strategies include community outreach to encourage discussions about HIV, normalize knowledge of HIV status and increase HIV testing as well as post-test support services.

The trial is ongoing and is expected to be completed by June 2011. Preliminary data indicate that the uptake of HIV testing increased four-fold in the communities receiving the intervention, suggesting that it is possible to break barriers, reduce stigma, promote discussion and encourage people to be tested (27).

In Latin America and the Caribbean, nine countries report a two-fold increase in the number of health facilities providing HIV testing and counselling services, from nearly 1000 in 2007 to more than 2000 in 2008.

In addition to the 66 countries which reported data for 2007 and 2008, 11 countries from Europe and Central Asia provided data from 2006 and 2008. Overall, the data show a more than fivefold increase in the reported number of sites from about 1000 to nearly 6000, although individual country statistics are not unequivocal.

Table 2.1 also presents the ratio of the adult population per testing and counselling facility. This ratio decreases when testing expands. The data show that the number of adults served per testing and counselling facility between 2007 and 2008 has consistently declined, showing greater availability, but also show that wide differences remain among countries.

#### 2.4. Uptake and coverage of HIV testing and counselling

In 2008, 101 countries reported data on the uptake of HIV testing and counselling versus 53 countries in 2007. Although this clearly indicates improvements in the monitoring and reporting of HIV testing and counselling services, these data must be interpreted carefully – not only in relation to their completeness and national representativeness but also because they may include individuals re-testing for HIV during the reporting period.

Thirty-nine low- and middle-income countries, 19 of which are in sub-Saharan Africa, reported comparable data in

both 2007 and 2008<sup>1</sup> (Table 2.2). The combined reported number of tests in these countries more than doubled over the two-year period, in accordance with the reported increase in the number of health facilities providing these services. The reported increases in most countries appear to be consistent with what is known about efforts at the country level to scale up HIV testing, such as through provider-initiated approaches or through testing campaigns.

Once again, the data vary widely between countries, with some reporting very large increases in testing and counselling uptake. In Ethiopia, for instance, 4.5 million individuals were reported to have received testing and counselling during 2008, up from 1.9 million in 2007. In Swaziland, the reported uptake of testing and counselling increased from 52 000 during 2007 to 81 000 during 2008.

Similarly, nine countries in East, South and South-East Asia reported a combined increase of 63% in testing and counselling uptake, and nine countries in Latin America and the Caribbean reported a combined increase of about 50% from 2007 to 2008.

In addition to the 39 countries which reported data for 2007 and 2008, eight countries in Europe and Central Asia provided data on the uptake of testing in 2006 and 2008. Although not documented in every country, the combined data show an increase in the reported number of people who received an HIV test by more than 50% over the two-year period.

<sup>1</sup> Data reported by countries to WHO, UNICEF and UNAIDS in response to the annual reporting form for monitoring the health sector response to HIV/AIDS, 2009. The 39 countries considered for the analysis include those that reported data using consistent definitions in 2007 and 2008. Countries that clearly indicated that the data were not nationally representative were not included. The 39 countries include low- and middle-income countries from the regions of sub-Saharan Africa; East, South and South-East Asia; Latin America and the Caribbean; and the Middle East and North Africa. Data for an additional eight countries in Europe and Central Asia are available for 2006 and 2008.

**Table 2.2.** Number of people  $\geq 15$  years old who received HIV testing and counselling and number of tests per 1000 people  $\geq 15$  years old in 47 reporting low- and middle-income countries, 2007 and 2008<sup>a</sup>

