HIV Surveillance in the WHO Eastern Mediterranean Region Regional update 2012



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Executive Summary

The aim of this report is to provide an update on the assessment of the national HIV surveillance systems in the countries of the Eastern Mediterranean Region of WHO. The report presents the results of surveillance activities carried out in the countries in 2007–2012, the plans for the development of HIV surveillance in 2013–2017, and key strengths and weaknesses of, and obstacles to, HIV surveillance implementation.

A combination of methods were used to collect information: a revised regional case reporting form for HIV and sexually transmitted infections (STI) supplemented by a questionnaire, which was sent to all national AIDS programme managers in January 2013 and telephone interviews with the national AIDS programme managers after they returned a completed questionnaire. The revised regional case reporting form was used for the first time and pilot tested in connection with this survey¹. Similar surveys were carried out in previous years (2009, 2010, 2011).

National AIDS programmes of the following 16 countries submitted the completed regional case reporting forms and supplemental questionnaires by May 2012: Afghanistan, Djibouti, Islamic Republic of Iran, Jordan, Kuwait, Lebanon, Morocco, Oman, occupied Palestinian territory, Saudi Arabia, Sudan, South Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates and Yemen. Interviews by phone were done with the national AIDS programme managers or other surveillance staff in the following 12 countries: Afghanistan, Islamic Republic of Iran, Jordan, Lebanon, Morocco, Oman, Saudi Arabia, Sudan, South Sudan, Syrian Arab Republic, Tunisia and Yemen. If combined with information collected in previous years through this annual survey, knowledge about the functioning and results of HIV surveillance systems are now available for all the countries in the Region.

HIV epidemics in the countries of the Eastern Mediterranean Region are concentrated in the groups at the highest risk of HIV – injecting drug users, men who have sex with men and female sex workers. They are included in surveillance in 14 countries². The highest documented level of HIV prevalence among high-risk groups was found among injecting drug users in Libya (87% in Tripoli, 2011), Pakistan (3.3–52.5% per city, 2011), Islamic Republic of Iran (15.0%, 2011) and Afghanistan (0.3–13.3% per city, 2012). The highest HIV prevalence in men who have sex with men was measured in Tunisia (0–16.0% in 2011), followed by Egypt (6.9% in Alexandria) and Sudan (0-6.3% per city, 2011). In female sex workers, the highest measured HIV prevalence was

In previous years countries used to submit reports with aggregate information on HIV and STI case notifications as well as data from HIV and STI screening of various populations on a quarterly basis. However, except for a few countries, compliance was low. Following discussions with national AIDS programme managers from several countries in 2012, it was decided to simplify the regional reporting form and to move from quarterly to annual reports

The countries that submitted HIV prevalence data in high-risk groups are: Afghanistan, Djibouti, Egypt, Islamic Republic of Iran, Jordan, Lebanon, Morocco, Pakistan, occupied Palestinian territory, Somalia, Sudan, Tunisia, Yemen.

in Libya (16.0% in Tripoli in 2011 – but the survey included only 69 women), Djibouti (15.4% in 2009), followed by Sudan (0-7.7% per city, 2011).

The following countries have not implemented integrated bio-behavioural surveillance surveys (IBBSS) in any of the high-risk groups: Bahrain, Djibouti, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, South Sudan, Syrian Arab Republic and United Arab Emirates.

In South Sudan, Djibouti and some parts of Somalia HIV prevalence in pregnant women is higher than 1%, suggesting generalized HIV epidemics. The highest HIV prevalence among pregnant women was found in South Sudan (3.0% in 2009), followed by Djibouti (1.6% in 2010), although prevalence in Djibouti decreased from 2007 to 2009. The highest measured HIV prevalence in pregnant women in Somalia was in Somaliland (1.7%, 2010) while the most recent data collected in 2011 suggest a prevalence of 0.3% in South Central Zone.

In tuberculosis patients, HIV prevalence is the highest in surveys in South Sudan (14.7%, 2010), followed by Djibouti (11.3%, 2010) and Puntland and Somaliland in Somalia (8.2%, 2010). In the Islamic Republic of Iran, HIV prevalence obtained from provider-initiated HIV testing in 2011 (12.7%) is considerably different from the data obtained through a surveillance survey in 2010 (3.8%). Similarly, HIV prevalence calculated from HIV testing data in Sudan varies from 6.8% in 2010 (n = 3636) to 1.7% in 2011 (n = 3500).

Eight countries³ have HIV prevalence data among patients with STI, and it was the highest in Hargeisa, Somalia (7.0%, 2010). In five other countries HIV prevalence is around zero, suggesting that this surveillance component is not functioning effectively.

In 2011 and 2012 HIV prevalence measured in surveys conducted among prisoners ranged from 0.3% in Oman to 1.6% in the Islamic Republic of Iran.

HIV case reporting exists in all the countries participating in this survey with the exception of South Sudan. For 2011, 14 countries reported 4273 HIV cases, and of these 67.4% were men.

With the exception of Morocco and Somalia, the male to female ratio in HIV cases reported was considerable in 2011, ranging from 1.6:1 in Tunisia to 5.3:1 in Kuwait. The ratio was even higher in Lebanon but for slightly more than 50% of cases reported in 2011 the information on sex was missing. Such high male-to-female ratio could be due to a) substantial HIV transmission occurring among men who have sex with men or within male injecting drug users' networks; b) a higher proportion of female than male HIV cases remaining undetected and/or not reported; and c) men being tested more frequently than women, for example migrant men for the purposes of obtaining a visa for work in another country.

Since the beginning of reporting until end of 2011, 48 966 HIV cases were reported from 14 countries⁴ and of these 79.4% were men.

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The countries that submitted HIV prevalence data in STI patients are: Islamic Republic of Iran, Jordan, Morocco, Oman, occupied Palestinian territory, Saudi Arabia, Somalia, Tunisia.

⁴ The countries that submitted HIV case reporting data in 2011 are: Afghanistan, Islamic Republic of Iran, Jordan, Kuwait, Lebanon, Morocco, Oman, occupied Palestinian territory, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates.

In 2011, only six countries⁵ were able to report data on CD4 counts at the time of HIV diagnosis, and in four of these data were considerably incomplete. In Jordan, Morocco, Oman, occupied Palestinian territories and Tunisia more than 50% of patients had CD4 counts <350 cells/mm³ at the time of diagnosis, which is to be expected considering the rather low availability of voluntary HIV testing services.

Overall, 10 countries⁶ were able to report cases of AIDS deaths in 2011. These 10 countries reported a total of 568 AIDS deaths. Nine countries reported the cumulative number of AIDS deaths, which was a total of 7274 AIDS deaths since the beginning of reporting. Of these, 73.6% were reported from the Islamic Republic of Iran, which is due to better functioning AIDS deaths reporting compared to other countries.

The report concludes that action should be taken in order to improve the understanding of the HIV epidemiology in countries and to improve the capacity of surveillance systems including the following.

- Baseline integrated bio-behavioural surveillance surveys in injecting drug users, female sex workers and men who have sex with men should be carried out in Bahrain, Djibouti, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, South Sudan, Syrian Arab Republic and United Arab Emirates.
- More efforts should be addressed to expanding the provider-initiated routine offer of HIV testing to pregnant women and tuberculosis and patients with STI using an opt-out approach (i.e. person is informed that HIV test is recommended as part of routine care and will be done unless s/he objects). This would enable countries to discontinue the testing of people without their knowledge, which is still present in some countries. Data obtained through this approach would also provide a valuable surveillance component.
- In order to address technical capacity gaps WHO and partner agencies should support country and regional-level training in the following subjects: surveillance among high-risk groups; population size estimates; HIV data interpretation and use; and drug resistance prevention and assessment.

The countries that submitted data on the number of AIDS deaths are: Islamic Republic of Iran, Jordan, Kuwait, occupied Palestinian territory, Oman, Saudi Arabia, Somalia, Syrian Arab Republic, Tunisia, United Arab Emirates.

The countries that submitted CD4 data in newly reported HIV cases are: Jordan, Morocco, Oman, occupied Palestinian territory, Syrian Arab Republic, Tunisia.

1. Background

The aim of this report is to present an update of the assessment of development of the national HIV surveillance systems in the Eastern Mediterranean Region of WHO in 2012 and the results of surveillance activities. The report also includes the data collected in the previous assessments conducted in 2009, 2010 and 2011.

The following countries were included in the assessment: Afghanistan, Bahrain, Djibouti, Egypt, Islamic Republic of Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, occupied Palestinian territories, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, South Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates and Yemen.

In 2011 the total number of people living with HIV in the Region was $560\,000$ ($415\,000-800\,000$), compared to less than $310\,000$ ($190\,000-400\,000$) in $2001\,(1)$. In 2011, an estimated $82\,000$ ($54\,000-144\,000$) new HIV infections occurred while $38\,000$ ($28\,000-49\,000$) people died of AIDS.

A review of the development and results of the national HIV surveillance systems of the countries of the Region and the assessment of the quality of HIV surveillance systems in the period 2007–2011 was published in 2013 (2). It found that in four countries surveillance systems enable assessment of epidemic trends in the same populations and locations over time, such as in pregnant women (Morocco, Islamic Republic of Iran), injecting drug users (Islamic Republic of Iran, Pakistan), female sex workers (Djibouti, Morocco) and male sex workers (Pakistan). It also showed that the performance of HIV surveillance systems in several countries has improved in recent years but the extent of HIV epidemics in the populations most at risk of HIV is still largely unknown in 10 countries.

2. Methods and limitations

2.1 Methods

The methods that were used to collect information included:

- a revised regional case reporting form for HIV and sexually transmitted infections (STI) supplemented by a questionnaire, which was sent to all national AIDS programme managers in January 2013;
- telephone interviews with the national AIDS programme managers after they returned a completed questionnaire.

The case reporting form was used to collect the following data:

- reported number of HIV cases by sex and age groups (0–14; 15–24; >25 years) and by sex and mode of transmission;
- reported number of cases of AIDS deaths by age groups (0–14; >15 years) and sex;
- reported number of cases of STI diagnosed syndromically and etiologically by sex and age groups (0–24; >25 years);

- number of persons tested for HIV and positive for HIV by various population groups that are tested in a country;
- number of persons tested for syphilis, hepatitis B and hepatitis C and positive for these infections by population groups (blood donors, pregnant women, STI patients, injecting drug users (IDU), men who have sex with men (MSM), female sex workers (FSW)).

The questionnaire consisted of three parts and sought the following data.

Section A

- Proportion of all adult and adolescent HIV cases newly diagnosed in 2011 that had a CD4 cell count reported and the proportion of all adult and adolescent HIV cases that had CD4 counts <350 cells/mm3 blood at the first HIV diagnosis.
- Also, whether mode of transmission analysis and HIV data triangulation were carried out and whether the national AIDS programme has a protocol for HIV case reporting.

Section B

- Facility-based HIV surveys implemented among patients with tuberculosis or STI patients, pregnant women and prisoners in 2011 and 2012: HIV prevalence, number of sites where surveys were carried out, type of site (urban, rural, both), number of regions where surveys were conducted out of the total number of regions in a country (so that coverage of the surveillance activities can be assessed), sample size in surveys and type of HIV testing (linked or unlinked anonymous); also, syphilis prevalence data among pregnant women in 2011 and 2012.
- Integrated bio-behavioural surveillance surveys (IBBSS) implemented among key
 populations at higher risk in 2011 and 2012: HIV prevalence, type of sampling, number of
 sites were surveys where carried out, type of site (urban, rural or both), number of regions
 where surveys were conducted out of the total number of regions in a country (so that
 coverage of the surveillance activities can be assessed), sample size in surveys.
- Estimates of the size of key populations at higher risk done in 2011 and 2012.
- Plans for implementation of HIV facility and community-based surveys and population size estimates during 2013–2017.
- Availability of data on HIV drug resistance surveillance and prevention, including surveys of transmitted and acquired HIV drug resistance and early warning indicators (EWIs).

Section C

The main strengths, weaknesses of and obstacles to implementation of HIV surveillance in 2012 and areas of HIV surveillance where the national AIDS programme managers see immediate needs for capacity development are summarized in this section. The points under "strengths", "weaknesses" and "obstacles" outlined in the report are exactly the points raised by respondents of the questionnaire.

Interviews were carried out over phone to seek clarifications on certain responses and data where these were not provided.

2.2 Limitations

The review uses information provided by the national AIDS programmes, which might have missed data sources that are collected by other agencies. The coverage and completeness of HIV case reporting vary among the countries, depending on the existence and accessibility of HIV testing services and reporting practices. The key biases in HIV case reporting systems relate to under-reporting of cases and misreporting a probable mode of transmission. The completeness of data on the number of AIDS deaths also depends on reporting practices. In IBBS some important parameters have not been assessed, such as refusal rates, availability of behavioural indicators and the process of data collection that could have influenced the quality of data.

Data were not collected on HIV incidence-based surveillance since it is not available in the Region.

3. Results 1: short narrative reports for each country

The findings are presented as narrative reports for each country, and in the regional overview.

National AIDS programmes of the following 16 countries submitted the completed questionnaires: Afghanistan, Djibouti, Islamic Republic of Iran, Iraq, Jordan, Kuwait, Lebanon, Morocco, Oman, Saudi Arabia, Sudan, South Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates, and Yemen. In the previous years, the completed questionnaires were submitted by all other countries, so some information about the functioning and results of HIV surveillance systems is now available for all the countries in the Region.

Interviews over phone were carried out with the national AIDS programme managers or other surveillance staff in the following 10 countries: Afghanistan, Islamic Republic of Iran, Jordan, Lebanon, Morocco, Oman, Sudan, Syrian Arab Republic, Tunisia and Yemen.

Country summaries in this report include all 23 countries of the Region (2012)⁷.

3.1 Afghanistan

In Afghanistan HIV surveillance is not integrated within the communicable disease surveillance system.

HIV and STI case reporting

The national AIDS programme does not have a protocol for HIV case reporting. Since the beginning of HIV case reporting until the end of 2011, a cumulative number of 1367 HIV cases were reported. In 2011, 117 HIV cases were reported, and of these 77.6% were in men. Information on the mode of transmission is available for 107 cases: injecting drug use was

⁷ South Sudan became a Member of the African Region in 2013.

reported in 44.4% of cases, followed by "undetermined" mode of transmission (37.6%). Only one AIDS death was reported in 2011. There is no surveillance of CD4 counts.

In 2011, 3087 cases of STIs (diagnosed syndromically) were reported in men and 4287 in women.

HIV testing data

There is no routine offer of an HIV test to pregnant women, patients with tuberculosis and STI patients. However, there is a policy that all tuberculosis patients with high risk behaviours are tested for HIV, but as tests are not available at tuberculosis sites, patients are referred to voluntary HIV testing and counselling (VCT) centres. Similar policies exist for STI patients: only those with higher risks for HIV are offered HIV testing services. It is not known what the criteria or algorithms are for testing patients selectively.

HIV test results are available for tuberculosis patients for the year 2009: of 1175 patients screened, 5 tested positive for HIV. In 2011, no case was found in tested STI patients (n = 192) and tuberculosis patients (n = 1834). In 1208 tested prisoners HIV prevalence was 0.2%.

In 2011, following prevalence of infections was found in blood donors: 0.02%, HIV; 0.6%, syphilis; 3.9%, HBV; 1.1%, HCV. The national AIDS programme reported high prevalence of these infections in men who have sex with men tested: 18.8%, syphilis (n = 499); 11.6%, HBV; 8.3%, HCV. In injecting drug users, prevalence was the following: 2.5%, syphilis (n = 4262); 4.7%, HBV; 15.7%, HCV.

HIV prevalence surveys

In terms of the facility-based HIV surveillance, there is a plan to carry out a survey in pregnant women in 2013.

The results of the surveys conducted in key populations at higher risk of HIV in 2012 are described in Tables 3.1–3.5. The sampling methods were respondent-driven sampling (RDS) in female sex workers, injecting drug users and men who have sex with men and systematic random sampling in prisoners and road transport workers. In injecting drug users, HIV prevalence was the highest in Herat (13.3%), while it was less than 5% in other cities. Herat also had the highest prevalence of HCV of 70.0%. In female sex workers, road transport workers, men who have sex with men and prisoners HIV prevalence was below 1% at all sites.

It is planned to conduct IBBSS in 2015 in female sex workers, men who have sex with men and injecting drug users.