|  | Epidemic level | Number $\geq 15$ years old tested in past 12 months, 2007 | Number $\geq 15$ years old tested in past 12 months, 2008 | Number of tests per 1000 population, 2007 <sup>b</sup> | Number of tests per 1000 population, 2008 <sup>b</sup> |
|--|----------------|---|---|--|--|
| <b>Sub-Saharan Africa</b>                  |                |   |   |  |  |
| Benin                                      | Generalized    | 71 103  | 175 086   | 18   | 43   |
| Botswana                                   | Generalized    | 273 676   | 218 313   | 263  | 210  |
| Cape Verde                                 | Generalized    | 12 523  | 17 000  | 48   | 65   |
| Central African Republic                   | Generalized    | 2 860   | 56 177  | 1  | 27   |
| Congo                                      | Generalized    | 2 771   | 55 892  | 2  | 32   |
| Eritrea                                    | Generalized    | 75 369  | 137 339   | 31   | 56   |
| Ethiopia                                   | Generalized    | 1 893 369   | 4 524 862   | 51   | 121  |
| Gambia                                     | Concentrated   | 27 022  | 17 693  | 35   | 23   |
| Ghana                                      | Generalized    | 306 759   | 467 936   | 26   | 40   |
| Guinea-Bissau                              | Generalized    | 18 290  | 20 521  | 25   | 29   |
| Lesotho                                    | Generalized    | 168 952   | 184 091   | 171  | 186  |
| Mauritania                                 | Concentrated   | 865   | 9 073   | 1  | 6  |
| Niger                                      | Concentrated   | 36 756  | 130 354   | 6  | 21   |
| Sao Tome and Principe                      | Low level      | 13 276  | 14 079  | 169  | 179  |
| Senegal                                    | Concentrated   | 108 355   | 134 460   | 19   | 23   |
| Sierra Leone                               | Generalized    | 78 330  | 6 5908  | 29   | 25   |
| Somalia                                    | Concentrated   | 4 779   | 7 714   | 1  | 2  |
| Swaziland                                  | Generalized    | 52 292  | 81 021  | 90   | 139  |
| Uganda                                     | Generalized    | 1 490 930 <sup>d</sup>                                    | 2 015 057 <sup>e</sup>                                    | 108  | 146  |
| <b>East, South and South-East Asia</b>     |                |   |   |  |  |
| Bangladesh                                 | Low level      | 10 562  | 24 101  | 0  | 0  |
| Cambodia                                   | Concentrated   | 234 900   | 296 510   | 30   | 38   |
| India                                      | Concentrated   | 5 364 239   | 8 734 504   | 9  | 14   |
| Indonesia                                  | Concentrated   | 53 929  | 109 544   | 0  | 1  |
| Iran, Islamic Republic of                  | Concentrated   | 21 146  | 40 862  | 0  | 1  |
| Lao People's Democratic Republic           | Low level      | 16 207  | 14 481  | 5  | 5  |
| Malaysia                                   | Concentrated   | 409 494   | 676 454   | 28   | 46   |
| Myanmar                                    | Concentrated   | 177 057   | 257 158   | 6  | 9  |
| Nepal                                      | Concentrated   | 49 130  | 86 567  | 3  | 6  |
| Papua New Guinea                           | Generalized    | 26 934  | 107 615   | 8  | 33   |
| Viet Nam                                   | Concentrated   | 101 230   | 181 448   | 2  | 4  |
| <b>Latin America and the Caribbean</b>     |                |   |   |  |  |
| Belize                                     | Concentrated   | 15 529  | 17 767  | 97   | 112  |
| Ecuador                                    | Concentrated   | 139 086   | 314 868   | 20   | 45   |
| Guatemala                                  | Concentrated   | 47 000  | 27 112  | 7  | 4  |
| Guyana                                     | Concentrated   | 13 011  | 60 812  | 33   | 154  |
| Haiti                                      | Generalized    | 291 225   | 454 290   | 58   | 91   |
| Honduras                                   | Concentrated   | 98 566  | 88 189  | 27   | 24   |
| Mexico                                     | Concentrated   | 831 584   | 1 228 298   | 14   | 21   |
| Nicaragua                                  | Concentrated   | 70 000  | 118 592   | 24   | 40   |
| Paraguay                                   | Concentrated   | 72 276  | 68 564  | 23   | 22   |
| <b>Middle East and North Africa</b>        |                |   |   |  |  |
| Iraq                                       | Low level      | 1 423   | 1 571   | 0  | 0  |
| Yemen                                      | Low level      | 121   | 2 176   | 0  | 0  |
| <b>Europe and Central Asia<sup>c</sup></b> |                |   |   |  |  |
| Armenia                                    | Concentrated   | 44 437  | 70 962  | 27   | 43   |
| Azerbaijan                                 | Low level      | 263 443   | 346 968   | 52   | 69   |
| Bosnia and Herzegovina                     | Low level      | 20 874  | 21 496  | 11   | 11   |
| Georgia                                    | Low level      | 40 638  | 40 205  | 18   | 18   |
| Kazakhstan                                 | Concentrated   | 725 815   | 1 047 712   | 84   | 121  |
| Lithuania                                  | Low level      | 47 689  | 178 245   | 28   | 104  |
| Romania                                    | Low level      | 143 417   | 276 496   | 13   | 25   |
| Tajikistan                                 | Low level      | 87 912  | 122 842   | 25   | 34   |

<sup>a</sup> Figures in the table are from reports from national programmes to WHO and provide estimates of the use of testing at the level of countries. Analysing changes over time based on these figures would require a process of cross-checking and validation.

<sup>b</sup> Data on adult population size are from the United Nations Population Division (25).

<sup>c</sup> For Europe and Central Asia, data refer to 2006 (instead of 2007) and 2008.

<sup>d</sup> October 2006 - September 2007.

<sup>e</sup> October 2007 - September 2008.

It is also useful to summarize data on the uptake of HIV testing and counselling services by specific population groups, such as people with TB, pregnant women and population groups most at risk. Chapter 4 provides details on HIV testing of people with TB, and Chapter 5 outlines data on HIV testing and counselling for pregnant women and children.

Information on HIV testing and counselling among sex workers, people who inject drugs and men who have sex with men is presented below. Reported proportions of population groups most at risk who received HIV testing and counselling in the past 12 months are low, and show the need for greater investment to monitor the access to essential services by these population groups. In 2008, 45 low- and middle-income countries reported data on access to HIV testing among sex workers, 26 for injecting drug users and 31 for men who have sex with men. Although these data may have been generated through surveys that are not nationally representative, and the sample sizes and methods are not comparable, compiling the available information

is nevertheless useful, keeping in mind that countries and regions vary widely. It should also be noted that some survey results may misestimate the proportion of injecting drug users accessing these services; for instance, where reported coverage is close to 100%, they may represent people enrolled in treatment services or other settings where an HIV test is required to access the service.

Table 2.3 shows the coverage of HIV testing and counselling programmes among populations most at risk of HIV acquisition. Among the 45 countries that reported data on sex workers, the median proportion of sex workers who knew their status from a recent HIV test was 38%. Similarly, the median of those who had received HIV testing and counselling was 23% among people who inject drugs (26 reporting countries) and 30% among men who have sex with men (31 reporting countries). Many population groups at high risk of HIV infection, including men who have sex with men, injecting drug users and prisoners, thus continue to face obstacles in accessing essential HIV prevention, treatment and care services.

**Table 2.3. Percentage who received an HIV test and the test results in the past 12 months and reported knowledge of HIV status among sex workers, people who inject drugs and men who have sex with men in low- and middle-income countries, 2006–2008**

| Number of countries reporting              | Percentage of population groups most at risk who received an HIV test in the past 12 months and who know the results <sup>a</sup> |                      |                           | Percentage of people 15–49 years old who know their HIV status |
|--|---|----------------------|---------------------------|--|
|  | Sex workers   | Injecting drug users | Men who have sex with men |  |
| <b>45</b>                                  | <b>26</b>   | <b>31</b>            | <b>27</b>                 |  |
| <b>Europe and Central Asia</b>             |   |                      |                           |  |
| Bosnia and Herzegovina                     | 14%   | 53%                  | 23%                       |  |
| Georgia                                    | 33%   | 9%                   |                           |  |
| Kazakhstan                                 | 68%   | 52%                  | 44%                       | 36%  |
| Latvia                                     |   | 4%                   | 100%                      |  |
| Lithuania                                  |   |                      | 56%                       |  |
| Republic of Moldova                        | 31%   | 34%                  |                           | 27%  |
| Romania                                    |   | 19%                  |                           |  |
| Serbia                                     | 45%   | 32%                  | 31%                       |  |
| The former Yugoslav Republic of Macedonia  |   | 44%                  | 56%                       |  |
| Ukraine                                    | 46%   | 29%                  | 26%                       |  |
| Median for Europe and Central Asia         | 39%   | 32%                  | 44%                       | —  |
| <b>Latin America and the Caribbean</b>     |   |                      |                           |  |
| Bolivia (Plurinational State of)           | 29%   |                      | 23%                       |  |
| Brazil                                     |   |                      | 24%                       | 39%  |
| Colombia                                   | 61%   |                      |                           |  |
| Dominican Republic                         | 95%   |                      |                           | 75%  |
| Ecuador                                    | 87%   |                      | 51%                       |  |
| Guyana                                     |   |                      |                           | 23%  |
| Honduras                                   | 71%   |                      | 39%                       | 19%  |
| Mexico                                     | 98%   | 98%                  | 98%                       |  |
| Paraguay                                   | 52%   | 12%                  | 34%                       |  |
| Peru                                       | 54%   |                      | 21%                       |  |
| Median for Latin America and the Caribbean | 66%   | —                    | 34%                       | —  |

|  | Percentage of population groups most at risk who received an HIV test in the past 12 months and who know the results <sup>a</sup> |                      |                           | Percentage of people 15-49 years old who know their HIV status |
|--|---|----------------------|---------------------------|--|
|  | Sex workers   | Injecting drug users | Men who have sex with men |  |
| <b>Middle East and North Africa</b>        |   |                      |                           |  |
| Jordan                                     | 9%  |                      | 3%                        |  |
| Lebanon                                    | 81%   | 66%                  | 35%                       |  |
| Morocco                                    | 51%   |                      |                           |  |
| Saudi Arabia                               |   | 1%                   |                           |  |
| Median for Middle East and North Africa    | —   | —                    | —                         | —  |
| <b>East, South and South-East Asia</b>     |   |                      |                           |  |
| Bangladesh                                 | 5%  | 4%                   | 3%                        |  |
| Cambodia                                   | 68%   | 54%                  | 57%                       | 11%  |
| China                                      | 36%   | 42%                  | 30%                       |  |
| Fiji                                       | 21%   | 11%                  | 6%                        |  |
| India <sup>b</sup>                         | 34%   | 3-70%                | 3-67%                     | 3%   |
| Indonesia                                  | 31%   | 36%                  | 32%                       |  |
| Iran (Islamic Republic of)                 | 20%   | 23%                  |                           |  |
| Lao People's Democratic Republic           | 18%   |                      | 5%                        |  |
| Mongolia                                   | 53%   |                      | 81%                       |  |
| Myanmar                                    | 71%   | 27%                  |                           |  |
| Nepal                                      | 32%   | 21%                  | 30%                       |  |
| Pakistan                                   | 8%  | 12%                  | 13%                       |  |
| Philippines                                | 12%   | 4%                   | 16%                       | 0%   |
| Thailand                                   |   |                      |                           |  |
| Timor-Leste                                |   |                      |                           | 100%   |
| Viet Nam                                   | 15%   | 11%                  | 16%                       |  |
| Median for East, South and South-East Asia | 26%   | 21%                  | 16%                       | —  |
| <b>Sub-Saharan Africa</b>                  |   |                      |                           |  |
| Benin                                      |   |                      |                           | 96%  |
| Burkina Faso                               |   |                      | 28%                       |  |
| Burundi                                    | 71%   |                      |                           |  |
| Cameroon                                   |   |                      |                           | 16%  |
| Chad                                       | 34%   |                      |                           | 22%  |
| Comoros                                    |   |                      |                           | 86%  |
| Côte d'Ivoire                              | 51%   |                      |                           |  |
| Democratic Republic of the Congo           | 37%   |                      |                           | 9%   |
| Djibouti                                   |   |                      |                           |  |
| Gabon                                      | 54%   |                      |                           |  |
| Gambia                                     |   |                      |                           | 2%   |
| Ghana                                      |   |                      |                           | 7%   |
| Guinea-Bissau                              | 3%  |                      |                           |  |
| Kenya                                      |   |                      |                           | 37%  |
| Madagascar                                 | 49%   |                      |                           |  |
| Mali                                       |   |                      |                           | 7%   |
| Mauritania                                 | 100%  |                      |                           |  |
| Namibia                                    |   |                      |                           | 46%  |
| Nigeria                                    | 39%   | 23%                  | 30%                       | 11%  |
| Rwanda                                     | 65%   |                      |                           | 21%  |
| Senegal                                    | 19%   |                      | 16%                       |  |
| Sierra Leone                               | 21%   |                      |                           | 100%   |
| Swaziland                                  |   |                      |                           | 27%  |
| Togo                                       | 40%   |                      |                           | 16%  |
| Uganda                                     |   |                      |                           | 24%  |
| Zambia                                     | 20%   |                      |                           | 28%  |
| Median for Sub-Saharan Africa              | 39%   | —                    | —                         | 22%  |