Table 3.1 Prevalence of sexually and parenterally transmitted infections in injecting drug users, 2012, Afghanistan

Location	HIV	Syphilis	HBV	HCV	Sample size
Kabul	2.4	6.2	7.3	27.6	369
Herat	13.3	3.3	4.4	70.0	185
Mazar	0.3	6.9	3.2	18.8	254
Jalalabad	1.0	3.8	8.3	9.5	236
Charikar	0.9	4.0	5.4	25.0	117

Table 3.2 Prevalence of sexually and parenterally transmitted infections in female sex workers, 2012, Afghanistan

Location	HIV	Syphilis	HBV	HCV	Sample size
Kabul	0	0	1.0	0	333
Herat	0.9	0.9	1.8	0.6	344
Mazar	0	2.0	3.5	1.7	355

Table 3.3 Prevalence of sexually and parenterally transmitted infections in men who have sex with men, 2012, Afghanistan

Location	HIV	Syphilis	HBV	HCV	Sample size
Kabul	0.4	10.2	1.6	5.3	207

Table 3.4 Prevalence of sexually and parenterally transmitted infections in road transport workers, 2012, Afghanistan

Location	HIV	Syphilis	HBV	HCV	Sample size
Torkham	0	0.3	5.3	1.8	378

Table 3.5 Prevalence of sexually and parenterally transmitted infections in prisoners, 2012, Afghanistan

Location	HIV	Syphilis	HBV	HCV	Sample size
Kabul	0.5	0.8	6.0	4.6	368
Herat	0.8	0.8	4.8	1.4	351

Size estimations

Size estimates of key populations at higher risk are available for 2012, when it was estimated that there were 4934 female sex workers in Kabul and Hirat, 16 719 injecting drug users in Kabul, Hirat, Mazar and Jalal Abad and 1729 men who have sex with men in Kabul. All estimates are done by the multiplier method. The next size estimates of female sex workers, injecting drug users and men who have sex with men are planned for 2015.

Mode of transmission analysis and HIV data triangulation

Mode of transmission analysis and HIV data triangulation have not yet been conducted.

HIV drug resistance monitoring and surveillance

There are no data on HIV drug resistance.

3.2 Bahrain

In Bahrain HIV surveillance is integrated in the national communicable disease surveillance and in the national monitoring and evaluation framework. There is a national HIV surveillance work plan.

HIV and STI case reporting

As reported by national AIDS programme, there is HIV, advanced HIV and AIDS case reporting, and reporting of AIDS deaths. Data on CD4 counts at the time of HIV diagnosis are collected. In 2010, 14 men and 2 women were reported as newly diagnosed with HIV. Heterosexual mode of transmission was reported in 8 male cases, and injecting drug use in 6 cases. AIDS cases were not reported.

In 2010, 13 newly diagnosed HIV cases had CD4 counts reported, and 31% had CD4 <350 cells/mm³ at the time of diagnosis.

HIV testing data

HIV prevalence data are available from groups tested for HIV. In 2009, HIV prevalence in tested tuberculosis patients was 1.1% (n=177) while 0.6% (n=169) in 2010. In pregnant women no HIV cases were found in 2009 (n=2170) and 2010 (n=2394). In 2010, among 192 tested STI patients HIV prevalence was 0.5%; and 3.9% in 181 tested injecting drug users.

HIV prevalence surveys

Bahrain did not conduct facility-based or community-based HIV surveillance surveys.

Size estimations

There are no data on population size estimates. It is planned to carry out size estimates of injecting drug users in 2013.

Mode of transmission analysis and HIV data triangulation

Mode of transmission analysis and data triangulation have not been done, but they might be done in 2014 and 2013, respectively.

HIV drug resistance monitoring and surveillance

There are no data on HIV drug resistance surveillance and prevention.

3.3 Djibouti

HIV surveillance is integrated into the national communicable disease surveillance system, and all HIV surveillance activities are integrated into the national HIV monitoring and evaluation framework.

HIV and STI case reporting

There is a protocol for HIV case reporting. In 2010, 889 HIV cases were reported, and in 203 of these the mode of HIV transmission was reported. AIDS cases were not reported by the

national AIDS programme. There is no reporting of AIDS deaths. No HIV cases were reported for 2011.

In 2009, 95% of newly diagnosed HIV cases have CD4 counts reported, but information on the proportion of cases that have CD4 counts <350 cells/mm³ is not available. For 2010 and 2011, no information on CD4 counts is available.

In 2011, 539 cases of urethral discharge and 120 cases of genital ulcer were reported in men, compared to 10 cases of genital ulcer in women.

HIV testing data

In 2011 HIV prevalence in the groups tested for HIV was as follows: tuberculosis patients, 7.9% (n=1773), pregnant women, 1% (n=9343). It is planned to carry out sentinel HIV surveillance among tuberculosis, STI patients and pregnant women annually until 2017, as well as among female sex workers. A voluntary HIV test is routinely offered to pregnant women, all tuberculosis patients and all STI clinic attendees.

HIV prevalence in tuberculosis patients in 2010 was 11.3% (compared to 7.9% in 2009, 11.8% in 2008 and 13.6% in 2007). Among pregnant women, HIV prevalence in 2009 and 2010 was 1.6% (compared to 2.1% in 2007 and 1.7% in 2008). HIV prevalence in tuberculosis patients tested for HIV as part of routine testing in 2010 is the same as that reported as being from facility-based surveillance.

Among blood donors, HIV prevalence in 2009 was 0.3% (compared to 1.4% in 2007 and 0.6% in 2008). Syphilis prevalence among pregnant women was 0.2% in 2009 and 0.8% in 2007.

HIV prevalence surveys

Surveys among female sex workers are done as facility-based. HIV prevalence in female sex workers in 2009 was 15.4%, compared to 19.7% in 2007 and 20.3% in 2008. No data are available for 2010. It seems that sentinel surveillance among female sex workers is carried out among women who use VCT services.

There were no sentinel surveillance activities in 2011 and 2012.

Community-based surveillance among key populations at higher risk does not exist. There are plans to conduct community-based surveys in female sex workers and injecting drug users in 2013 along with population size estimates.

Size estimations

In 2011, it was estimated that there were 2237 female sex workers, 834 men who have sex with men and 9983 clients of female sex workers in Djibouti Ville.

Mode of transmission analysis and HIV data triangulation

HIV mode of transmission analysis was conducted in 2011 (Table 3.6). The majority of new HIV infections are occurring among low-risk heterosexuals (i.e. couples) and those who have casual heterosexual partners.

Table 3.6 Results of mode of transmission analysis, 2011, Djibouti

Population group	% of new HIV infections
FSW	8.4
Clients of FSW	4.3
Partners of clients of FSW	7.5
MSM	4.8
Female partners of MSM	0.3
Those who have casual heterosexual sex	21.8
Partners of those who have casual heterosexual sex	11.3
Low risk heterosexuals	38.9
Without risk	0
Medical injections	0.6
Blood transfusion	0.4

FSW: female sex workers

MSM: men who have sex with men

HIV drug resistance monitoring and surveillance

There are no data on surveillance of HIV drug resistance.

3.4 Egypt

In Egypt, HIV surveillance is an integral component of the national communicable disease surveillance system, and it is integrated in the national HIV monitoring and evaluation framework. There is a national HIV surveillance work plan.

HIV and STI case reporting

There is HIV, advanced HIV and AIDS case reporting, and reporting of AIDS deaths. HIV and AIDS case reports are compiled in one database. Of 409 newly reported HIV cases in 2010, 79.7% were men. In almost a third of the cases (30.8%) information on the transmission category was missing. In men, most commonly reported categories were heterosexual (27.0%) and injecting drug users (24.5%). No AIDS cases were reported. Data on CD4 counts are available. For 2010 completeness was reported as 100%, and 25% of the patients had CD4 counts <350 cells/mm³ at the time of HIV diagnosis.

HIV testing data

The following data on HIV testing were provided for the year 2008: tuberculosis patients (n = 1830, 4 were HIV positive), STI patients (n = 523, no HIV case was detected), prisoners (n = 923, 2 were HIV positive). In 2009 and 2010, HIV prevalence in tested tuberculosis patients was similar to 2008 (0.08%). HIV prevalence in blood donors ranged from 0.0003% in 2008, 0.008% in 2009 to 0.005% in 2010. In terms of the policies on HIV testing, it is reported that an HIV test is routinely offered to STI and tuberculosis patients and pregnant women.

HIV prevalence surveys

HIV surveys in tuberculosis and STI patients were done in 2009 at the national level, and HIV prevalence was <0.001%. Among prisoners, HIV surveillance is set up at two sites and HIV prevalence was <0.001% in 2009. There were no facility-based surveys done in 2010 and 2011.

HIV prevalence assessment started in 2011 at ANC sites but it has not yet been completed. There are plans to implement HIV surveys in 2013 and 2016 in tuberculosis patients, pregnant women and prisoners.

IBBSS were done in the following groups: injecting drug users using RDS (HIV prevalence was 0.6% in 2006 in Cairo; 6.8% in Cairo and 6.5% in Alexandria in 2010), female sex workers (HIV prevalence was 0.8% in 2006 and 0 in 2010 in Cairo), men who have sex with men using RDS (HIV prevalence was 6.2% in Alexandria in 2006, and in 2010 6.9% in Alexandria and 0 in Luxor) and street children (0.5% in 2010 in Cairo). It is planned to implement IBBSS among female sex workers, injecting drug users, men who have sex with men and street children in 2014.

Size estimations

It is estimated that there are 85 000 injecting drug users and 150 000 men who have sex with men in Greater Cairo. Population size estimates are planned to be done for female sex workers and men who have sex with men in 2013, injecting drug users in 2012 and street children in 2015.

Mode of transmission analysis and HIV data triangulation

Mode of transmission analysis is planned for the first quarter of 2012. HIV data triangulation has not been done.

HIV drug resistance monitoring and surveillance

There are no data on HIV drug resistance surveillance and prevention.

3.5 Islamic Republic of Iran

In the Islamic Republic of Iran the national AIDS programme reports that there is no specific workplan for implementation of a comprehensive national HIV surveillance system. However, there are various protocols including workplans for the implementation of the different components of HIV surveillance.

HIV and STI case reporting

In 2011, 1588 HIV cases were reported and out of these, 78.5% were in men. Injecting drug use was the most common transmission category in men (73.5%), and heterosexual transmission in women (70.7%). Men and women aged 15-24 years contributed to 6.3% and 12.3% in newly reported HIV cases, respectively. In 2011, 394 men and 24 women died of AIDS.

Since the beginning of reporting, 24 651 HIV cases were reported, and among these 90.7% were men. Among all cases reported, injecting drug use was the most frequently reported probable mode of transmission in men (75.5%), while heterosexual transmission in women (68.3%). In total, since the beginning of reporting 4572 men and 205 women died of HIV.

Data on CD4 counts are registered in the individual patients' medical records, but are not reported to the Iranian Centres for Disease Control.

In 2011, 104 104 cases of genital ulcer were reported in the Islamic Republic of Iran, and of these 97.4% were in women, which is difficult to explain.

HIV testing data

Since 2007, there is no routine screening of pregnant women for syphilis.

HIV prevalence in blood donors in 2008–2011 is consistently around 0.004%. The prevalence of other infections in blood donors in 2012 was: syphilis, 0.001%; hepatitis B, 0.2%; hepatitis C, 0.06%. HIV prevalence in other groups tested for HIV in 2011 was: tuberculosis patients, 12.7% (n = 2300); VCT clients, 4.0% (n = 36774); prisoners, 2.9% (n = 17728).

Based on the national tuberculosis and antenatal care guidelines, all pregnant women and tuberculosis patients should be evaluated for risks of HIV (history of imprisonment, injecting drug users, high-risk sexual behaviours of a patient and of his/her partner), and tested for HIV if the risks are present. Based on the national STI syndromic management guidelines, HIV testing is offered to patients with STI if voluntary HIV testing and counselling services are available at that site. No testing for HIV is conducted without the patient's agreement.

HIV prevalence surveys

Facility-based surveillance among STI patients is carried out in STI clinics in one city (Isfahan). In 2009, HIV prevalence was 1.2% among female STI patients while in 2010, 2011 and 2012 (n = 170) no case of HIV were found among STI patients.

HIV prevalence was 3.8% (n = 3133) among tuberculosis patients in the national-level survey carried out in 2010 that included all tuberculosis clinics in the country.

In 2008, 2009, 2010 and 2012 no HIV case was detected in surveys among pregnant women, while in 2011 prevalence was 0.1% in two cities (Semnan and Kermanshah).

Among prisoners, HIV prevalence was: 2.8% in 2008, 1.6% in 2009, 1.4% in 2010, 0.7% in 2011 and 1.6% in 2012. In 2010, the sampling included 17 prisons that have at least 250 prisoners. In 2012, a survey was carried out in 38 prisons in 28 out of 46 regions. The sample size range was 228–1200 per prison.

Among those imprisoned for drug-related crimes, HIV prevalence was 1.7% in 2009, 2010 and 2012, which is at the similar levels as in 2007 and 2008. These surveys were done at 3 sites in 2012 (sample size range 250–491).

Among truck-drivers sampled in 2010 at 3 border terminals where they can exit the country, no cases of HIV were found (n = 1953). Surveys carried out in 2011 and 2012 at 4 sites did not find cases of HIV, too (sample size ranging from 250–400). Nor were any cases of HIV found among sailors sampled at 4 ports in 2010 (n = 656) while in 2011 HIV prevalence was 0.5%. In 2012, 400 sailors were sampled at one site, and no cases of HIV were found.

HIV prevalence among men 18–20 years old serving the obligatory military service in three provinces in 2010 was 0.16%, while in 2011 no cases of HIV were found. In 2012, military recruits were sampled at 3 sites (sample size ranged from 250–400) and HIV prevalence was 0.1%.

It is planned to implement facility-based surveys annually until 2017 among STI patients, pregnant women, prisoners, clients of facilities for treatment of addiction and clients of

facilities for vulnerable women. Data from routine provider-initiated HIV testing is planned to replace surveys among tuberculosis patients.

In terms of community-based HIV surveillance, HIV prevalence in female sex workers in 12 provinces in 2010 was 3.8% (n = 876), and 4.5% in 2011. Female sex workers were recruited within facilities serving vulnerable women and at VCT centres.

An RDS survey among female sex workers was carried out in Kerman in 2010 (n = 144) and found the following prevalence of infections: HIV, 0%; syphilis, 7.1% (Venereal Disease Research Laboratory Test); HSV-1 and 2, 14.2%; C trachomatis, 2.9%; Neisseria gonorrhoeae, 0; Trichomonas Vaginalis, 1.4%.

The RDS survey in Shiraz completed in 2011 found the following prevalence of infections: HIV, 5.2%; *C trachomatis*, 9.3%; HSV-2, 9.3%; *Neisseria goorrhoeae*, 1.4%.

Among street children, the survey using time location sampling (TLS) conducted in 2010 found HIV prevalence of 4.5%. In 2009–2010, HIV prevalence among injecting drug users recruited in 10 provinces (from VCT and drop-in centres) was 13.4%, which is almost the same as in 2007 (13.3%), while in 2011 HIV prevalence was 15.0%. An HIV survey was done in 2012 among 593 homeless people in Teheran, and HIV prevalence was 3.4%.

Surveys among key populations at higher risk are planned as part of the community-based HIV surveillance: female sex workers in 2013 and 2016; injecting drug users in 2013 and 2016, street children in 2014 and 2017.

Size estimations

Size estimates are available for female sex workers in 2010 ($n = 80\,000$), for prisoners in 2009 ($n = 4080\,152$), and injecting drug users in 2007 ($n = 250\,000$). It is planned to carry out population size estimates of injecting drug users, men who have sex with men and female sex workers in 2014 and 2016.

Mode of transmission analysis and HIV data triangulation

Mode of transmission analysis was conducted in 2011, and the results are presented in Table 3.7. Data indicate that more than 50% of new HIV infections occurred among injecting drug users.

Table 3.7 Results of the mode of transmission analysis, 2011, Islamic Republic of Iran

Population group	New HIV infections (%)
IDU	56.0
Partners of IDU	12.2
FSW	1.3
Clients of FSW	4.2
Partner of clients of FSW	2.8
Other high risk sub-populations	14.9
Low risk heterosexual	8.1

IDU: injecting drug users FSW: female sex workers

HIV drug resistance monitoring and surveillance

A survey of transmitted HIV drug resistance was carried out in 2011. Out of 51 patients tested at 3 sites, 2 patients showed resistance against nucleoside reverse transcriptase inhibitors (NRTIs). Eligibility criteria were: newly diagnosed cases age <30 and CD4 count >500, without history of pregnancy or ARV treatment. The following subtypes were found: 45 had CRF35_AD, 1 had subtype B and 1 CRF01_AE (n = 47).

The following HIV drug resistance early warning indicators were reported for 2012:

- On-time pill pick-up [defined as percentage of ART patients picking up all prescribed ARV drugs on time (Baseline + 1 pick-up)]: 62.8% by self-report and 60.6% by pill count method (n = 73); done at one HIV clinic;
- Retention in care (defined as percentage of adults and children known to be alive and on treatment 12 months after initiation of ART): 82.6% (n = 1105, one site);
- Pharmacy stock-outs (defined as percentage of months in a designated year in which there were no ARV drug stock-outs): 100%.

3.6 Iraq

In Iraq, HIV surveillance activities are not integrated into the national communicable disease surveillance system. All HIV surveillance activities are integrated into the national HIV monitoring and evaluation framework.

HIV and STI case reporting

There is a protocol for HIV case reporting. Data on HIV cases were not submitted by the national AIDS programme for 2010 and 2011.

HIV testing data

In 2010, 6 cases were found among 497 996 tested blood donors (0.001%). No HIV cases were found among other group tested: STI patients (n = 177 730), prisoners (n = 4629). No data were available for tuberculosis patients and pregnant women in 2010. No syphilis cases were found among 57 134 pregnant women tested.

Testing for HIV among pregnant women is conducted after risk assessment with informed consent. Tuberculosis patients are routinely tested and testing is voluntary. There are no policies on testing of STI patients.