<sup>a</sup> This table includes data from surveys, including behavioural surveillance surveys, conducted in 2006, 2007 or 2008. Surveys with sample sizes of less than 100 people are not included.

<sup>b</sup> Median values are calculated by region if data from more than five countries were available.

<sup>c</sup> Ranges are not included in the calculation of the median.

## Box 2.5. Scaling up HIV testing and counselling at truck stops in Kenya

A study in Kenya (28) collected data on an innovative HIV testing and counselling programme at truck stops that targeted young male and female sex workers to develop networks of youth engaged in sex work together with their clients. HIV testing and counselling services were provided daily from 18:00 to 02:00 in selected high-risk areas. Overall, 8860 network members (including youth engaged in sex work and truck drivers) received testing and counselling within an 8-month period. Uptake of services was greater among men (62%) than among women (38%). In contrast, HIV prevalence was greater among young women (4%) than young men (2%). HIV prevalence rates were positively correlated with age: women aged 15-19 years had a prevalence rate of 2%, a number that increased markedly to 6% among 20- to 24-year-olds. Similarly, HIV prevalence among men aged 20-24 years, at 1.7%, was more than double the figure for those aged 15-19 years, which stood at 0.8%.

Socioeconomic status can also play an important role in determining equity of access to priority interventions (Box 2.6).

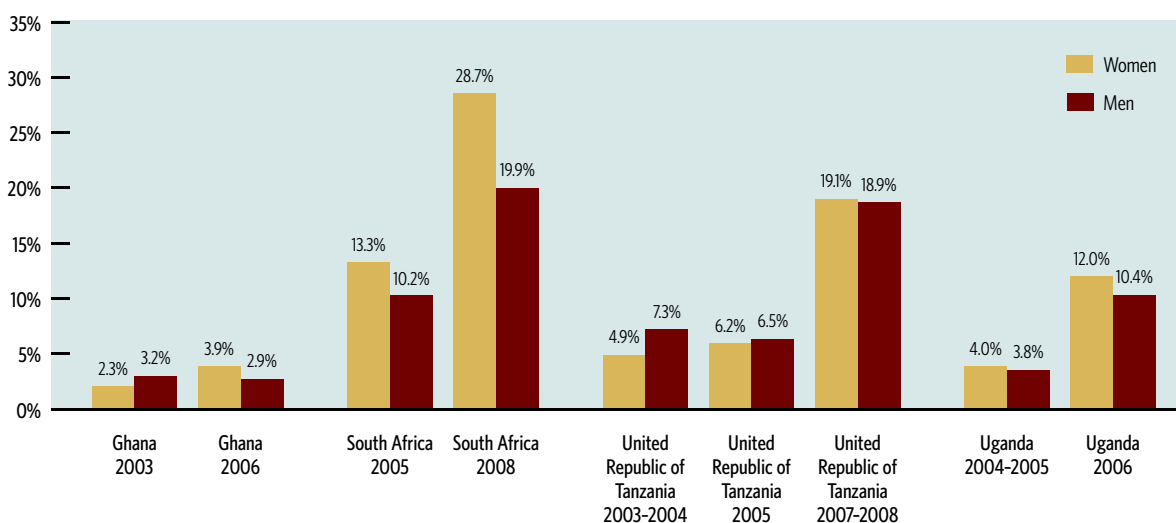
The coverage of HIV testing and counselling can be examined more closely by reviewing data from population-based surveys. Countries conduct these surveys every few years, and the results can help to assess trends to in a country over time. However, establishing clear regional or global time trends in scaling up HIV testing and counselling across

countries as a whole is difficult, because these surveys are not comparable across countries and are not conducted according to a regular schedule. Further, the data may not adequately reflect rapid changes that may take place over a short period of time. Nevertheless, available data can be used to assess the following indicators of progress:

- in the countries that have conducted more than one survey, progress can be inferred from successive surveys by comparing the percentage of survey respondents who report having received an HIV test and the test results in the 12 months preceding the survey;
- although global or regional trends cannot be inferred, median values of testing rates from surveys conducted in different countries in successive time periods can be examined for uni-directional changes. This includes changes in the percentage of survey respondents who report ever having received an HIV test and the test results prior to the survey, as well as the percentage of those having received an HIV test in the 12 months preceding the survey, among the general population and among people living with HIV.