HIV prevalence surveys

Facility-based HIV surveillance does not exist as such. HIV prevalence data are available for groups tested for HIV. HIV prevalence among tuberculosis patients in 2009 was 0.005% (n = 22000). In 2009, 90 113 STI patients, 6499 pregnant women and 1673 prisoners were tested for HIV and no cases of HIV were found. Three HIV cases were found among 468 521 tested blood donors (0.0006%). No cases of HIV were found among individuals tested during pre-marital counselling (n = 509038) and VCT clients (n = 2720). One case of syphilis infection was recorded among 22 486 tested pregnant women in 2009.

No IBBSS have been conducted in Iraq. Depending on the stability in the country, it is planned to carry out an IBBSS in injecting drug users in 2015 and in female sex workers in 2016.

Size estimations

There are no estimates of the size of key populations at higher risk and no plans to carry them out.

Mode of transmission analysis and HIV data triangulation

Mode of transmission analysis and HIV data triangulation have not been carried out.

HIV drug resistance monitoring and surveillance

HIV drug resistance indicators are not available in Iraq.

3.7 Jordan

All HIV surveillance activities in Jordan are integrated into the national communicable disease surveillance system, while only partially integrated in the national HIV monitoring and evaluation framework. There is no national HIV surveillance plan.

HIV and STI case reporting

The national AIDS programme has a protocol for HIV case reporting. Since the beginning of reporting until end of 2011, 248 HIV cases were reported (81.0% were in men). The most common transmission category was heterosexual (55.6%) followed by blood and blood products (24.1%).

In 2011, 17 HIV cases were reported, out of which 7 were men. Eight cases in men were reported as being due to heterosexual transmission. CD4 count data were reported for 70.6% of patients in 2011 and 58.3% of these had CD4 counts less than 350 cells/mm³ at the time of HIV diagnosis.

In 2011, 5 cases of AIDS deaths were reported and 4 of these were in men. To date in Jordan a cumulative number of 101 people have died of AIDS and of these 78.2% were men.

STI case reporting data are not available.

HIV testing data

HIV prevalence among tuberculosis patients was 0.02% in 2007, while in 2008, 2009, 2010 and 2011 no cases of HIV were found among tuberculosis patients. In 2012, the prevalence was 0.3%. These data in tuberculosis patients stem from routine testing of tuberculosis patients for HIV.

HIV surveys found no HIV cases among prisoners in 2007, 2008, 2009 and 2010.

An HIV test is not offered to STI patients and pregnant women. Pregnant women are not screened for syphilis.

A few blood donors were found to be HIV positive: 0.0006% in 2008; 0.001% in 2009 and 0.0005% in 2010 and 2011 (n = 189621 in 2011).

HIV prevalence surveys

In Jordan no facility-based HIV prevalence surveys have been carried out. In 2009 bio-behavioural surveys (RDS) were carried out in 2009 in four governorates: no cases of HIV were found in female sex workers and injecting drug users, while 0.2% of men who have sex with men tested positive. There are plans to conduct bio-behavioural surveys in female sex workers, injecting drug users and men who have sex with men in 2017. There are no facility-based surveys for 2013–2017.

Size estimations

The only available size estimates are for prisoners (n = 8500 in 2010). There are no plans to carry out population size estimates of key populations at higher risk.

Mode of transmission analysis and HIV data triangulation

Mode of transmission analysis and HIV data triangulation have not been done.

HIV drug resistance monitoring and surveillance

A survey of acquired HIV drug resistance was carried out at one site in 2011. Out of 11 patients surveyed, 90.9% achieved viral load suppression after 12 months, and one patient had resistance to protease inhibitors (PI) and NRTIs.

The following four HIV drug resistance early warning indicators were reported as measured in 2011 at one ART site in Amman that provides HIV care to the majority of people living with HIV in Jordan:

- percentage of ART patients picking up all prescribed ARV drugs on time: 78% (n = 112);
- percentage of adults and children known to be alive and on treatment 12 months after initiation of ART: 96.6% (n = 112);
- percentage of months in a designated year in which there were no ARV drug stock-outs;
 100% (measured at one site);
- percentage of adults and children prescribed or picking up mono or dual ARV therapy: 10.7%.

The following HIV drug resistance early warning indicators were reported as measured in 2012 at one ART site:

- percentage of ART patients picking up all prescribed ARV drugs on time: 100% (n = 14);
- percentage of adults and children known to be alive and on treatment 12 months after initiation of ART: 100% (n = 11);
- percentage of months in a designated year in which there were no ARV drug stock-outs: 100% (measured at one site);
- percentage of adults and children prescribed or picking up mono or dual ARV therapy: 0%;
- percentage of patients receiving ART at the site after the first 12 months of ART whose viral load is <1000 copies/ml: 90.9% (n = 11).

3.8 Kuwait

In Kuwait, HIV surveillance is partly integrated into the national communicable disease surveillance, and it is an integral component of the national monitoring and evaluation framework. There is no national HIV surveillance work plan.

HIV and STI case reporting

The national AIDS programme has a protocol for HIV case reporting.

In 2011, 25 HIV cases were diagnosed, and of these 21 were in men. There are no data on the cumulative number of reported HIV cases. In 2011, one case of death due to AIDS was reported.

Data on CD4 counts at the time of HIV diagnosis are not available.

There is no STI reporting system.

HIV testing data

HIV prevalence in various groups tested for HIV in 2011 was: 0.006% in blood donors ($n = 66\,046$), 0.003% in premarital couples ($n = 26\,467$), 0.1% in prisoners (n = 3567) and 0% in 373 injecting drug users tested for HIV.

HIV testing is not routinely offered to pregnant women while voluntary testing is offered to STI patients. tuberculosis patients are routinely tested for HIV.

HIV prevalence surveys

There is no facility-based and community-based HIV surveillance.

Size estimations

There are no estimates of the size of key populations at higher risk. There are also no plans available for implementing HIV facility and community-based surveillance, and for population size estimates.

Mode of transmission analysis and HIV data triangulation

Mode of transmission analysis and data triangulation have not been conducted, and there are no plans for carrying them out.

HIV drug resistance monitoring and surveillance

In 2011, it was reported that a study of acquired HIV drug resistance was done in 15 patients. One patient had HIV drug resistance at baseline for PIs and one for non-nucleotide reverse transcriptase inhibitors (NNRTI). At 12 months, no HIV drug resistance mutations were found.

The following HIV drug resistance early warning indicators were reported for the year 2010:

percentage of months in a designated year in which there were no ARV drug stock-outs:
 100% (measured at 1 site);

- percentage of adults and children prescribed or picking up mono or dual ARV therapy: 0% (1 site);
- percentage of patients receiving ART at the site after the first 12 months of ART whose viral load is <1000 copies/ml: 92% (measured at 1 site).

3.9 Lebanon

HIV surveillance in Lebanon is partly integrated in the national communicable disease surveillance and HIV surveillance activities are fully integrated in the national monitoring and evaluation framework.

HIV and STI case reporting

There is no reporting of AIDS deaths. Data on CD4 counts at the time of HIV diagnosis are not collected. Patients have to pay for CD4 counts testing by themselves.

The national AIDS programme has a protocol for HIV case reporting.

In 2010, 23 HIV cases were reported, and 18 of these were in men (in men, 11 cases were reported as men who have sex with men and 6 as bisexual). Overall, 32 AIDS cases were reported in 2010 and of these 28 were in men. The national AIDS programme manager indicated in the interview that HIV case reports are often incomplete as the majority of HIV patients are treated by private physicians. There are difficulties in establishing collaboration on HIV surveillance and patients' monitoring with private physicians, which affects the quality of HIV case reporting and the indicators of ART outcomes.

In 2011, 109 HIV cases were reported. Since slightly more than 50% had missing data on sex, it is not possible to assess the sex distribution of HIV cases.

HIV testing data

An HIV test is routinely offered to tuberculosis and STI patients, and pregnant women. The HIV test is only carried out with the consent of the person who has been offered the test.

Among 41 140 blood donors tested, there were no cases of HIV in 2009, while in 2010 HIV prevalence was 0.01% (5 HIV positive out of 50 950 blood donors tested). In 2009, among 523 tuberculosis patients tested, HIV prevalence was 3.4%. In 2010, among 135 tuberculosis patients tested no cases of HIV were found. The testing data from the following groups were reported in 2009: prisoners, 0.16% (n = 608); injecting drug users, 0.9% (n = 109); men who have sex with men, 4.4% (n = 406).

In 2011, HIV prevalence measured at testing services for men who have sex with men was 0.7% (n = 213) and for tuberculosis patients 0.3% (n = 632).

Data on syphilis prevalence among pregnant women are not available.

HIV prevalence surveys

HIV prevalence from a facility-based HIV survey among tuberculosis patients in 2009 was 0.003%, compared to 0.05% in 2008.

An HIV survey using RDS in men who have sex with men was done in 2011 and found HIV prevalence of 0.9%. It is planned to do a survey in people living with HIV and in men who have sex with men in 2014.

Size estimations

There are no population size estimates of key populations at higher risk. There are plans to estimated population sizes of men who have sex with men in 2014 and 2016, female sex workers in 2014 and in injecting drug users in 2015.

Mode of transmission analysis and HIV data triangulation

A mode of transmission analysis is planned for 2013.

HIV drug resistance monitoring and surveillance

The following HIV drug resistance early warning indicators were reported as estimates (as opposed to actual measurements) in 2011:

- percentage of ART patients picking up all prescribed ARV drugs on time: 70%;
- percentage of adults and children known to be alive and on treatment 12 months after initiation of ART: 80%;
- percentage of months in a designated year in which there were no ARV drug stock-outs: 66%;
- percentage of adults and children prescribed or picking up mono or dual ARV therapy: 5%;
- percentage of patients receiving ART at the site after the first 12 months of ART whose viral load is <1000 copies/ml: 75%.

The following HIV drug resistance early warning indicators were reported as measured in 2012:

- percentage of ART patients picking up all prescribed ARV drugs on time: 92.3%;
- percentage of adults and children known to be alive and on treatment 12 months after initiation of ART: 95.1%;
- percentage of months in a designated year in which there were no ARV drug stock-outs: 100%;
- percentage of adults and children prescribed or picking up mono or dual ARV therapy: 0%;
- percentage of patients receiving ART at the site after the first 12 months of ART whose viral load is <1000 copies/ml: not available.

3.10 Libya

In Libya, HIV surveillance is partly integrated into the national communicable disease surveillance. All HIV surveillance activities are integrated into the national monitoring and evaluation framework.

HIV and STI case reporting

There is no protocol for HIV case reporting. The national AIDS programme reports the existence of HIV case reporting but no data were provided for the year 2011. There is no reporting of AIDS deaths. Data on CD4 counts at the time of HIV diagnosis are not collected.

HIV testing data

In terms of HIV testing policies, there is routine testing for HIV among pregnant women, STI and tuberculosis patients; however no data have been reported to WHO.

HIV prevalence surveys

There is no facility-based HIV surveillance and no size estimates of high-risk groups. It is planned to carry out facility-based HIV surveys in tuberculosis patients annually in 2013–2016, pregnant women in 2013–2017 and in prisoners in 2014. There are no data on HIV testing from various sub-groups.

RDS surveys were recently conducted in Tripoli, and included 328 injecting drug users, 227 men who have sex with men and 69 female sex workers. HIV prevalence found in these surveys was 87% in injecting drug users, 3% in men who have sex with men and 16% among female sex workers.

There are plans to implement community-based HIV surveys among female sex workers, men who have sex with men and injecting drug users in 2014 and 2016.

Size estimations

It is planned to conduct population size estimations of female sex workers, injecting drug users and men who have sex with men in 2014.

Mode of transmission analysis and HIV data triangulation

HIV data triangulation and mode of transmission analysis have not yet been carried out.

3.11 Morocco

In Morocco, HIV surveillance is integrated into the communicable disease surveillance system and into the monitoring and evaluation framework.

HIV and STI case reporting

A protocol for HIV case reporting is available.

Since the beginning of reporting until the end of 2011, 6453 HIV cases were reported and 6421 of cases had data on gender and mode of transmission. Men accounted for 54.0% in the cumulative number of HIV cases. Heterosexual transmission was the most commonly reported mode of transmission, in 73.2% of men and 85.9% of women.

In 2011, 753 HIV cases were reported and of these 49.1% were in men. Heterosexual mode of transmission was reported in 81.9% of male and 89.2% of female cases. All HIV cases had CD4 counts data reported, and 54.6% were reported with CD4 counts less than 350 cells/mm³ at the time of HIV diagnosis⁸.

In 2009, data on CD4 counts were collected for all patients, and 52% of them had CD4 counts at diagnosis <350 cells/mm³. In 2010, 71% of HIV cases had CD4 counts data reported at the time of diagnosis, and 79% of these had CD4 <350 cells/mm³.

In 2011, 65 830 cases of urethral discharge and 5617 cases of genital ulcer were reported in men and 9971 cases of genital ulcer in women.

HIV testing data

Until 2017, it is planned to assess HIV prevalence from routine testing data in pregnant women and tuberculosis patients. HIV prevalence assessment is planned to be done in STI patients and prisoners in 2014 and 2016.

Among 200 000 blood donors tested, HIV prevalence in 2009 was 0.02% and 0.04% in 2010.

The following HIV prevalence data were reported from HIV testing services for 2011: 0.02% in blood donors ($n = 200\ 000$); 0.1% in pregnant women (n = 2995); 2.2% in tuberculosis patients (n = 1856) and 1.99% in STI patients (n = 201).

In blood donors the prevalence of other infections in 2011 (n = 132 197) was as follows: syphilis, 0.04%; hepatitis B, 1.1% and hepatitis C, 0.2%.

HIV prevalence surveys

HIV prevalence from facility-based surveys in 2009 and 2010 was: tuberculosis patients, 0.4% in 2009 and 0.8% in 2010; STI patients, 0.3% in 2009 and 2010; pregnant women, 0.2% at 30 sites in 2009 and 0.1–2.7% in 2010 at 6 sites with the highest HIV prevalence in 2009; male prisoners, 0.4% in 2009 and 0.5% in 2010; female sex workers, 2.4% at 14 sites in 2009 and 2.7% at 13 sites in 2010. All testing was carried out as unlinked anonymous.

Prevalence of syphilis among pregnant women in 2009 was 1.01%, and in 2010 it was 1.11% (from the same six sites that measured HIV prevalence in 2010).

Facility-based HIV surveillance was not conducted in 2011.

IBBSS using RDS in female sex workers, men who have sex with men and injecting drug users were conducted in 2010–2011 (Table 3.8).

Surveys in injecting drug users, men who have sex with men and female sex workers are planned to be done again in 2014, along with a survey in seasonal workers.

Table 3.8 HIV prevalence (%) in RDS surveys carried out in injecting drug users, men who have sex with men, female sex workers in Morocco by city, 2011

Population	Agadir	Fes	Rabat	Marrakesh	Tangier	Nador
FSW ^a	5.1	1.8	0	_	1.4	_
MSM ^b	5.6	_	_	2.8	_	_
IDU^c	_	_	-	_	0.4	25.0

^a Sample size: 324–392 per site

FSW: female sex workers

MSM: men who have sex with men

IDU: injecting drug users

^b Sample size:323–346 per site

^c Sample size: 269–278 per site

⁻ Not available

Size estimations

It is estimated that in 2010 there were 67 000 female sex workers, 18 500 injecting drug users, 45 000 men who have sex with men, and 60 000 prisoners. These estimates were generated during the process of the mode of transmission analysis. There are plans to carry out population size estimates in 2013 in female sex workers, men who have sex with men, injecting drug users and migrants.

Mode of transmission analysis and HIV data triangulation

The national AIDS programme carried out the mode of transmission analysis in 2010 (Table 3.9). The highest proportion of new infections was estimated to occur in low-risk heterosexuals (26.3%), followed by clients of female sex workers (23.8%) (3).

Data triangulation was done in 2011–212 in the region Souss Massa Draa. It found that data from unlinked anonymous surveillance in pregnant women in Souss Massa Draa indicate an increase in HIV prevalence from 0.2% in 2001 to 0.8% in 2010 (p=0.003), with the highest levels observed outside of the regional capital Agadir, in Chtouka-Ait-Baha and Taroudant. HIV facility-based surveillance in female sex workers found in 2010 an HIV prevalence of 13.3% in Taroudant and 4.5% in Agadir. Programme monitoring data show the increase in HIV testing, and in 2010 62 tests per 1000 female sex workers, 52/1000 men who have sex with men and 5.7/1000 truck drivers were performed. In 2010, 67.8% of male and 64.9% of female newly reported HIV cases had CD4 count of <200 cells/mm³ at the time of HIV diagnosis. Coverage with anti-retroviral treatment was expanded, from 16% in 2004 to 51% in 2011.

Coverage with HIV prevention programs in Souss Massa Draa was increasing but was insufficient to have a more profound effect on prevention of HIV transmission. HIV prevention services need to be scaled up and to take into consideration hotspots of the epidemic that are driven by various behavioural and structural determinants, such as sex work and poverty, that should be further explored.

Table 3.9. Mode of transmission analysis, 2010, Morocco

Population group	New HIV infections (%)
FSW	14.4
Clients of FSW	23.8
Partners of clients of FSW	7.8
MSM	13.5
Female partners of MSM	0.8
CHS	2.4
CHS partners	4.4
Low-risk heterosexual	26.3
IDU	5.7
IDU partners	0.8

FSW: female sex workers

MSM: men who have sex with men CHS: casual heterosexual sex IDU: injecting drug users

HIV drug resistance monitoring and surveillance

There is no surveillance of HIV drug resistance. The only indicator reported for the year 2012 is on pharmacy stock-outs (no stock-outs occurred).

3.12 Oman

HIV surveillance is integrated in the national communicable disease surveillance and monitoring and evaluation plan.

HIV and STI case reporting

There is a protocol for HIV case reporting. In 2011, 140 HIV cases were reported and out of these 67.9% were in men. Since the beginning of reporting until the end of 2011 1353 cases were reported and of these 70% were in men. In 2011, 41.4% of all cases had a heterosexual mode of transmission reported, followed by 32.1% of cases with an unknown mode of transmission.

In 2011, 32 AIDS deaths were reported and of these, 27 were in men. Until the end of 2011 there was a cumulative total of 811 AIDS deaths, and of these 75.6% were in men.

Information on CD4 counts in 2009 was collected from 35% of newly diagnosed HIV cases, and 73% of these had CD4 counts <350 cells/mm³. In 2010 it was reported that CD4 data are available for 53% of newly diagnosed cases, and 27% had CD4 counts <350 cells/mm³. For 2011 it was reported that 67.1% of newly diagnosed HIV cases had CD4 counts assessed, and 63.8% of these had CD4 counts <350 cells/mm³.

In 2011, 120 cases of urethral discharge were reported in men, and 1036 cases of genital ulcer in both men and women.

HIV testing data

All tuberculosis patients, prisoners and pregnant women are screened for HIV, but it is challenging to interpret HIV prevalence in STI patients due to case definitions of STI patients. In 2010, HIV prevalence in different patient groups tested for HIV was: tuberculosis patients, 1.8% (compared to 5.9% in 2007 and 1.3% in 2009); STI patients, 0.2% (compared to 0.4% in 2007; 2.3% in 2008 and 2009); pregnant women, 0.04% (compared to 0.03% in 2009); prisoners, 0.3% (compared to 0.4% in 2007 and 0.8% in 2009).

In 2011, HIV prevalence from screening programs was: STI patients, 0.02%; prisoners, 0.3%; tuberculosis patients, 2.9%; pregnant women, 0.03%.

HIV testing data that are reported from government facilities often do not include migrants. Migrants are most commonly using private health care and need to bear the costs of HIV testing themselves (that also refers to pregnant women who are immigrants).

Among blood donors, HIV prevalence was 0.02% (n = 53,456) in 2009, 0.04% in 2010 and 0.01% in 2011. As reported, there is a policy of a routine offer of an HIV test to pregnant women, STI and tuberculosis patients, and no testing without agreement.

Syphilis prevalence among pregnant women was 0.2% in 2007, 0.1% in 2008 and 0.05% in 2011. Data for 2009 and 2010 were not available.

There are plans to continue routine HIV testing and to analyse data annually until 2017 in tuberculosis and STI patients, pregnant women, prisoners and immigrants.

HIV prevalence surveys

There is no community-based HIV surveillance in high-risk groups. Implementation of a survey and size estimates in injecting drug users have been postponed several times and is now planned for 2013.

Size estimations

Population size estimates of key populations at higher risk of HIV are not available.

Mode of transmission analysis and HIV data triangulation

Mode of transmission analysis and HIV data triangulation have not yet been conducted.

HIV drug resistance monitoring and surveillance

The only HIV drug resistance indicator available is on virological suppression: in a cohort of 112 patients initiated in 2011 only 35% of patients achieved viral load suppression after 12 months.

3.13 Pakistan

HIV surveillance in Pakistan is not an integral part of the national communicable disease surveillance system. There is no national HIV surveillance work plan.

HIV and STI case reporting

There is reporting of HIV and AIDS, and no reporting of AIDS deaths.

In 2009 data on CD4 counts at the time of HIV diagnosis were collected from 90% of all newly diagnosed HIV patients; 36% of these had CD4 counts <350 cells/mm³.

HIV testing data

No data were reported on HIV testing among various groups for 2009 and 2010. HIV testing is routinely offered to pregnant women, and testing is carried out with their agreement. HIV testing is not routinely offered to STI and tuberculosis patients. In the 2009 questionnaire, it was reported that 16 HIV testing sites of the national tuberculosis programme tested around 250 000 tuberculosis patients in 2008 (HIV prevalence was around 3.6%).

HIV prevalence surveys

A facility-based survey in pregnant women in 2010 found HIV prevalence of 0.05%. It included 26 510 women recruited from 42 sites in 9 districts.

Table 3.10 Results of IBBS, Pakistan, 2005-2011

Population	2005	2007	2008	2011
IDU	0.3%, Multan;	0, Multan;	12.3%, Faisalabad;	3.3%, Pakpattan;
	25.4%, Hyderabad;	51.3%, Sargodha;	30.5%, Hyderabad;	52.5%, Faisalabad;
	7 cities (147–402)	12 cities (72–400)	8 cities (231–403)	16 cities (65–365)
FSW	0-0.8%, Karachi;	1 +ve out of 4639;		0-1.9%, Karachi;
	8 cities (359–411)	12 cities (194-425)		12 cities (211–377)
Male sex	0–4%, Karachi;	0-7.5%, Karachi;	0-3.1%, Karachi;	0-5.9%, Karachi; 11
workers	8 cities (169–209)	12 cities (177–201)	6 cities (200)	cities (84–360)
Hijra sex	0-1.6%, Sukkur;	0–14%, Larkana;	0–27.6%, Larkana;	0-14.9%, Larkana;
workers	8 cities (99–200)	12 cities (35-21)	6 cities (161–222)	11 cities (266–366)

Sample sizes per city are shown in parenthesis.

In 2008 and 2011, HIV surveys were conducted in injecting drug users (multi-stage cluster sampling), male sex workers (RDS) and *hijra* sex workers (network sampling), as part of the third round of IBBSS. Results are well described in the report. The IBBSS, which is funded by CIDA, does not include testing for STIs.

Table 3.10 shows results of IBBSS carried out in 2005–2011 (reports are available at: http://www.nacp.gov.pk/surveillance_and_research/)

In 2009, a community-based HIV survey was conducted among female sex workers in 6 cities with UNAIDS funding, and HIV prevalence was 0.9%.

No HIV surveillance activities were carried out in 2009 and 2010 due to termination of funding. HIV surveillance activities re-started in 2011. No plans were reported for HIV surveillance for 2012-2016.

Size estimations

In 2010, it was estimated that there were 136 000 female sex workers (in 2008, n = 132 796); 99 000 injecting drug users (in 2008, n = 89 423); 62 636 male sex workers (in 2008, n = 61 038); 42 877 *hijra* sex workers (in 2008, n = 41 818).

3.14 Occupied Palestinian territory

In the occupied Palestinian territory HIV surveillance is integrated into the national communicable disease surveillance system.

HIV and STI case reporting

There is a protocol for HIV case reporting.

In 2011 6 people (2 men and 4 women) were diagnosed with HIV. CD4 counts at the time of HIV diagnosis were assessed in one case (16.7%) and were <350 cells/mm³. Since the beginning of reporting 72 HIV cases have been reported (57 men and 12 women). The most frequently reported mode of transmission was heterosexual in both men and women (54.4% and 66.7%, respectively).

No case of death due to AIDS was reported in 2011. Since the beginning of reporting until 2011, 49 AIDS deaths were registered in the occupied Palestinian territories.

In 2011, 64 cases of urethral discharge and no case of genital ulcer were reported in men. In women, 1453 cases of genital ulcer were reported.

In 2009, 25 tuberculosis patients and 20 pregnant women were tested for HIV, and no HIV case was detected. No HIV cases were found among 58 184 blood donors tested and among 65 STI patients and 272 out-migrants tested for HIV. Similarly, no cases of HIV were found in any of the groups tested in 2010 and 2011. Among blood donors in 2011, prevalence of hepatitis B was 1.3% and of hepatitis C was 0.2%. An HIV test is routinely offered to pregnant women and STI patients. Tuberculosis patients are tested routinely, without seeking their agreement.

HIV testing data

In 2010, facility-based HIV surveys were carried out among tuberculosis and STI patients and pregnant women at the national level, and among prisoners at the regional level. No case of HIV was found in these surveys. It was reported that syphilis prevalence in pregnant women was zero in 2009 and 2010, while data for the year 2011 were not available.

HIV prevalence surveys

There are no plans for facility-based surveillance for 2013–2017.

A major improvement in the HIV surveillance system was the implementation of a RDS survey among injecting drug users in the East Jerusalem Governorate in 2009. The survey recruited 199 injecting drug users. No HIV infections were found, while prevalence of HCV was 38.2%.

Another survey in injecting drug users is planned to be conducted in 2013.

Size estimations

There are no estimates of the size of key populations at higher risk in the occupied Palestinian territories and no plans to conduct size estimations.

Mode of transmission analysis and HIV data triangulation

Mode of transmission analysis and data triangulation have not been conducted.

HIV drug resistance monitoring and surveillance

In 2011, the following four HIV drug resistance early warning indicators were reported:

- percentage of ART patients picking up all prescribed ARV drugs on time: 95.2% (n = 21);
- percentage of adults and children known to be alive and on treatment 12 months after initiation of ART: 100% (n = 13, at four sites);
- percentage of months in a designated year in which there were no ARV drug stock-outs; 100%;
- percentage of adults and children prescribed or picking up mono or dual ARV therapy: 0.

In 2012, the following HIV drug resistance early warning indicators were reported:

- percentage of ART patients picking up all prescribed ARV drugs on time: 100% (n = 21, 2 sites);
- percentage of adults and children known to be alive and on treatment 12 months after initiation of ART: 100% (n = 21, at two sites);
- percentage of months in a designated year in which there were no ARV drug stock-outs; 100%;
- percentage of adults and children prescribed or picking up mono or dual ARV therapy: 0.

3.15 Qatar

In Qatar, HIV surveillance is not integrated into the national communicable disease surveillance system and in the national monitoring and evaluation framework. There is no national HIV surveillance work plan.

HIV and STI case reporting

As reported by the national AIDS programme, there is HIV, advanced HIV and AIDS case reporting, and reporting of AIDS deaths.

One male HIV case was reported in 2010 and 6 AIDS cases (4 male and 2 female), all with mode of transmission reported as heterosexual. Six cases had CD4 counts assessed at the time of the diagnosis, and three had CD4 <350 cells/mm³.

Other surveillance data in Qatar are not available.

HIV testing data

An HIV test is routinely offered to pregnant women but routine testing without informing women also occurs. HIV testing is not routinely offered to STI and tuberculosis patients.

HIV prevalence surveys

Plans for facility-based surveillance include implementation of HIV surveys in pregnant women, STI and tuberculosis patients and prisoners in 2013–2016 annually. Community-based HIV surveys are planned to be implemented annually in 2014–2016 in female sex workers, injecting drug users and, men who have sex with men. There are no plans to conduct population size estimates.

Mode of transmission analysis and HIV data triangulation

It was reported that mode of transmission analysis and data triangulation will be done in 2013.

3.16 Saudi Arabia

In Saudi Arabia HIV surveillance is integrated into the national communicable disease surveillance system and the national monitoring and evaluation framework. Mode of transmission analysis and data triangulation have not been carried out.

HIV and STI case reporting

There is a protocol for HIV case reporting. In 2011, 394 HIV cases were reported, and 81.2% of these were in men. The mode of transmission was reported to be undetermined for 60.2% of cases and heterosexual for 25.9%.

Since the start of HIV case reporting, a cumulative number of 3429 HIV cases have been reported in Saudi Arabia and 80.3% of these were in men. The mode of transmission was undetermined in 50.5% and heterosexual in 35.2%.

In 2011, 19 people died of AIDS while the cumulative total of AIDS deaths was 425.

In 2010 100% of newly diagnosed HIV cases had CD4 counts reported at the time of HIV diagnosis, and 12% had CD4 <350 cells/mm 3 .

In 2011, 946 cases of urethral discharge and 82 cases of genital ulcer were reported in men compared to 201 cases of genital ulcer in women.

HIV testing data

An HIV test is not routinely offered to pregnant women, and there is no mandatory testing of pregnant women. However, tuberculosis and STI patients are routinely tested for HIV without asking for agreement. HIV prevalence in blood donors was 0.01% in 2008, 0.04% in 2009 and 0.03% in 2010. HIV prevalence in tuberculosis patients tested for HIV was 1.0% (n = 2133) in 2008, 0.4% in 2009 and 2010. In 2009, HIV prevalence in STI patients was 0.3% and similar in 2010 (0.2%). In injecting drug users tested in 2009 HIV prevalence was 0.3%, and 0.4% in 2010 (n = 2925).

HIV prevalence surveys

HIV prevalence from the facility-based surveys in 2010 was reported as: 0.03% among STI patients in Asier (n = 224); 0.016% among prisoners in Asier and Riyadh (n = 240); 0.006% among injecting drug users in Jeddah and Riyadh (n = 574). These data should be reviewed, as the low percentages are not possible even if just one case was HIV-positive. All testing was conducted as linked anonymous, which is a change from the unlinked anonymous testing conducted in 2008. Data on syphilis testing and prevalence among pregnant women are not reported to the national AIDS programme.

In 2011, the national AIDS programme reported the following HIV prevalence results from facility-based surveys: tuberculosis patients, 1.9% (n=1200), STI patients, 1.1% (n=1200), prisoners, 1.3% (n=1200). All testing was unlinked anonymous. In 2012, the national AIDS programme reported that facility-based surveys would be conducted in pregnant women, prisoners, STI and tuberculosis patients in 2014 and 2016, and in injecting drug users in 2013 and 2015.

The only available community-based data are from a survey conducted among youth in poor areas in Jeddah in 2009, and HIV prevalence was 0.85% (n = 5500).

As in previous years, female sex workers and men who have sex with men remain "non-applicable groups" for HIV surveillance in Saudi Arabia.

Size estimations

The only available data on size estimates are in injecting drug users ($n = 10\,000$, year 2008). It is planned to do size estimates of injecting drug users in 2013.

HIV drug resistance monitoring and surveillance

Acquired HIV drug resistance is monitored routinely, and no other data on HIV drug resistance are available. In 2010, data collected from 1314 patients (all HIV patients in care) indicate that 97% achieved viral load suppression after 12 months, 0.3% had HIV drug resistance at baseline and 3% had detectable viral load and HIV drug resistance mutations at 12 months.

3.17 Somalia

The HIV surveillance system in Somalia is partly integrated into the mainstream national communicable disease surveillance system, and the national monitoring and evaluation framework. There is no national surveillance work plan.

HIV and STI case reporting

There is no protocol for HIV case reporting. In 2011, 633 HIV cases were reported, and of these 41.2% were in men. Since the beginning of HIV case reporting 3641 HIV cases have been reported, and of these 44.8% were in men. Data on HIV cases by mode of transmission are not available. In 2011 53 AIDS deaths were reported. Data on CD4 counts at the time of HIV diagnosis are available at ART registers but are not reported.

In 2011, 2380 cases of genital ulcer and urethral discharge were reported in men and 7103 of cases of genital ulcer in women.

HIV testing data

There were no data on HIV screening among specific population groups until 2010. In 2010, HIV prevalence in blood donors was 0.4% (n = 10 680), 6.2% in tuberculosis patients (n = 3741) and 0.6% in pregnant women (n = 5995). In 2011, the prevalence of HIV in blood donors was: HIV, 0.3%; syphilis, 1.7%; HBV, 6.3%; HCV, 0.5%. Other HIV testing data for the year 2011 were available for tuberculosis patients (n = 4140; HIV prevalence, 4.9%) and pregnant women (n = 30 426; HIV prevalence 0.2%).

HIV prevalence surveys

HIV sentinel sero-surveillance was carried out among pregnant women, tuberculosis and STI patients in 2007 (Puntland, Somaliland) and 2010/11 (South Central Zone). HIV prevalence among pregnant women in 2007 was 1.3% in Somaliland and 0.5% in Puntland, while among STI patients it was 6.3% in Somaliland and 2.3% in Puntland. Syphilis prevalence among pregnant women in 2007 was 2.0% in Somaliland and 1.9% in Puntland.

In 2010 HIV prevalence in pregnant women was 1.7% in Somaliland (n = 1776) and 0.4% in Puntland (n = 1518), while syphilis prevalence was 0.9% and 1.0%, respectively. Among STI patients, HIV prevalence was 5.2% in Somaliland (n = 278) and 5.4% (n = 248) in Puntland. Among tuberculosis patients, HIV prevalence was 7.0% in Somaliland (n = 200) and 4.1% in Puntland (n = 130).

In 2011, HIV prevalence surveys were conducted in South Central Zone with the following results: HIV prevalence was 2.1% in tuberculosis patients (n = 383, conducted at 7 sites), 0.5% in STI patients (n = 564, conducted at 3 sites), 0.3% in pregnant women (n = 3200, conducted at 8 sites). Syphilis prevalence was 8.3% in pregnant women (n = 3200, conducted at 8 sites).

The only data from bio-behavioural surveys were from a study done among female sex workers in Somaliland in 2007 using RDS. HIV prevalence was 5.3% and syphilis prevalence was 3.1%. In 2010, formative research was done among female sex workers, truck drivers and portworkers in Berbera port town in Somaliland and Bossaso in Puntland.