Six countries in sub-Saharan Africa have conducted repeated population-based surveys in the past 10 years. As expected, the data from these surveys show that more people are being tested in recent years (Fig. 2.4). For instance, in the United Republic of Tanzania, less than 7% of women and men had reported receiving an HIV test and test results in the 12 months before the survey in 2005, increasing to about 19% among both sexes in the survey in 2007-2008. In Uganda, the corresponding rates increased from about

**Fig. 2.4. Percentage of women and men receiving an HIV test and test results in the 12 months preceding the survey in countries with repeat population surveys, 2003-2008**



Source: Demographic and Health Surveys (30).

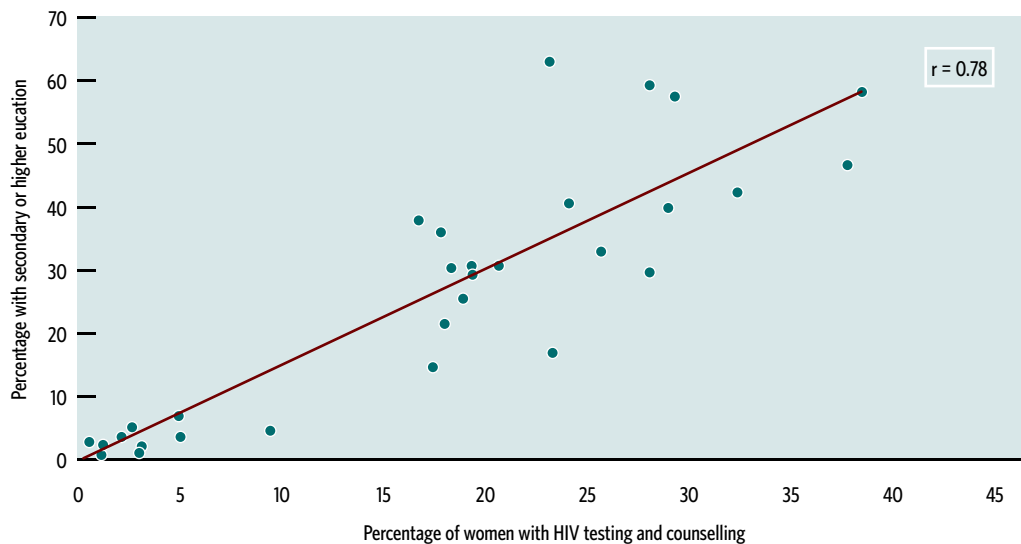
**Box 2.6. Socioeconomic determinants of HIV testing and counselling: results from the Global Fund Five-Year Evaluation**

Since it was established in 2002, the Global Fund to Fight AIDS, Tuberculosis and Malaria has become a major source of funding for the response to the three diseases, with more than US\$ 15 billion committed to nearly 600 programmes in 140 countries worldwide (29). In 2006, the Global Fund initiated a comprehensive evaluation of its first five years of operation in three study areas, including the health impact of collective investments on HIV, TB and malaria (2). Eighteen countries participated in the study, and new data were collected for eight countries (Burkina Faso, Cambodia, Ethiopia, Haiti, Malawi, Peru, United Republic of Tanzania and Zambia) using a comprehensive assessment at the individual, household and facility levels in a selected number of districts. The districts were chosen through purposive sampling to cover each major region in the country, with the number of districts varying between 7 and 15 per country.<sup>1</sup> Data were collected in the first half of 2008 for most countries.

These data describe in detail the expansion of HIV testing and counselling. A comparison of the proportion of health facilities with HIV testing and counselling services in four countries shows that the availability in rural districts varies across countries and that, overall, the median density of HIV testing and counselling facilities per 100 000 population was higher in urban districts than in rural districts.

Analysis of the data collected through household surveys in Burkina Faso, Ethiopia, Haiti and Zambia shows that, despite the increase in the number of facilities providing HIV testing and counselling in these countries, socioeconomic factors continue to represent differentials in access: positive associations are documented between service utilization and education level, residence and household wealth. Among surveyed women aged 15-49 years who gave birth in the two preceding years, those with secondary education were most likely to have been counselled, have been offered and accepted an HIV test and have received the results, followed by women with primary education and no education (Fig. 2.3). The results were similar for HIV testing and counselling among people aged 15-24 years. The data also show that women from higher wealth quintiles were more likely to receive HIV testing and counselling and the test results in all countries except Zambia, where the disparities between wealth groups were smaller.

**Fig. 2.3. Percentage of women with HIV testing and counselling and percentage of women with secondary or higher education, district comprehensive assessment districts in Burkina Faso, Haiti and Zambia, 2008**



Source: Global Fund five-year evaluation, study area 3: the impact of collective efforts on the reduction of the disease burden of AIDS, tuberculosis and malaria. Final report (2).

<sup>1</sup> Health facilities were surveyed in each selected district. In most countries, a census of all public and private facilities was conducted in the selected districts (555 facilities in 13 districts in Burkina Faso; 207 facilities in 7 operational districts in Cambodia; 210 facilities in 9 departments in Haiti; 358 facilities in 6 major urban areas in Peru; and 338 facilities in 9 districts in Zambia). In Ethiopia, a purposeful sample of hospitals and 4 nearby health centres was surveyed in each of 11 regions with a total of 158 facilities; and in Malawi a purposeful sample of 113 facilities was surveyed in 9 districts. The results from Ethiopia and Malawi are therefore not representative of the district or the pooled districts and should be interpreted with caution. Data from the United Republic of Tanzania were not available at the time this report was written.

4% among both sexes in a survey in 2004–2005 to 12% among women and 10% among men in a survey in 2006.