According to the 2012 questionnaire, there are plans available to implement facility-based surveys in STI patients in 2013 and pregnant women in 2014, and an IBBS in female sex workers in 2014.

Size estimations

The following population size estimates are available for the year 2011 for the cities Berbera and Bosasso: female sex workers, 614; truckers, 1800; port workers, 2850.

Mode of transmission analysis and HIV data triangulation

HIV data triangulation and mode of transmission analysis have not been conducted.

HIV drug resistance monitoring and surveillance

The following EWIs are available:

- retention in care: 84.4%, 2011 (n = 359 patients from 7 ART sites in all three zones); 83.8%, 2012 (n = 37, data for only 4 out of 11 registries);
- percentage of adults and children prescribed or picking up mono or dual ARV therapy: 0%, 2011 (at 10 ART sites in all three zones); 0%, 2012.

3.18 South Sudan

HIV surveillance activities in South Sudan are not integrated into the national communicable disease surveillance system. Some components of HIV surveillance are integrated into the health management information system. All HIV surveillance activities are integrated into the national HIV monitoring and evaluation framework.

HIV and STI case reporting

There is no protocol for HIV case reporting and no reporting of HIV and AIDS deaths.

HIV testing data

In 2009, HIV prevalence among blood donors was 4.6% (n = 5260) and 2% (n = 1800) in 2010. Among tuberculosis patients tested for HIV, HIV prevalence was 13.4% in 2008 and 11.3% (n = 3537) in 2009. In pregnant women tested for HIV, prevalence was 2.0% in 2008 (n = 2206), 1.6% in 2009 and 1.6% (n = 32903) in 2010. HIV testing data for 2011 were not reported.

There is a policy in South Sudan of routinely offering an HIV test to all pregnant women and to all newly diagnosed tuberculosis patients, and HIV testing is voluntary. There is no policy of offering an HIV test to STI patients.

HIV prevalence surveys

HIV prevalence among pregnant women tested by UAT in 2009 was 3.0% (from 24 sites in 10 states, n=6173). In 2007, it was 3.4% (at 10 surveillance sites in six states; n=2364). Prevalence of syphilis among these pregnant women was 9.9%, compared to 11.2% in 2007. An HIV survey in tuberculosis patients was done in 2010, and HIV prevalence was 14.7% (n=517). The survey included testing for hepatitis C and B (testing was done for HBsAg and HBeAg). The prevalence of (probably chronic) hepatitis B and C was high: 12.8% and 8.0%.

There are plans to carry out facility-based HIV surveys among pregnant women in 2015, and in tuberculosis patients in 2014 and 2017.

There is still no community-based HIV surveillance among key populations at higher risk. A qualitative rapid assessment and response evaluation study in female sex workers, truck drivers and motorcycle taxi drivers (*boda boda*) was conducted at five locations at the end of 2010.

It is planned to implement an IBBSS in female sex workers in 2013 and 2016, and size estimates in female sex workers in 2014 and 2016. In 2015, it is planned to implement an AIDS indicator survey.

Size estimations

In 2010, it was estimated that there were 3227 prisoners in South Sudan. By mapping carried out in 2012 it was estimated that there were 2511 female sex workers in Juba and 378 in Yambio.

Mode of transmission analysis and HIV data triangulation

Mode of transmission analysis and HIV data triangulation have not been conducted.

HIV drug resistance monitoring and surveillance

The following four HIV drug resistance early warning indicators were reported in 2011:

- percentage of adults and children known to be alive and on treatment 12 months after initiation of ART: 62.5% (n = 931), measured at six sites in 2010;
- percentage of months in a designated year in which there were no ARV drug stock-outs: 75%.

3.19 Sudan

HIV surveillance in Sudan is not integrated into the overall national communicable disease surveillance system. HIV surveillance is part of the HIV monitoring and evaluation framework.

HIV and STI case reporting

According to the national AIDS programme, there is HIV and AIDS case reporting, and since 2011 reporting of advanced HIV and AIDS deaths. HIV and AIDS case reports are kept in two different databases. Data on CD4 counts are not reported. There is no protocol for HIV case reporting. HIV case reports are not available by transmission category. In 2011, 353 HIV cases were reported, and of these 67.7% were in men. Since the beginning of reporting 1450 HIV cases were reported and out of these, 58.1% were in men.

In 2011, 3655 cases of urethral discharge and 645 cases of genital ulcer were reported in men, compared to 660 cases of genital ulcer in women.

HIV testing data

Among 56 178 blood donors HIV prevalence was 0.46% in 2009, and 0.5% in 2010. Among 1749 tuberculosis patients tested it was 12.3% in 2009 and in 2010 it declined to 6.8%. No data on HIV prevalence from testing programmes were submitted for 2011.

Pregnant women are routinely offered an HIV test only at 35 PMTCT sites. Tuberculosis and STI patients are not routinely offered an HIV test.

HIV prevalence surveys

HIV prevalence data from the facility-based surveillance are available for pregnant women. In 2009, HIV prevalence at 35 sites was 0.2%, and testing was conducted as unlinked anonymous. Syphilis prevalence at these 35 sites was 1.3%.

In terms of development of facility-based HIV surveillance until 2017, it is planned to implement HIV surveys among STI patients in 2013, 2015 and 2017, pregnant women in 2016 and prisoners in 2014 and 2017.

The following are the HIV prevalence data collected in bio-behavioural surveys in key populations at higher risk in 2008: female sex workers, 0.1% and 0.9% (two cities, RDS); men who have sex with men, 2.3% (Khartoum City, RDS); truck drivers, 0.3% (TLS).

In 2011, RDS surveys were done among female sex workers in urban centres of 14 states, and found HIV prevalence of 0–7.7% (the sample size ranged from 292–316). Surveys in men who have sex with men using RDS were done in urban centres of 12 states and found a prevalence of 0–6.3% (the sample size ranged from 135–321).

Community-based HIV surveys are planned to be implemented in 2013 and 2016 among female sex workers and men who have sex with men.

Size estimations

Population size estimates of key populations at higher risk are not available, but are planned for female sex workers and men who have sex with men in 2014.

Mode of transmission analysis and HIV data triangulation

Mode of transmission analysis and HIV data triangulation have not been done.

HIV drug resistance monitoring and surveillance

Indicators related to HIV drug resistance are not available.

3.20 Syrian Arab Republic

In the Syrian Arab Republic HIV surveillance is an integral component of the national communicable disease surveillance system, and an integral component of the HIV monitoring and evaluation plan.

HIV and STI case reporting

There is a protocol for HIV case reporting.

In 2011, 69 cases of HIV were reported to the national AIDS programme, and of these 79.7% were in men. The most common transmission category in men was heterosexual (54.5%) followed by unknown mode of transmission (25.5%). In women, all cases were reported as heterosexual transmission. Since the beginning of reporting, a cumulative total of 762 HIV cases was reported, and of these 59.6% were in men.

In 2011, 13 AIDS deaths were reported and out of these 11 were in men. A cumulative number of 186 people are reported to have died from AIDS since the beginning of AIDS case reporting and 80.1% of these were male.

In 2011, in 4 newly diagnosed HIV cases CD4 count diagnostics was conducted (5.8%) and one case had CD4 count less than 350 cells/mm³.

In 2011, 268 cases of urethral discharge and 56 cases of genital ulcer were reported in men. 1553 cases of genital ulcer were reported in women.

In 2011, 416 350 blood donors were tested for HIV and HIV prevalence was 0.004%, which is similar to data from 2010 (0.001%). HIV prevalence was 0 in 822 tuberculosis patients tested (in 2010 it was 0.4%). In 2011 and 2010, 8989 and 94 STI patients were tested for HIV. No HIV case was detected. HIV prevalence was 0.2% among 457 prisoners tested in 2011. Among 3022 clients tested at voluntary testing and counselling centres HIV prevalence was 0.2% in 2010, and 0.6% (n = 1541) in 2011.

HIV testing data

The following prevalence data are available from blood donors in 2011: syphilis, 0.2%; hepatitis B, 1.7%; hepatitis C, 0.6%.

There is no policy of testing for HIV in pregnant women. Tuberculosis patients are routinely tested for HIV. An HIV test is routinely offered to all STI patients, and testing is reported as being voluntary.

HIV prevalence surveys

It seems that there is no facility-based HIV surveillance. The national AIDS programme reports facility-based surveillance data, which are the same as data from HIV testing services for various groups (tuberculosis and STI patients, pregnant women, voluntary testing and counselling clients). No plans were reported for HIV facility-based surveillance for 2013–2017.

There is no community-based HIV surveillance. However, there are plans to implement community-based HIV surveys in 2013 in female sex workers and men who have sex with men.

Size estimations

The following size estimates are available: 50 000 for female sex workers 10 000 for men who have sex with men and 10 000 for injecting drug users, but no information could be obtained as to how the national AIDS programme arrived at these size estimates. There are no plans to carry out further sizes estimates until 2017.

Mode of transmission analysis and HIV data triangulation

A mode of transmission analysis has not been conducted, and HIV data triangulation is not planned.

HIV drug resistance monitoring and surveillance

There is no information available on indicators related to HIV drug resistance.

3.21 Tunisia

In Tunisia, HIV surveillance activities are integrated into the national communicable disease surveillance system and the monitoring and evaluation framework.

HIV and STI case reporting

The national AIDS programme has a protocol for HIV case reporting. In 2011, 73 HIV cases were reported, and of these 61.6% were in men. Heterosexual transmission was the most frequently reported mode of transmission (64.4% of all cases). Since the beginning of reporting until end of 2011, a cumulative total of 1706 HIV cases was reported. Of these cases 70% were in men, and the most common transmission category was heterosexual (41.9%).

In 2011, 26 AIDS deaths were reported. The cumulative total of AIDS deaths since the beginning of reporting until 2011 was 529.

In 2010, completeness of CD4 counts reporting was 100%, and 30.8% had CD4 counts <350 cells/mm³. In 2011, CD4 counts were reported for 46.6% of newly diagnosed HIV cases, and 58.8% of these had CD4 counts <350 cells/mm³.

In 2011, 128 cases of urethral discharge and three cases of genital ulcer were reported in men, while 238 cases of genital ulcer were reported in women.

HIV testing data

There is a policy of a routine offer of a voluntary HIV test to pregnant women and in tuberculosis and STI patients with risk factors for HIV.

HIV prevalence surveys

A facility-based HIV survey was conducted in 2010 in 600 STI patients and no cases of HIV were found. No data from facility-based surveillance are available for the year 2011 and 2012. There are plans to conduct surveys among tuberculosis patients in 2013 and among STI patients in 2014.

In 2009, HIV prevalence among 181 486 blood donors tested was 0.004%, and 0.003% in the similar number of donors tested in 2010. Among 132 tuberculosis patients tested for HIV in 2009 HIV prevalence was 1.5%, while in 2010 it was 0.5%. No results of testing for HIV and other infections were reported for 2011.

In 2009, HIV community-based surveys using RDS found the following prevalence of HIV: 0.4% in female sex workers, 3.1% in injecting drug users and 4.9% in men who have sex with men. In the second round of surveys conducted in 2011, HIV prevalence was: 0.6% in female sex workers (TLS), 2.4% in injecting drug users (snowball) and 13.0% in men who have sex with men (TLS).

In 2011 another round of IBBSS was carried out. The prevalence among female sex workers was: 0.6% in Tunis (n = 357); 1.2% in Sousse (n = 347), 0 in Sax (n = 284). HIV prevalence in men who have sex with men was: 16.0% in Tunis (n = 300); 15.0% in Sousse (n = 140), 0.7% in Sax (n = 140); 7.8% in Bizerte (n = 141); 14.3% in Nabil (n = 140); 0 in Poseur (n = 140).

HIV prevalence in injecting drug users was: 2.9% in Tunis (n = 506); 0 in Bizerte (n = 301).

Plans for conducting surveys until 2017 include IBBSS in female sex workers, men who have sex with men and injecting drug users in 2013.

Size estimations

Population size estimations were conducted in 2009, and estimates were considerably higher than the previous estimates in 2005. In 2009 the national size estimate was 10 000 for female sex workers (compared to 1000 – 5000 in 2005), 8000 for injecting drug users (compared to 833-1250 in 2005) and 19 000 for men who have sex with men (compared to 5300-13 250 in 2005). According to data submitted in 2011, it was estimated that there were 25 500 female sex workers, 9000 injecting drug users and 29 000 men who have sex with men.

Population size estimates of men who have sex with men, injecting drug users and female sex workers are planned to be conducted again in 2013 and 2015.

Table 3.11 Results of mode of transmission analysis, Tunisia, 2012

Population group	New HIV infections (%)
IDU	5.5
Partners of IDU	0.4
Sex workers	0.6
Clients	0.8
Partners of clients	0.9
High risk MSM	51.1
Female partners of high-risk MSM	0.9
Low-risk MSM	33.0
Female partners of low risk MSM	0.7
Casual heterosexual sex	1.6
Partners CHS	2.6
Stable heterosexual	1.8
No risk (recent)	0.0

IDU: injecting drug users

MSM: men who have sex with men CHS: casual heterosexual sex

Mode of transmission analysis and HIV data triangulation

The national AIDS programme submitted the results of the mode of transmission analysis that was carried out in February 2012 (Table 3.11). Around half of new HIV infections are occurring in high-risk men who have sex with men, followed by low-risk men who have sex with men (33.0%).

HIV drug resistance monitoring and surveillance

The following data are available on HIV drug resistance surveillance and prevention:

- retention in care: 88.5% (n = 52 patients, measured at 4 sites in 2010) and 89.1% (n = 503, measured at 4 sites in 2012);
- pharmacy stock-out: 0 (2011); 16.7% (2012).

3.22 United Arab Emirates

There is no HIV surveillance work plan and no national monitoring and evaluation framework in the United Arab Emirates.

HIV and STI case reporting

There is a protocol for HIV case reporting. There is no surveillance of CD4 counts. In 2011, 57 HIV cases were reported, and of these 80.7% were in men. The most common transmission category was heterosexual (50.9%) followed by undetermined (36.8%).

Since the beginning of reporting, 935 HIV cases were reported and of these 69.5% were men. Even 43.4% of cases had an unknown transmission category followed by heterosexual transmission (25.5%).

HIV testing data

HIV prevalence in blood donors was 0.005% (n = 19~388) in 2009 and 0.004% in 2010 and 2011. HIV prevalence in tested tuberculosis patients was 0.9% in 2009 (n = 115), 3.0% in 2010 and 2.9% in 2011. In 2009 in 20 207 tested pregnant women no HIV was found, and in 2010 HIV prevalence was 0.004%, while in 2011 it was 0.007% (n = 54~552).

In 2011 prevalence of HIV, syphilis, HBV and HCV obtained from premarital testing $(n = 18\,379)$ was 0.04 for syphilis, 0.6% for HBV and 0.5% for HCV.

HIV prevalence surveys

No facility-based and community-based HIV surveillance activities are carried. There are no estimates of the size of key populations at higher risk.

Size estimations

It is planned to carry out size estimations of injecting drug users in 2013.

Mode of transmission analysis and HIV data triangulation

HIV data triangulation and mode of transmission study have not been conducted.

HIV drug resistance monitoring and surveillance

There is no surveillance of HIV drug resistance.

3.23 Yemen

In Yemen HIV case reporting seems to be integrated into the national communicable disease surveillance system, while other HIV surveillance activities are not.

HIV and STI case reporting

The national AIDS programme reported that there is a HIV case reporting system. A protocol for HIV case reporting does not exist. In 2010, 165 male and 72 female HIV cases were reported (of these, 9 cases were reported to have acquired HIV infection via blood transfusion/blood products). Of reported AIDS cases in 2010, 80 were in men and 37 in women.

In 2011, no data on HIV cases were submitted. No data were either submitted on reported STI cases.

HIV testing data

The prevalence of HIV in groups screened for HIV is: blood donors, 0.03%, 2009; 0.005%, 2010; 0.04%, 2011; and pregnant women, 0.16% (n = 4211) in 2009; 0.05% (n = 4420) in 2010; 0.05% (n = 1836) in 2011.

HIV testing is not routinely offered to tuberculosis and STI patients and pregnant women.

HIV prevalence surveys

Facility-based surveys among prisoners, tuberculosis patients and pregnant women are planned to be conducted in 2014 and 2016.

A community-based HIV survey was conducted in 2010 among female sex workers using RDS in Hodeida, and no case of HIV was detected. An earlier study in 2008 in female sex workers in Aden using RDS found HIV prevalence of 1.3%. In 2011, a survey in men who have sex with men found HIV prevalence of 5.5%.

During 2013–2017 the following surveys are planned: female sex workers in 2013 and 2016; injecting drug users in 2013; men who have sex with men in 2014 and 2017.

In 2010, a survey among pregnant women was carried out in four governorates using unlinked anonymous testing, and found HIV prevalence of 0.1%. Among these women, syphilis prevalence was 0.4%.

In 2009, an HIV survey was carried out among tuberculosis patients in four cities, and found a prevalence of 1.6%.

No facility-based and community-based surveillance activities were carried out in 2012.

Size estimations

Population size estimates were carried out in 2010, and it was estimated that there were 59 934 female sex workers and 44 320 men who have sex with men (the geographical coverage is not specified). In 2014, it is planned to carry out size estimations of female sex workers and men who have sex with men in five governorates.

Mode of transmission analysis and HIV data triangulation

Mode of transmission analysis and HIV data triangulation have not been conducted.

HIV drug resistance monitoring and surveillance

There is only one EWI indicator available for 2011: pharmacy stock-outs, which indicate that there were no ARV stock-outs (measured at 5 sites and included 538 patients).

4. Results 2: regional overview

4.1 HIV case reporting

All countries except South Sudan have some level of HIV case reporting, based on the information provided since 2009. Protocols for HIV case reporting are not available in Afghanistan, Libya, Sudan, Somalia, South Sudan and Yemen.

14 countries reported HIV cases for 2011 (Tables 4.1 and 4.2). The highest number of reported cases in 2011 in men was in the Islamic Republic of Iran (n = 1247) and in women was in Morocco (n = 380).

Heterosexual transmission was the most commonly reported mode of transmission in men in 2011 in the following countries: Tunisia (44.4%), United Arab Emirates (50.0%), Syrian Arab Republic (54.5%), Jordan (66.7%), Morocco (81.9%) and Kuwait and occupied Palestinian territories (100%). Somalia and Sudan did not report data by the mode of transmission. Injecting drug use was the most common mode of transmission in men in the Islamic Republic of Iran (73.5%) and in Afghanistan (60.2%). "Unknown" was the most commonly reported mode of transmission in men in Oman (35.8%) and Saudi Arabia (60.9%). Sex between men was reported as the most common mode of HIV transmission in Lebanon (50.0%).

In women in 2011, the most common mode of transmission was heterosexual in all countries with the exception of Saudi Arabia where "unknown" was the most frequently reported mode (56.8%). Injecting drug use cases in women were reported in the Islamic Republic of Iran (n = 32), Afghanistan (n = 2) and Morocco (n = 1) only.

With the exception of Morocco and Somalia, the male to female ratio in the HIV cases reported was considerable in 2011, ranging from 1.6:1 in Tunisia to 5.3:1. The ratio was even higher in Lebanon (however for more than 50% of cases reported in 2011 the information on sex was missing). That might suggest that substantial HIV transmission may occur via male-to-male sex or within male injecting drug user networks, or that a higher proportion of female than male HIV cases remain undetected and/or not reported. Also, gender differences might be due to HIV testing patterns. HIV testing might be more frequently carried out in men as part of, for example, testing of men who seek permits to work in other countries.

Data on the cumulative number of HIV cases reported since the beginning of reporting are available for 12 countries. In men, the highest cumulative number of reported cases was in the Islamic Republic of Iran (n = 22358) and in women the highest number was in Morocco (n = 2931).

Data on CD4 counts at the time of HIV diagnosis were reported by the national AIDS programmes from 12 countries for 2009–2011 (Table 4.3). Completeness of reporting⁹ in 2011 ranged from 6.0% in the Syrian Arab Republic to 100% in Morocco. In 2011, in all countries except the Syrian Arab Republic, more than 50% of patients had CD4 counts <350 cells/mm³ at the time of HIV diagnosis. This is to be expected considering the low availability and utilization of client- and provider-initiated HIV testing. In the Syrian Arab Republic completeness of CD4 count data in 2011 was very low.

Morocco, Oman and Tunisia were able to report CD4 count data in newly diagnosed HIV cases for all three years. The completeness varies considerably.

⁹ Completeness of CD4 count reporting is defined as the proportion of reported HIV cases that had CD4 count data reported within 3 months of HIV diagnosis out of all newly reported HIV cases.

Table 4.1 HIV cases reported by the national AIDS programmes in men in 2011, and cumulative total since the beginning of reporting

Country		Z	umber of F	IIV case	Number of HIV cases reported in 2011	2011				Cumulativ	e numbe	Cumulative number of HIV cases	es	
			1		Blood					1		Blood and		
	IDO	MSM	sexual	MTC	and blood	Unknown	Total	IDO	MSM	sexual	MTC	poold	Unknown	Total
					products							products		
Afghanistan ^a	20	1	13		0	19	83	909	1	29	7	56	649	1356
Iran, Islamic Republic of	916	I	66	38	0	194	1247	16883	I	1082	131	225	4037	22358
Jordan	0	3	∞	0	1	0	12	2	24	110	2	45	11	200
Kuwait	0	0	21	0	0	0	21	ı	ı	ı	ı	ı	I	ı
Lebanon ^b	Н	24	23	0	0	0	48	I	I	ı	ı	I	I	I
Morocco	8	35	303	10	2	12	370	151	373	2556	131	33	246	6421
Oman	2	22	30	4	0	34	95	28	194	434	41	20	201	948
Occupied Palestinian territory	0	0	2	0	0	0	2	2	4	31	1	10	6	57
Saudi Arabia	46	2	73	1	0	195	320	218	36	918	99	75	1452	2755
Somalia	I	I	I	I	I	I	264	I	I	I	I	ı	ı	1634
Sudan	I	I	ı	I	I	ı	239	I	I	ı	ı	ı	I	842
Syrian Arab Republic	0	9	30	0	2	14	55	18	47	311	∞	27	43	454
Tunisia	3	33	20	0	0	19	45	394	80	338	34	95	256	1194
United Arab Emirates	1	3	23	1	0	18	46	34	38	168	32	51	327	029

not available

^b 109 male and female HIV cases were reported in Lebanon but for 58 cases the information on mode of transmission and sex is missing ^a 117 male and female HIV cases were reported in Afghanistan, but for 10 cases the information on sex is missing

IDU: injecting drug users

MSM: men who have sex with men

MTC: mother to child

Table 4.2. HIV cases reported by the national AIDS programmes in women in 2011, and cumulative total since the beginning of reporting

				-							•	
Country		Nur	Number of HI\	4IV cases reported in 2011	ed in 2011			5	umulativ	Cumulative number of HIV cases	cases	
	IDO	Hetero- sexual	MTC	Blood; blood products	Unknown	Total	ngi	Hetero- sexual	MTC	Blood; blood products	Unknown	Total
Afghanistan	2	7	0	0	15	24	0	6	0	2	0	11
Iran, Islamic Republic of	32	241	24	0	44	341	231	1568	118	21	355	2293
Jordan	0	2	0	0	0	5	П	28	3	15	1	48
Kuwait	0	4	0	0	0	4	I	I	I	I	I	I
Lebanon	0	2	0	1	0	8	I	I	I	I	I	ı
Morocco	П	339	15	0	25	380	21	2519	09	35	296	2931
Oman	0	28	9	0	11	45	0	257	36	26	98	405
Occupied Palestinian territory	0	3	П	0	0	4	0	10	П	2	2	15
Saudi Arabia	0	29	3	0	42	74	2	289	29	37	279	674
Somalia	I	I	I	I	I	369	I	I	I	I	I	2007
Sudan	I	ı	I	I	I	114	I	I	I	I	I	809
Syrian Arab Republic	0	14	0	0	0	14	0	280	11	6	∞	308
Tunisia	0	27	П	0	0	28	22	376	45	24	45	512
United Arab Emirates	0	9	1	1	3	11	0	70	41	95	79	285
– not available												

not available
 IDU: injecting drug users
 MTC: mother to child

Table 4.3 CD4 count reporting in 2009, 2010 and 2011

Country	2009	60	2010	10	2011	11
	Proportion of all adult and adolescent HIV					
	cases newly diagnosed	cases newly	cases newly diagnosed	cases newly diagnosed	cases newly diagnosed	cases newly diagnosed
	count reported	that had CD4 counts	count reported	counts <350 cells/mm3	count reported	counts <350 cells/mm3
	(completeness of	<350 cells/mm3 at the	(completeness of	at the first HIV	(completeness of	at the first HIV
	reporting) (%)	first HIV diagnosis (%)	reporting) (%)	diagnosis (%)	reporting) (%)	diagnosis (%)
Bahrain	ı	ı	81	31	ı	ı
Djibouti	95	I	I	I	1	ı
Egypt	ı	ı	100	25	ı	ı
Jordan	I	ı	I	I	15	58
Morocco	100	52	71	79	100	55
Oman	35	73	53	27	29	64
Pakistan	06	36	I	I	I	I
Occupied	100	100	No HIV cases reported	No HIV cases reported	17	100
Palestinian						
territory						
Qatar	I	I	85	50	1	I
Saudi Arabia	06	22	100	12	ı	ı
Syrian Arab Republic	11	75	I	I	9	25 (1 out of 4 cases)
Tunisia	72	40	100	31	47	59
not available	ple					

Table 4.4 Reported cases of AIDS deaths in 2011, and cumulative total since the beginning of reporting

Country		er of cases ones of the contract of the contra	_		e total of reporte e the start of AID	d cases of AIDS S death reporting
	Male	Female	Total	Male	Female	Total
Iran, Islamic Republic of	394	24	418	4572	205	4777
Jordan	4	1	5	79	22	101
Kuwait	0	1	1	_	_	_
Occupied Palestinian territory	0	0	0	43	6	49
Oman	27	5	32	613	198	811
Saudi Arabia	14	5	19	325	100	425
Somalia	_	_	53	_	_	187
Syrian Arab Republic	11	2	13	149	37	186
Tunisia	19	7	26	342	152	529 ^a
United Arab Emirates	1	0	1	104	105	209

⁻ not available

4.2 Reporting of AIDS deaths

Data on the number of reported cases of AIDS deaths are available for 10 countries (Table 4.4). The highest number of AIDS deaths was reported in the Islamic Republic of Iran (n = 418), followed by Somalia (n = 53).

Since the beginning of AIDS death reporting, the highest number was reported in the Islamic Republic of Iran (n = 4777) followed by Oman (n = 811). The Islamic Republic of Iran contributed 65.7% in all cases of AIDS death since the beginning of reporting, which highlights the scale of under-reporting of AIDS death in other countries across the Region.

In several countries the number of cases of AIDS death reported in 2011 is small taking into account the size of the HIV epidemic and low HIV treatment coverage, suggesting underreporting.

4.3 Facility-based HIV surveillance and HIV prevalence from testing programmes

Table 4.5 shows 14 countries that have HIV prevalence data among tuberculosis patients since 2007. HIV prevalence is highest in surveys in South Sudan (14.7%), followed by Djibouti (11.3%) and Puntland and Somaliland in Somalia (8.2%).

In some countries HIV prevalence data are available from testing services (Islamic Republic of Iran, Lebanon, Morocco, Oman, Saudi Arabia and Sudan). In Sudan there was a substantial decrease in HIV prevalence, which should be interpreted with caution (selection bias and/or data quality issues should be considered). In the Islamic Republic of Iran, HIV prevalence in tuberculosis patients from testing services in 2011 (12.7%) differs considerably from the survey data (3.8%) in 2010.

^a includes 35 cases where the information on sex is not available.

Table 4.5 HIV prevalence among tuberculosis patients, 2007–2011

Country	2007	2008	2009	2010	2011
	(%)	(%)	(%)	(%)	(%)
Djibouti	13.6	11.8	7.9	11.3	7.9
					(n = 1773)
Egypt	_	_	-	0.08	_
				$(n = 18\ 000)$	
Iran, Islamic Republic	_	_	-	3.8	12.7
of					(n = 2300)
					tested)
Jordan	0.02	0	0	0	0
Lebanon	_	0.05	3.4	0	0.3
		(major cities)	(n = 523)	(n = 135)	(n = 632)
Morocco	0.4	0.4	0.4	0.8	2.2
					(n = 1856)
Oman (HIV testing data)	_	3.4	1.3	1.9	3.0
		(n = 237)	(n = 230)	(n = 216)	(n = 236)
Occupied Palestinian	0	0	0	0	
territory					
Saudi Arabia	0-0.3	0.3	_	0.4	1.9
	(6 provinces)	(6 provinces)		(HIV testing data)	(n = 1200)
Somalia	_	_	_	8.2	2.1
				(n = 878, 5 sites)	(n = 383,
				Puntland and	7 sites)
				Somaliland	South Central
					Zone
South Sudan	_	_	11.3	14.7	_
			(n = 3537)	(n = 515, 10 states,	
			,	survey)	
Sudan	_	_	12.3	6.8	1.7
			(n = 1749)	(n = 3636)	(n = 3500)
Tunisia	_	0.08	_	_	_
Yemen	1.6	_	1.6	_	_
	(3 cities)		(4 cities)		
– not available					

⁻ not available

Table 4.6 shows eight countries that have HIV prevalence data among STI patients available since 2007. To interpret this low HIV prevalence among STI patients (with the exception of Somalia), it is important to understand what the eligibility criteria for including STI patients in HIV surveys are, and to what extent these are truly STI patients.

Table 4.6 HIV prevalence among STI patients, 2007–2012

Country	2007 (%)	2008 (%)	2009 (%)	2010 (%)	2011 (%)	2012 (%)
Iran, Islamic	0	1.2	1.2	0	0	0
Republic of	(Isfahan)	(Isfahan)	(Isfahan)	(Isfahan)	(Isfahan)	(Isfahan)
Jordan	0	0	0	_	-	-
	(Amman)	(Amman)	(Amman)			
Morocco	0.4	0.3	0.3	0.3	2.0	-
	(n = 5702)	(n = 9133)			(n = 201)	
Oman	0.4	2.3	2.2	0	0.2	-
					(n = 6619)	
Occupied Palestinian territories	-	-	-	0	-	-
Saudi Arabia	0-2.8	0-2.8	_	0.03	1.1	_
	(6 provinces)	(6 provinces)		(n = 224)	(n = 1200)	
Somalia	6.3 (Somaliland) 2.3 (Puntland)		-	5.4 (n = 130, Bosaso, Puntland); 7.0 (n = 200, Hargeisa, Somaliland)	0.5 (n = 564, 8 sites, South Central Zone)	-
Tunisia	-	_	_	0	_	_

⁻ not available

HIV prevalence data from surveys among pregnant women or testing services are available since 2007 in 13 countries (Table 4.7). HIV prevalence was in this period the highest in South Sudan (3.0%), followed by Djibouti (1.6%) and Somaliland in Somalia (1.7%). In Bahrain and Oman, and in 2011 in Morocco, Yemen and Djibouti data were collected as part of HIV testing services.

Since 2007, HIV prevalence assessment surveys among prisoners were conducted in eight countries (Table 4.8). The highest prevalence was measured in the Islamic Republic of Iran (1.6%).

Facility-based HIV surveillance or HIV prevalence data collected from HIV screening programmes appear to be the main surveillance components in the following countries: Jordan, Saudi Arabia, Djibouti, Islamic Republic of Iran, Oman, occupied Palestinian territory and Iraq.

There is no facility-based HIV surveillance in Libya, Syrian Arab Republic and United Arab Emirates, and only to a limited extent in Afghanistan, Egypt, Pakistan and Tunisia. It is encouraging that some countries, such as Morocco and Oman, are establishing larger-scale HIV testing services in pregnant women and tuberculosis patients.