Nine countries, seven of which were in sub-Saharan Africa, countries conducted population-based surveys during 2007 and 2008 and provided information on HIV testing rates, (Table 2.4). Together these countries account for 32% of the people living with HIV globally and 45% of those in sub-Saharan Africa. Among these countries, a median of 37% of female and 21% of male respondents aged 15–49 years had ever received an HIV test and the test results before the survey. Among the seven countries in sub-Saharan Africa, the median percentages were 30% among women and 17% among men. Data from these countries (excluding Kenya, for which this information was not available) also show that a median of 19% of women and 10% of men reported having received an HIV test and the test result in the 12 months preceding the survey.

A comparison with data from 22 countries (including 16 in sub-Saharan Africa) presenting such information from population-based surveys conducted in 2005 and 2006 suggests positive uni-directional changes in testing coverage over time.<sup>1</sup> In surveys conducted in 2005 and 2006, a median of about 10% of women and men report having ever

<sup>1</sup> The 21 countries are: Benin (2006), Cambodia (2005), Cape Verde (2005), Central African Republic (2006), Congo (2005), Côte d'Ivoire (2005), Ethiopia (2005), Ghana (2006), Guinea (2005), Guyana (2005), Haiti (2005), India (2005–2006), Mali (2006), Namibia (2006), Niger (2006), Republic of Moldova (2005), Rwanda (2005), Senegal (2005), South Africa (2005), Uganda (2006), Viet Nam (2005 and Zimbabwe (2005–2006) (30,32).

**Table 2.4. Percentages of women and men 15–49 years old who were tested for HIV in the past 12 months preceding the survey; and who were ever tested for HIV and received the test results, population-based surveys, 2007–2008**

| Country                          | Year of survey | Percentage of people tested who had received an HIV test and the test results in the past 12 months |      | Percentage of people who had ever received an HIV test and the test results |      |
|----------------------------------|----------------|---|------|---|------|
|                                  |                | Women   | Men  | Women   | Men  |
| Democratic Republic of the Congo | 2007           | 4.1   | 3.8  | 8.6   | 9.2  |
| Dominican Republic               | 2007           | 20.5  | 18.6 | 61.8  | 40.4 |
| Kenya                            | 2007           |   |      | 43.0  | 25.0 |
| Liberia                          | 2007           | 1.6   | 2.3  | 3.2   | 4.9  |
| South Africa                     | 2008           | 28.7  | 19.9 | 56.7  | 43.0 |
| Swaziland                        | 2007           | 21.9  | 8.9  | 35.8  | 17.1 |
| Ukraine                          | 2007           | 12.3  | 7.2  | 45.4  | 21.4 |
| United Republic of Tanzania      | 2007–2008      | 19.1  | 18.9 | 37.2  | 26.5 |
| Zambia                           | 2007           | 18.5  | 11.7 | 35.3  | 19.8 |

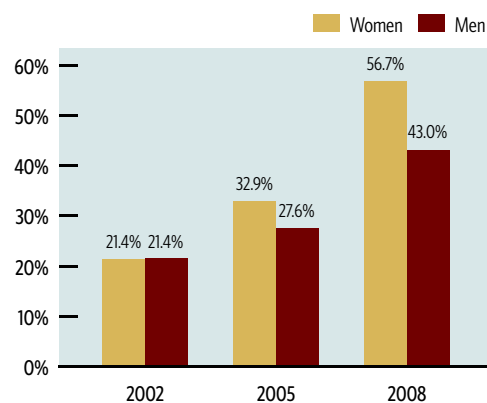
Sources: Demographic and Health Surveys (30); Shisana et al. (31–33); Kenya AIDS Indicator Survey 2007: preliminary report (34).

## Box 2.7. Scaling up HIV testing and counselling in South Africa

From June 2008 to March 2009, South Africa conducted the third in a series of national population-based surveys to assess HIV prevalence, incidence and HIV-related knowledge and behaviour (31). A comparison of data from this survey with data from the two previous surveys conducted in 2005 (32) and 2002 (33) shows a very sizeable increase in the proportion of respondents reporting access to HIV testing services in all provinces. Only 20% of respondents aged 15 years and older had ever received an HIV test in 2002, increasing to about 50% of respondents in the recent survey in 2008.

Progress is evident among both sexes, although more marked among women. In 2002, an equal proportion of female and male respondents (21%) reported ever having received an HIV test. In 2005, 33% of women and 28% of men had ever had an HIV test, increasing further to 57% and 43%, respectively, by 2008 (Fig. 2.5). Between 2005 and 2008, the percentage of women and men who reported having received an HIV test and the test results in the 12 months preceding the survey increased nearly two-fold from 13% to 29% among women and from 10% to 20% among men.

**Fig. 2.5. Percentage of women and men (≥15 years) who had ever received an HIV test and test results, South Africa, 2002, 2005 and 2008**



Source: Shisana et al. (31–33).

In addition, the data show that HIV testing is increasing among high-risk population groups. In 2008, about 14% of recreational drug users were aware of their HIV status in 2005 and 23% in 2008. Data among men who have sex with men were only available for 2008 and show testing coverage of 27% of those surveyed.

received an HIV test and the test results; and a median of 4% of women and 5% of men report having received it in the 12 months preceding the surveys.

Although median percentages provide a midpoint statistic, individual countries vary widely in testing rates. In the surveys conducted in 2007 and 2008, less than 10% of women and men reported ever having received an HIV test in the Democratic Republic of the Congo versus more than 50% of women and more than 40% of men in the Dominican Republic and in South Africa.