Table 4.7 HIV prevalence among pregnant women, 2007–2012

Country	2007	2008	2009	2010	2011	2012
	(%)	(%)	(%)	(%)	(%)	(%)
Bahrain (HIV testing data)	_	_	_	0 (<i>n</i> = 2394)	_	_
Djibouti	2.1	1.7	1.6	1.6	_	1.0
						(n = 9343)
Iran, Islamic	0	0	0	0	0.1	0
Republic of	(3 regions)	(2 regions)	(2 regions)	(3 regions)	(2 regions)	(2 regions)
Morocco	0.08		0-0.9	0.1-2.7	0.1	
	(n = 16 442)		(at 30 sites)	(at 6 sites with the highest HIV prevalence in 2009)	(n = 2995)	
Oman	_	_	0.03	0.04	0.03	_
			(34 400 pregnant women 50% of all pregnant women)	(n = 67 84)	(n = 72 253)	
Pakistan	_	_	_	0.05	_	_
				(<i>n</i> = 26510, 42 sites in 9 districts)		
Occupied Palestinian territory	-	0	0	0	-	-
Saudi Arabia	0	0	_	_	_	_
	(6 provinces)	(6 provinces)				
Somalia	1.3, Somaliland		-	1.7, Somaliland (n = 1776);	0.3 (n = 3200,	-
	0.5, Puntland			0.4, Puntland (n = 1518)	South Central Zone)	
Sudan	_	_	0.2	_	_	_
			(35 sites)			
South Sudan	3.4	_	3.0	_	_	_
	(6 states)		(10 states)			
	n = 2364		n = 6173			
United Arab	_	_	0.005	0	0.07	_
Emirates			(20 207 tested pregnant women)	(21 347 tested pregnant women)	(54 552 tested pregnant women)	
Yemen	0.2	_	_	0.1	0.05	-
	(2 sites)			(4 sites)	(1836 tested women)	

⁻ not available

Table 4.8 HIV prevalence among prisoners, available data during 2007–2011

Country	2007	2008	2009	2010	2011	2012
	(%)	(%)	(%)	(%)	(%)	(%)
Afghanistan	-	-	0.6-1.6	_	-	0.5-0.8
			(Kabul and Hirat)			(Kabul and Hirat)
Iran, Islamic Republic of	1.5	2.8	1.6	1.4	0.7	1.6
Jordan	0	0	0	0	-	-
Lebanon	0.2	_	_	_	_	_
	(two biggest prisons)					
Morocco	0.5	0.8	0.4 (0-1.8)	0.5 (0-7.7)	_	_
	(n = 2778)	(n = 2341)				
Oman	0.4	0.3	0.8	0.3	0.3	_
(routine testing of prisoners)		(n = 1224)	(n = 1351)	(n = 1581)	(n = 1394)	
Occupied Palestinian territory	-	-	-	0	-	-
Saudi Arabia	_	_	_	0.02	1.3	_
				(n = 240)	(n = 1200)	
				In Asier and Riyadh		

⁻ not available

4.4 Community-based bio-behavioural surveys among key populations at higher risk

There are 12 countries where implementation of community-based IBBSS has been successful in recent years:

- Pakistan in multiple cities in 2005, 2007, 2008 and 2011: female sex workers (using respondent driven sampling and cluster-based sampling), injecting drug users (cluster-based sampling), male sex workers (RDS), *hijra* sex workers (network-based);
- Tunisia in several cities in 2009 and 2011: injecting drug users (RDS), men who have sex with men (snowball, time location sampling) and female sex workers (snowball, TLS);
- Lebanon in 2007 and 2011 (only in men who have sex with men): injecting drug users, men who have sex with men and female sex workers (RDS);
- Libya in Tripoli in 2011 in injecting drug users, men who have sex with men and female sex workers;
- Egypt in three cities in 2006 and 2011: injecting drug users and men who have sex with men (RDS); female sex workers (snowball), street children (TLS);
- Islamic Republic of Iran in several cities in 2007, 2009, 2010, 2011: injecting drug users (TLS and convenience sampling), female sex workers (convenience sampling, RDS), street children (TLS), homeless (convenience);
- Afghanistan in several cities 2009, 2011, 2012: female sex workers, injecting drug users, men who have sex with men (RDS), transport workers;
- Yemen in two cities in 2008 and 2010: female sex workers (RDS), men who have sex with men (convenience sampling);

- Occupied Palestinian territories, in East Jerusalem in 2010: injecting drug users (RDS);
- Somalia in one city in 2007: female sex workers (RDS);
- Sudan in 2008 and 2011: female sex workers in 14 cities (RDS) and men who have sex with men in 12 cities (RDS);
- Morocco in 2011 in several cities: men who have sex with men, female sex workers, injecting drug users (RDS);

Table 4.9 HIV prevalence among female sex workers, 2007–2012

Country	2007 (%)	2008 (%)	2009 (%)	2010 (%)	2011 (%)	2012
Afghanistan	0.2;	_	0; Kabul;	_	_	0-0.9
	Kabul, JalaAbad and Mazarisharif		RDS			(Kabul, Hirat, Mazar)
Djibouti ^a	19.7	20.3	15.4	_	_	_
Egypt ^b	_		_	0 (Cairo)	_	_
Iran, Islamic	_	-	_	3.8	4.5	_
Republic of				(reported as national-level)	(reported as national-level)	
Jordan	_	_	0	_	_	_
			4 sites; RDS			
Lebanon	0;	_	_	_	_	_
	2 cities; RDS					
Libya	-	_	_	_	16.0	_
					(Tripoli, RDS)	
Morocco	2.6	2.1	2.4	2.7	0-5.1;	_
					4 cities, RDS	
Pakistan	0.02;	-	0.9	_	0.6 (0-1.9);	-
	12 cities; network and cluster-based				12 cities; RDS and snowball	
Somalia	5.3;	_	_	_	_	_
	Somaliland; RDS					
Sudan	_	0.1–0.9;	_	_	0–7.7,	_
		2 cities; RDS			14 cities, RDS	
Tunisia	_	_	0.4;	_	0.6	_
			several		(0-1.2);	
			sites; RDS		3 cities, TLS	
Yemen	-	1.3; Aden; RDS		0; Hodeida; RDS		-

⁻ not available

^a Among female sex workers, surveys in Djibouti are facility-based

^b In 2006, HIV prevalence was 0.8% (Cairo)

HIV prevalence surveys among female sex workers were carried out in 13 countries (Table 4.9), and HIV prevalence was the highest in Libya (16%), Djibouti (15.4%), followed by one city in Sudan (7.7%) and Somalia (5.3%). In Afghanistan, Egypt, Jordan, Lebanon, Pakistan, Tunisia and Yemen HIV prevalence is below 4% in female sex workers. The survey in Libya included only 69 female sex workers. Surveys in Djibouti are done as facility-based surveys, and no survey have been done since 2009.

HIV prevalence data in injecting drug users are available in 10 countries, and the highest measured HIV prevalence is in Libya (87% in Tripoli), followed by Pakistan (3.3-52.5%), and a city, Nador, in Morocco (25%). Saudi Arabia has data on injecting drug users from facility-based surveillance. In 2010, HIV prevalence was 0.006% (Table 4.10).

Table 4.10 HIV prevalence among injecting drug users, 2007–2011

Country	2007 (%)	2008 (%)	2009 (%)	2010 (%)	2011 (%)	2012 (%)
Afghanistan	0–3.1; Kabul, JalalAbad and Mazarisharif	-	1.0–18.0; Kabul, Hirat and Mazarisharif; RDS	-	7.2, Kabul, RDS	0.3–13.3 (Kabul, Hirat, Mazar, Jalal Abad and Charikar); RDS
Egypt ^a	-	-	_	6.8, Cairo; 6.5, Alexandria; RDS	-	-
Iran, Islamic Republic of	13.3	-	-	13.4 (reported as national-level)	15.0 (reported as national-level)	-
Jordan	-	-	0 4 sites; RDS	_	-	_
Lebanon	0 2 cities; RDS	-	-	_	-	-
Libya	-	-	-	_	87 Tripoli, RDS	-
Morocco	-	-	_	_	0.4 and 25.0; 2 cities, RDS	-
Pakistan	15.8 (0–51.3); 12 cities; cluster-based	21.0 (12.3–30.5); 8 cities; cluster- based	-	-	27.2 (3.3–52.5); 16 cities; cluster-based	-
Occupied Palestinian territory	-	-	-	0 East Jerusalem; RDS		-
Tunisia	-	-	3.1 several cities; RDS	-	2.4 (0–2.7) 2 cities; RDS	-

not available

^a In 2006, HIV prevalence was 0.6% (Cairo) in an RDS survey.

Table 4.11 HIV prevalence among men who have sex with men, 2007-2011

Country	2007 (%)	2008 (%)	2009 (%)	2010 (%)	2011 (%)	2012 (%)
Afghanistan	_	_	_	_	_	0.4 (RDS, Kabul)
Egypt ^a	-	_	-	6.9, Alexandria; 0, Luxor; RDS	_	-
Jordan	_	_	0.2;	_	_	_
			4 sites, RDS			
Lebanon	3.6;	_	_	_	0.7;	_
	2 cities; RDS				1 city, RDS	
Libya	_	_	-	_	3	_
					(Tripoli, RDS)	
Morocco	_	_	_	_	2.8-5.7;	_
					2 cities; RDS	
Pakistan			_	_		
Male sex workers	1.5 (0–7.5); 12 cities; RDS	0.9 (0–3.1); RDS; 6 cities			1.6 (0–5.9), RDS; 11 cities	-
Hijras	1.8 (0–14.0); 12 cities; network sampling	6.4 (0–27.6); network sampling; 6 cities	-	-	5.2 (0–14.9), network sampling, 11 cities	-
Sudan	2.3	_	-	-	0–6.3; 12 cities, RDS	-
Tunisia	-	-	4.9; several cities; RDS	-	13.0 (0–16.0), 6 cities TLS	-

⁻ not available

HIV prevalence data in men who have sex with men are available in nine countries (Table 4.11). According to the latest available data, HIV prevalence is highest in Tunisia (0-16%), followed by Egypt (6.9% in 2010 in Alexandria) and Sudan (0-6.3%).

In terms of other surveys, an HIV survey using TLS was conducted in street children in the Islamic Republic of Iran in 2010 and found HIV prevalence of 4.5%. In Cairo in 2010 HIV prevalence in street children was 0.5%.

There are no community-based IBBSS among key populations at higher risk in Bahrain, Djibouti, Iraq, Kuwait, Oman, Qatar, Syrian Arab Republic, Saudi Arabia, South Sudan and United Arab Emirates.

4.5 Population size estimates

Some data on population size estimates are available from 11 countries. national AIDS Programs of the Islamic Republic of Iran, Morocco, Pakistan and Tunisia reported national-level size estimates of groups at higher risk of HIV, while in the other countries they are available at a city-level (Table 4.12). It is unclear what level the size estimates in Yemen refer to.

^a In 2006 HIV prevalence was 6.2% in Alexandria (RDS).

Table 4.12 Most recent estimates of key populations at higher risk

Country	IDU	FSW	MSM	Male sex workers	Hijra sex workers	Clients of FSW	Prisoners
Afghanistan	16 719	4934	1729 (Kabul)				
	(4 cities)	(2 cities)					
Djibouti		2218	873			9983	
		(Djibouti ville)	(Djibouti ville)			(Djibouti ville)	
Egypt	85 000 (Greater Cairo)		150 000 (Greater Cairo)				
Iran, Islamic Republic of	250 000- 260 000	80 000					4 080 152
Morocco	18 500	67 000	45 000			400 000	60 000
Pakistan	99 000	136 000		62 636	42 877		
Saudi Arabia	10 000						
Somalia		614 (Berbera and Bosasso)					
South Sudan		2511 (Juba); 375 (Yambio)					
Tunisia	9 000	25 500	29 000				
Yemen		58 934	44 320				

IDU: injecting drug users FSW: female sex workers

MSM: men who have sex with men

The following methods were used in the site estimations conducted in 2011 and 2012

- multiplier in Afghanistan, Djibouti and Yemen;
- network scale-up in the Islamic Republic of Iran;
- mapping with enumeration in Pakistan and South Sudan (however, for South Sudan the exact method used needs to be confirmed);
- capture-recapture in Djibouti.

No information was provided about the methods used in Morocco, Somalia and Tunisia.

Bahrain, Iraq, Jordan, Kuwait, Libya, Lebanon, Oman, Qatar, occupied Palestinian territories, Saudi Arabia, Sudan, Syrian Arab Republic and United Arab Emirates do not have size estimates of any group at higher risk of HIV.

4.6 HIV drug resistance monitoring and surveillance

Studies of acquired and transmitted drug resistance are available from Saudi Arabia and Islamic Republic of Iran from 2010 and 2011. A survey of acquired HIV drug resistance in Saudi Arabia (2010) found that of 1314 patients tested: 97% achieved viral load suppression after 12 months; 0.3% had HIV drug resistance at baseline; and 3% had detectable viral load and HIV drug resistance mutations at 12 months. A survey of transmitted HIV drug resistance in the

Islamic Republic of Iran (2011) found that of 51 patients tested at 3 sites, 2 patients had resistance against NRTI. Eligibility criteria were: newly diagnosed cases aged <30 years and CD4 count >500 cells/mm³, without history of pregnancy or ARV treatment.

Some information on early warning indicators is available in seven countries (Table 4.13). Data submitted by Jordan were not included since they were collected in 11–14 patients in 2012.

Retention in care measured at sentinel sites ranged from 82.6% in the Islamic Republic of Iran to 100% in the occupied Palestinian territories (measured in only 21 patients).

It is encouraging that no pharmacy stock-outs were reported in Lebanon, Morocco, the Islamic Republic of Iran and Pakistan.

Information on the proportion of patients whose viral load was <1000 copies/ml 12 months after treatment in 2012 was available only from Oman and was as low as 35%.

The following countries have no data on HIV drug resistance, including early warning indicators: Afghanistan, Bahrain, Djibouti, Iraq, Libya, Pakistan, Qatar, Sudan, Syrian Arab Republic and United Arab Emirates.

Yemen and Morocco have data only on ARV stock-outs.

Table 4.13 HIV drug resistance early warning indicators, 2012

Indicator	Indicator description	Lebanon	Islamic Republic of Iran	Morocco	Oman	Occupied Palestinian	Somalia	Tunisia
						territories		
1. On-time	Percentage of ART patients	92.3%	After 3 months on ART:	I	ı	100%	I	ı
pill pick up	picking up all prescribed ARV	(n = 445,	62.8% by self-report and			(n = 21,		
	drugs on time (Baseline + 1	one site)	60.6% by pill count method $(n = 73)$: done at one clinic			2 sites)		
001+00+00	Dorrostano of adulta and	OE 10/	02 69/	ı		100%	700 CO	00 10/
ז. הפנפוונוטוו	reiceiliage of audits affu	93.170	07.0%	I	I	T0070	02.070	03.1%
in care	children known to be alive and on treatment 12 months after initiation of ART	(n = 490, one site)	(n = 1105, one site)			(n = 21, 2 = 21, 2 = 21, 3 = 2)	(<i>n</i> = 37, data for 4 out of 11 ART sites)	(n = 503, measured) at 4 sites)
3. Pharmacy stock-outs	Percentage of months in a designated year in which there were no ARV drug stock-outs	100% (one site)	100%	100%	1	100%	ı	16.7%
4. Prescribing	Percentage of adults and	0	I	ı	ı	0	0	I
practices	children prescribed or picking up mono or dual ART	(one site)						
5. Virological	Percentage of patients	ı	I	I	35%	I	no viral load	ı
suppression	receiving ART at the site after the first 12 months of ART whose viral load is <1000						assessment capacity	
	copies/ml							
-1-1-1:								

not available

4.7 STI surveillance data

STI prevalence among pregnant women

STI prevalence among pregnant women shows that syphilis prevalence data in pregnant women are available in nine countries (Table 4.14). Syphilis prevalence is the highest in South Sudan (9.9%), followed by South Central Zone in Somalia (8.3%).

STI prevalence among key populations at higher risk

STI prevalence data among high risk groups are available in seven countries (Table 4.15). There is high prevalence of HCV and syphilis in injecting drug users in Afghanistan, and substantial prevalence of STIs in female sex workers in the Islamic Republic of Iran and Morocco.

Table 4.14 Syphilis prevalence among pregnant women, 2007–2011

Country	2007	2008 (%)	2009 (%)	2010 (%)	2011 (%)
Djibouti	0.8	-	0.2	_	_
Iraq	0	0	0	0	_
	(n = 17 677)	(n = 17 871)	(n = 22 486)	$(n = 57 \ 134)$	
Morocco	1.0		1.1	1.1	_
	(n = 16 442)		(n = 15 547)	(6 ANC sites with the highest HIV prevalence)	
Oman	0.2	0.1	_	_	0.05
	(99.4% of women are tested)	(99.5% of women are tested)			
Occupied Palestinian territory	-	-	0	0	-
Somalia	2.0 (Somaliland)	-	_	1.4 (0-3.8)	8.3,
	1.9 (Puntland)			at 9 sites,	South Central
				Puntland and	Zone
				Somaliland	(n = 3200)
Sudan	-	-	1.3	_	_
			(35 ANC sites)		
South Sudan	11.2	-	9.9	_	_
	(6 states)		(10 states)		
Yemen	2.0	-	_	0.4	_
	(2 cities)			(4 cities)	

⁻ not available

Table 4.15 Prevalence of STIs, hepatitis B and C in high risk groups, 2007–2011

Country	Syphilis (%)	Neisseria gonorrhoeae (%)	Chlamydia trachomatis (%)	HSV-2 (%)	HBV (%)	HCV (%)	Year
Afghanistan ^a		. ,	. ,				
FSW	5.4	_	_	9.8	3.5	0.8	2009
IDU				4.4-20.5	5.9-8.8	25.5-57.9	
Prisoners	0.6-1.7			0.6-1.4	4.1-7.0	1.7-4.1	
Afghanistan ^a							
FSW	0-0.9	_	-	_	1.0-3.5	0-1.7	2012
IDU	3.3-6.9				3.2-8.3	9.5-70.0	
MSM	0.8				4.9	1.4	
Prisoners	0.8				4.8-6.0	1.4-4.6	
Iran, Islamic Republic of							
FSW	7.1 (VDRL, Kerman)	0, Kerman 1.4, Shiraz	2.9, Kerman 9.3, Shiraz	14.2, Kerman, (HSV-1 &2); 9.3, Shiraz	-	-	2010
Morocco			, -	, .			
FSW	14.2-22.0,	_	_	_	_	_	2011
MSM	4 cities						
	10.4–11.5,						
	2 cities						
Pakistan							
FSW	2.8	2.0	1.7	6.0	_	17.3	2008
IDU	7.6	9.8	4.9	8.8			
MSW	9.6						
Somalia							
FSW	3.1	_	_	_	_	_	2007
Tunisia							
FSW	2.7	_	_	_	_	_	2008
Yemen							
FSW	5.0	_	_	_	_	_	2008

[–] not available

FSW: female sex workers IDU: injecting drug users

MSM: men who have sex with men

^a The report on the studies in Afghanistan described that rapid tests were used to diagnose infections, but does not specify types of tests used. (*Integrated Behavioural and Biological Surveillance in Afghanistan: Year 1 Report.* Johns Hopkins University. Bloomberg School of Public Health. HIV Surveillance Project. *Kabul: 2010*)

Table 4.16 Number of reported cases of urethral discharge and genital ulcer, 2011–2012

Country	Number of case	s in men	Number of cases in women	
	Urethral discharge	Genital ulcer	Genital ulcer	
Djibouti	539	120	10	
Iran, Islamic Republic of	8265	2612	101492	
Morocco	65830	5617	9971	
Oman	120	_	_	
Occupied Palestinian territory	64	_	1453	
Saudi Arabia	946	82	201	
Somalia	2380		7103	
Sudan	3655	645	660	
Syrian Arab Republic	268	56	1553	
Tunisia	128	3	238	

not available

STI case reporting data

Table 4.16 shows the number of reported cases of urethral discharge and genital ulcers in men and women in 2011 and 2012. The highest number of cases of urethral discharge and genital ulcer in men were reported in Morocco, while the highest number of cases of genital ulcer in women was reported in the Islamic Republic of Iran.