The data also suggest that, on the whole, more women are being tested than men. In all surveys conducted in 2007 and 2008, except for the Democratic Republic of the Congo and Liberia, the proportion of women who report having ever been tested for HIV was consistently higher than the proportion of men, likely reflecting initiatives to propose HIV tests in the course of prenatal care.

Population-based surveys also provide information on the proportion of people living with HIV who had ever been tested and received results before the survey. Although these data provide some indication of knowledge of HIV status among people living with HIV, they should be interpreted with caution. Among those who report having received a test and its result before the survey,

some may have received that test long before the survey was conducted and may have been infected since; thus, they may inaccurately report themselves as “knowing” that they are negative.<sup>1</sup> Thus, the above percentages of people living with HIV who report having received an HIV test and the test result should be considered as providing an upper limit estimate of how many people have correct knowledge regarding their HIV-positive status.

In 2008, based on 12 population surveys conducted between 2005 and 2007, WHO/UNICEF/UNAIDS reported that a median of 20% of people living with HIV had received an HIV test and the test result prior to the survey (35). Data from additional, more recent surveys became available in 2009. Although the results of country surveys conducted in 2007 and 2008 cannot be directly compared with those conducted in 2005 and 2006, the results can be examined for a change in the median percentage of people living with HIV who had learned their HIV status in the successive time periods. The median percentage of respondents 15–49 years old living with HIV who reported having ever been tested and receiving results in 12 countries with surveys in 2005–2006 was 15%. In 2007–2008, the median for seven countries was 39% (Table 2.5). In the United Republic of Tanzania, where two consecutive surveys were conducted, the combined percentage of respondents living with HIV who reported having ever received an HIV test and test result before the survey increased from 21% in 2003–2004 to 39% in 2007–2008.

In conclusion, 2008 showed evidence of country efforts to scale up HIV testing and counselling services and to improve programme monitoring and reporting systems to assess progress. The data clearly show that more people are gaining knowledge of their HIV status but with wide differences in access across countries. The analysis also provides evidence of differences among population groups – more women have access to HIV testing and counselling services than men – but access for high-risk population groups remains limited.

**Table 2.5. Percentages of women and men 15–49 years old living with HIV who were ever tested for HIV and received the test results, population-based surveys, 2007–2008**

| Country                          | Year of survey | Percentage of people living with HIV who had ever received an HIV test and test results |                     |            |
|----------------------------------|----------------|---|---------------------|------------|
|                                  |                | Women   | Men                 | Both sexes |
| Democratic Republic of the Congo | 2007           | 8.7   | (14.5) <sup>a</sup> | 10.7       |
| Dominican Republic               | 2007           | 72.6  | 49.1                | 60.7       |
| Kenya                            | 2007           |   |                     | 43.0       |
| Liberia                          | 2007           | 8.0   | 11.5                | 9.2        |
| Swaziland                        | 2007           | 44.0  | 28.8                | 38.7       |
| United Republic of Tanzania      | 2007-2008      | 43.7  | 30.8                | 39.0       |
| Zambia                           | 2007           | 45.4  | 28.3                | 38.4       |

<sup>a</sup> Denominator based on 25–49 cases.

Sources: Demographic and Health Surveys (30); Kenya AIDS Indicator Survey 2007: preliminary report (34).

<sup>1</sup> For instance, the Kenya AIDS Indicator Survey of 2007 (34), which tested survey participants for HIV, shows that, among the 43% who reported ever having received an HIV test, only 16% correctly reported their HIV status; 26% self-reported being uninfected but tested positive during the survey.

## References

1. Global Price Reporting Mechanism [web site]. Geneva, World Health Organization, 2009 (<http://www.who.int/hiv/amds/gprm/en/index.html>, accessed 1 September 2009).
2. *Global Fund five-year evaluation, study area 3: the impact of collective efforts on the reduction of the disease burden of AIDS, tuberculosis and malaria. Final report.* Calverton, MD, MACRO International Inc., 2009.
3. WHO and UNAIDS. *Guidance on provider-initiated HIV testing and counselling in health facilities.* Geneva, World Health Organization, 2007 (<http://www.who.int/hiv/pub/vct/pitc2007/en>, accessed 1 September 2009).
4. Kamoto K et al. HIV testing and antiretroviral therapy in government and mission hospitals in Malawi: 2002–2007. *Malawi Medical Journal*, 2008, 20:4–6.
5. Nakanjako D et al. Acceptance of routine testing for HIV among adult patients and the medical emergency unit at a national referral hospital in Kampala, Uganda. *AIDS and Behavior*, 2007, 11:753–758.
6. Wanyenze RK et al. Acceptability of routine HIV counselling and testing, and HIV seroprevalence in Ugandan hospitals. *Bulletin of the World Health Organization*, 2008, 86:302–309.
7. Chakaya JM et al. National scale-up of HIV testing and provision of HIV care to tuberculosis patients in Kenya. *International Journal of Tuberculosis and Lung Diseases*, 2008, 12:424–429.
8. Gwokyalya V et al. Integration of routine HIV testing with TB diagnosis among medical inpatients in Mulago Hospital, Uganda. *International Journal of Infectious Diseases*, 2008, 12(Suppl 1):e487.
9. Creek TL et al. Successful introduction of routine opt-out HIV testing in antenatal care in Botswana. *Journal of Acquired Immune Deficiency Syndromes*, 2007, 45:102–107.
10. Chersich MF et al. HIV testing and counselling for women attending child health clinics: an opportunity for entry to prevent mother-to-child transmission and HIV treatment. *International Journal of STD and AIDS*, 2008, 19:42–46.
11. Mugore L et al. An assessment of the understanding of the offer of routine HIV testing among pregnant women in rural Zimbabwe. *AIDS Care*, 2008, 20:660–666.
12. Perez F et al. Acceptability of routine HIV testing (“opt-out”) in antenatal services in two rural districts of Zimbabwe. *Journal of Acquired Immune Deficiency Syndromes*, 2006, 41:514–520.
13. Steen TW et al. Two and a half years of routine HIV testing in Botswana. *Journal of Acquired Immune Deficiency Syndromes*, 2007, 44:484–488.
14. Corbett EL et al. HIV incidence during a cluster-randomized trial of two strategies providing voluntary counseling and testing at the workplace, Zimbabwe. *AIDS*, 2007, 21:483–489.
15. Feeley FG et al. A successful workplace program for voluntary counseling and testing and treatment of HIV/AIDS at Heineken, Rwanda. *International Journal of Occupational and Environmental Health*, 2007, 13:99–106.
16. HELLERINGER S et al. Increasing uptake of HIV testing and counseling among the poorest in sub-Saharan countries through home-based service provision. *Journal of Acquired Immune Deficiency Syndromes*, 2009, 51:185–193.
17. Negin J et al. Feasibility, acceptability and cost of home-based HIV testing in rural Kenya. *Tropical Medicine and International Health*, 2009, 14:849–855.
18. Dandona L et al. Changing cost of HIV interventions in the context of scaling-up in India. *AIDS*, 2008, 22(suppl 1):S43–S49.
19. Gómez M. [A comparison of three screening strategies for prevention of perinatal HIV infection in Colombia: a decision analysis model.] *Revista Panamericana de Salud Pública*, 2008, 24:256–264.
20. Nateniyom S et al. Provider-initiated diagnostic HIV counselling and testing in tuberculosis clinics in Thailand. *International Journal of Tuberculosis and Lung Diseases*, 2008, 12:955–961.
21. Pai NP et al. Impact of round-the-clock, rapid oral fluid HIV testing of women in labor in rural India. *PLoS Medicine*, 2008, 5:e92.
22. Adler A, Mounier-Jack S, Coker RJ. Late diagnosis of HIV in Europe: definitional and public health challenges. *AIDS Care*, 2009 21:284–293.
23. Wolbers M et al. Delayed diagnosis of HIV infection and late initiation of antiretroviral therapy in the Swiss HIV Cohort Study. *HIV Medicine*, 2009, 9:397–405.
24. Delpierre C et al. Correlates of late HIV diagnosis: implications for testing policy. *International Journal of STD and AIDS*, 2009, 18:312–317.
25. United Nations Population Division. World population prospects: the 2008 revision, population database [online database]. New York, United Nations, 2008 (<http://esa.un.org/unpp/index.asp>, accessed 1 September 2009).
26. NIMH Project Accept/HPTN 043: a Phase III randomized controlled trial of community mobilization, mobile testing, same-day results and post-test support for HIV in sub-Saharan Africa and Thailand. Arlington, VA, HIV Prevention Trials Network, 2009 ([http://www.hptn.org/research\\_studies/hptn043.asp](http://www.hptn.org/research_studies/hptn043.asp), accessed 1 September 2009).

27. Khumalo-Sakutukwa G et al. Project Accept (HPTN 043): a community-based intervention to reduce HIV incidence in populations at risk for HIV in sub-Saharan Africa and Thailand. *Journal of Acquired Immune Deficiency Syndromes*, 2008, 49:422-431.
28. Obwiri WK et al. "Moonlight" VCT and reproductive health services - innovation in reaching young people (15-24 years) involved in sex work and their sexual networks: experiences of the Kericho Youth Center in the Southern Rift Valley of Kenya. *The 2009 HIV/AIDS Implementers' Meeting, 10-14 June 2009, Windhoek, Namibia*.
29. *Scaling up for impact. Results report*. Geneva, Global Fund to Fight AIDS, Tuberculosis and Malaria, 2009.
30. Demographic and Health Surveys [web site]. Calverton, MD, MEASURE DHS, ICF MACRO, 2009 (<http://www.measuredhs.com>, accessed 1 September 2009).
31. Shisana O et al. *South African national HIV prevalence, incidence, behaviour and communication survey 2008: a turning tide among teenagers?* Cape Town, HSRC Press, 2009.
32. Shisana O et al. *South African national HIV prevalence, HIV incidence, behaviour and communication survey, 2005*. Cape Town, HSRC Press, 2005.
33. Shisana O, Simbayi L. Nelson Mandela/HSRC study of HIV/AIDS: *South African national HIV prevalence, behavioural risks and mass media household survey 2002*. Cape Town, HSRC Press, 2002.
34. *Kenya AIDS Indicator Survey 2007: preliminary report*. Nairobi, National AIDS and STI Control Programme, Ministry of Health, 2008.
35. WHO, UNICEF and UNAIDS. *Towards universal access: scaling up priority HIV/AIDS interventions in the health sector. Progress report 2008*. Geneva, World Health Organization, 2008 (<http://www.who.int/hiv/pub/2008progressreport/en/index.html>, accessed 1 September 2009).