In some countries, such as the Islamic Republic of Iran, Morocco, Saudi Arabia, Syrian Arab Republic and Tunisia the reported number of cases of genital ulcer is strikingly higher in women compared to men, which is probably due to women accessing (public) services that participate in surveillance reporting.

The following countries provided data on STI syndromes disaggregated by age group (<24 and >25): Islamic Republic of Iran, Occupied Palestinian territories, Saudi Arabia, Sudan, Syrian Arab Republic and Tunisia.

Data on etiologically confirmed STI cases were available for the Islamic Republic of Iran, Oman, occupied Palestinian territories and Saudi Arabia. There are major difficulties in interpreting these data since the number of reported cases is small and the quality of STI diagnostics used in different countries may vary.

Prevalence of HIV, syphilis, HBV and HCV in blood donors, 2011

HIV prevalence in blood donors ranges from 0 in the occupied Palestinian territories to 0.3% in Somalia. Syphilis and HBV prevalence was also the highest in Somalia (1.7% and 6.4%, respectively) while HCV prevalence was highest in Afghanistan (1.1%) (Table 4.17).

4.8 Mode of transmission analysis

The results of mode of transmission analyses conducted in 2010–2012 suggest various patterns of current HIV transmission (Table 4.18). In Djibouti, low-risk heterosexuals contribute most to HIV incidence (38.9%), while in the Islamic Republic of Iran it is injecting drug users (56.0%) and in Tunisia high-risk men who have sex with men (51.1%). In Tunisia in 2010, no case of HIV was reported in men who have sex with men suggesting difficulties in HIV case report data interpretation. This is relevant for other countries as well. In Morocco, commercial

Table 4.17 Prevalence of HIV, hepatitis B and C and syphilis in blood donors, 2011

Country	HIV (%)	Syphilis (%)	HBV (%)	HCV (%)
Afghanistan	0.02	0.6	3.9	1.1
Iran, Islamic Republic of	0.004	0.001	0.2	0.06
Morocco	0.02	0.04	1.1	0.2
Oman	0.01	_	_	_
Occupied Palestinian territory	0	_	1.3	0.2
Saudi Arabia	0.03	_	_	_
Somalia	0.3	1.7	6.4	0.4
Syrian Arab Republic	0.004	0.2	1.7	0.6
United Arab Emirates	0.004	_	_	_
Yemen	0.04	_	_	_
– not available				

Table 4.18 Proportion of new HIV infections attributed to various key populations at higher risk according to mode of transmission analysis in the Islamic Republic of Iran (2011), Djibouti (2011), Morocco (2010) and Tunisia (2012)

Population group	Djibouti (%)	Iran, Islamic Republic of (%)	Morocco (%)	Tunisia (%)
IDUs	-	56.0	5.7	5.5
Partners of IDUs	-	12.2	0.8	0.4
FSW	8.4	1.3	14.4	0.6
Clients of FSW	4.3	4.2	23.8	0.8
Partner of clients of FSW	7.5	2.8	7.8	0.9
Other high-risk sub-populations	-	14.9	_	_
Low-risk heterosexual	38.9	8.1	26.3	1.8
MSM	4.8	_	13.5	_
High-risk MSM	-	_	_	51.1
Low-risk MSM	-	_	_	33.0
Female partners of high-risk MSM	0.3	_	0.8	0.9
Female partners of low-risk MSM	-	_	_	0.7
Those who have casual heterosexual sex	21.8	_	2.4	1.6
Partners of those who have casual heterosexual sex	11.3	_	4.4	2.6
Medical injections	0.6	_	_	_
Blood transfusion	0.4	-	_	_

⁻ not available

IDU: injecting drug use FSW: female sex workers

MSM: men who have sex with men

heterosexual sex networks contribute to 46.0% of HIV incident infections followed by men who have sex with men (13.5%) and injecting drug users networks (6.5%).

4.9 Planning of implementation of HIV surveillance activities until 2017

The following countries reported plans for implementation of HIV surveillance activities:

 Afghanistan: there are plans to conduct population size estimates in female sex workers, men who have sex with men and injecting drug users in 2015 and for conducting an HIV survey in pregnant women in 2013;

- Djibouti: there are plans for population size estimates and IBBSS in injecting drug users and female sex workers in 2013. Facility-based HIV surveillance surveys are planned for TB and STI patients and pregnant women annually in 2013–2017. These were planned for 2011 and 2012 but did not take place;
- Islamic Republic of Iran: there is adequate planning of HIV surveillance system;
- Lebanon: IBBSS is planned in men who have sex with men and a survey in PLHIV;
- Libya: planning is adequate, but ambitious considering the current low level of surveillance system development;
- Morocco: population size estimates of injecting drug users, men who have sex with men and female sex workers are planned for 2013 and IBBSS in the same groups for 2014 (these two activities should be done at the same time);
- Occupied Palestinian territories: It is planned to conduct an IBBSS in injecting drug users in 2013; No population size estimates are planned;
- Oman: it is planned to conduct an IBBSS in injecting drug users in 2013. This was planned for 2011 and was not implemented. No population size estimates are planned;
- Saudi Arabia: it is planned to conduct an IBBSS and population size estimates in injecting drug users in 2013;
- Somalia: plans for surveillance activities are limited and planned only until 2014;
- Syrian Arab Republic: it is planned to conduct an IBBSS in female sex workers and men who
 have sex with men in 2013. There are no plans for population size estimates and facilitybased surveillance;
- Morocco, Saudi Arabia, Oman: facility-based surveillance and programmatic data collection is well planned in tuberculosis and STI patients and pregnant women;
- Sudan: surveillance activities are well planned, though no survey/assessment is planned in injecting drug users;
- Tunisia: there are plans for IBBSS and facility-based surveillance until 2014;
- United Arab Emirates: It is planned to conduct size estimates of injecting drug users in 2013. There are no plans for facility-based HIV surveillance and IBBSS;
- Yemen: planning of HIV surveillance is adequate.

4.10 Obstacles to implementation of HIV surveillance

Obstacles to implementation of HIV surveillance as reported by national AIDS programme managers in 2012 can be grouped into several themes:

- insufficient funds (Afghanistan, Djibouti, Jordan, Lebanon, occupied Palestinian territories, Somalia, South Sudan, Yemen);
- lack of technical capacities
 - insufficient expertise of national AIDS programme and regional staff in surveillance (Afghanistan, Djibouti, Jordan, Libya, South Sudan, Syrian Arab Republic);
 - lack of capacity-building (Syrian Arab Republic);
 - lack of capacity in conducting HIV incidence surveys and drug resistance monitoring (Morocco);

- lack of HIV surveillance plans and other plans, documents and tools
 - lack of an HIV surveillance work plan (Jordan);
 - lack of an monitoring and evaluation plan (United Arab Emirates);
 - lack of HIV surveillance guidelines and tools and strategic plans for HIV surveillance (Somalia);
 - no updated national HIV strategic plan and operational policy (Kuwait);
- low number of staff and staff turn-over
 - lack of staff (Afghanistan, Jordan, Lebanon, Tunisia, United Arab Emirates);
 - staff turn-over (Djibouti, Saudi Arabia);
 - instability in the administration and the institutions in the last year (Libya);
- lack of certain HIV surveillance components
 - lack of monitoring of HIV drug resistance (Jordan, Morocco, Somalia);
 - incomplete HIV case reporting and under-reporting of HIV cases (Lebanon, Saudi Arabia, Sudan);
 - lack of population size estimates of key populations at higher risk (Jordan, Oman);
 - no adequate HIV surveillance in place (Oman, United Arab Emirates); Lack of incidencebased surveillance (Morocco);
 - bridging groups not included in surveillance (Morocco);
 - challenges with STI case reporting system (Syrian Arab Republic);
 - weak monitoring and evaluation of HIV surveillance (Jordan);
- stigma and difficulties in accessing high risk groups (Islamic Republic of Iran, Oman, Saudi Arabia);
- difficulties in collaboration with partner agencies (Libya, South Sudan, Syrian Arab Republic);
- security issues that limit the field activities (Afghanistan, Libya);
- political instability (occupied Palestinian territories); sociopolitical challenges (Tunisia);
- limited geographical scope of surveillance (Morocco);
- inadequate data quality (Afghanistan);
- insufficient laboratory capacities for STIs (Islamic Republic of Iran);
- delay in approving the surveillance budget (Libya);
- delay in data submission (Saudi Arabia);
- lack of country-level assessment that would allow development of an HIV surveillance system (Sudan);
- lack of integration of HIV surveillance into a wider communicable disease surveillance system (Sudan);
- low tuberculosis patient load and difficulties in achieving a sample size in an HIV survey in tuberculosis patients (Somalia);
- lack of supervision of surveillance activities (Tunisia).

4.11 Needs for capacity development in HIV surveillance

According to the national AIDS programme managers, capacity-building of surveillance staff is needed in the following areas (grouped by frequency of mention):

- Surveillance among key populations at higher risk (Kuwait, Libya, Morocco, Oman, Saudi Arabia, South Sudan, Syrian Arab Republic, Yemen);
- HIV drug resistance prevention and assessment (Morocco, Sudan, Oman, Somalia);
- Population size estimates (Sudan, United Arab Emirates, Yemen);
- Facility-based HIV surveillance (Saudi Arabia, South Sudan);
- Monitoring and evaluation (Syrian Arab Republic, Tunisia);
- General HIV surveillance (Djibouti, United Arab Emirates);
- Strengthening skills of nongovernmental organizations to be involved in HIV surveillance (Libya);
- Incidence-based HIV surveillance (Morocco);
- HIV treatment monitoring (Oman);
- Mode of transmission analysis (Somalia);
- HIV case reporting (South Sudan, Yemen);
- Data management and data triangulation (South Sudan);
- Development of a laboratory-based STI reporting system (Islamic Republic of Iran).

5. Discussion

5.1 Successes in HIV surveillance

There are several encouraging developments in the Region.

- 1. Data on trends in HIV prevalence are emerging in:
 - Djibouti: pregnant women, tuberculosis patients and female sex workers (but only from 2007-2010);
 - Morocco: long-term facility-based surveillance among pregnant women and tuberculosis patients;
 - Pakistan: injecting drug users, male sex workers and *hijra* sex workers since 2005;
 - Islamic Republic of Iran: injecting drug users and prisoners since 2007.
- 2. A number of countries have implemented HIV surveys in high-risk groups using quasiprobabilistic sampling methods in 2010-2012 and expanded geographical coverage of HIV surveillance systems:
 - Sudan: baseline IBBSS using RDS in female sex workers were completed in 14 cities and in men who have sex with men in 12 cities in 2011;
 - Afghanistan: IBBSS using RDS were done in 2012 in female sex workers (three cities), injecting drug users (five cities) and men who have sex with men (one city);

- Morocco: baseline IBBSS using RDS were done in female sex workers (five cities), injecting drug users (two cities) and men who have sex with men (two cities) in 2010– 2011:
- Libya: baseline IBBSS using RDS in female sex workers, men who have sex with men and injecting drug users in Tripoli.
- 3. HIV case reporting data were submitted for 2011 for 14 countries. In Somalia and Sudan HIV case reporting data are not available by probable mode of transmission.
- 4. Data on CD4 counts at the time of HIV diagnosis are available in 12 countries for 2009-2011. Data show substantial variation over time. Survey respondents noted that it was unclear whether data on CD4 counts should refer to all patients in care or only to newly diagnosed HIV patients.
- 5. Estimations of the population sizes of key populations at higher risk were conducted in several countries in 2011-2012: Afghanistan (female sex workers, men who have sex with men, injecting drug users in three cities), Djibouti (female sex workers, men who have sex with men and clients of female sex workers in one city), Morocco (all key groups), South Sudan (female sex workers in two cities), Somalia (female sex workers and clients in two cities), Tunisia (all key groups), and Yemen (female sex workers and men who have sex with men).
- 6. Mode of transmission analysis was conducted in the Islamic Republic of Iran, Morocco, Djibouti and Tunisia in 2010-2012
- 7. Some countries are expanding the coverage of provider-initiated HIV testing in pregnant women and tuberculosis patients and use these data sources (Morocco, Oman) instead or in concert with unlinked anonymous surveillance in pregnant women. Some countries with established HIV epidemics in injecting drug users started to collect HIV prevalence data in pregnant women (Islamic Republic of Iran, Pakistan).

5.2 Key weaknesses of HIV surveillance

- IBBSS have not been carried out in any population in Bahrain, Djibouti, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, South Sudan, Syrian Arab Republic, United Arab Emirates.
- Data on population size estimates are lacking in Bahrain, Egypt (size estimates available only for greater Cairo), Iraq, Jordan, Kuwait, Libya, Lebanon, Oman, Qatar, occupied Palestinian territories, Sudan and United Arab Emirates.
- No country has HIV prevalence trend data in men who have sex with men, with the exception of Pakistan which has trend data in male sex workers and *hijra* sex workers.
- Among reported HIV cases, the most frequently reported mode of transmission is heterosexual, which is in contrast with an overall high male to female ratio in reported HIV cases.

Lack of data on HIV in bridging groups creates a "missing link" in some parts of the Region
where there is already evidence that HIV transmission has progressed beyond the core
groups or where the size of the epidemic in the core groups is large such as South Sudan,
Djibouti and Somalia, southern Morocco, some parts of Islamic Republic of Iran and perhaps
some parts of Pakistan.

6. Conclusions and way forward

6.1 Conclusions

There is increasing evidence of HIV infection being firmly established in at least one of the key populations at higher risk of HIV in 10 countries. Lower-risk populations show elevated HIV prevalence in a few countries, that is, in South Sudan, Djibouti and some parts of Somalia. In these highest burden countries, data collected in pregnant women show that HIV prevalence might be decreasing. Of note is the increase in HIV prevalence in injecting drug users in the Islamic Republic of Iran and Pakistan, in men who have sex with men in Tunisia, and in *hijra* sex workers in Pakistan, as well high HIV prevalence in injecting drug users found in baseline IBBSS in Libya and Morocco.

The main positive development is that a number of countries implemented multicentric IBBSS in key populations at higher risk of HIV mainly using a quasi-probabilistic method of RDS, which is an effective tool for sampling hard-to-reach groups that are socially well networked (4). In addition, the geographical coverage of HIV surveillance systems is substantial in Morocco, Pakistan, Islamic Republic of Iran and Sudan.

The key challenge is in the lack of IBBSS in any of the high risk groups in Bahrain, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, South Sudan, Syrian Arab Republic and United Arab Emirates. Furthermore, the absence of estimates of the size of the key populations at higher risk of HIV in a number of countries hinders the assessment of the needs for HIV prevention and measurement of coverage with prevention services.

No country has HIV prevalence trend data in men who have sex with men. Difficulty in reaching men who have sex with men in surveillance is reflected in HIV case reporting data where undetermined mode of transmission occurs frequently in male cases. Remarkably high male-to-female ratio in HIV cases in the majority of the countries suggests that male-to-male HIV transmission might have a bigger contribution compared to the proportion of cases officially attributed to men who have sex with men or that female HIV cases are less likely to be diagnosed or reported.

The results of the available CD4 count surveillance show that more than a half of newly diagnosed HIV cases are eligible for treatment at the time of diagnosis, indicating that HIV testing services should be scaled up to allow earlier diagnosis in those at the highest risk.

6.2 Way forward

It is recommended that the following actions are taken in order to improve the understanding of the HIV epidemiology in countries and the capacity of surveillance systems.

- Countries are encouraged to publish annual surveillance reports that describe results of surveillance activities and obstacles encountered during surveillance implementation.
- All countries need to establish the systems of monitoring of HIV drug resistance.
- Countries that have a larger number of datasets and trend data (Islamic Republic of Iran, Pakistan, Morocco) are encouraged to conduct HIV data triangulation with the aim to explore the patterns of HIV epidemics and the effectiveness of HIV prevention interventions and the national and regional level. Comparisons of multiple data sources during HIV data triangulation and data synthesis is particularly relevant given the heterogeneity in the quality of single sources of data.
- More efforts should be paid to expanding the provider-initiated routine offer of HIV testing to pregnant women and tuberculosis and STI patients using an opt-out approach (i.e. person is informed that HIV test is recommended as part of routine care and will be done unless s/he objects). This would enable countries to discontinue testing without the knowledge of the person being tested that is still present in some countries. Data obtained through this approach would also provide a valuable surveillance component.
- Utility of STI syndromic-based case reporting should be increased in countries that report
 considerably more cases of genital ulcers in women compared to men (such as Islamic
 Republic of Iran, Morocco, Saudi Arabia, Syrian Arab Republic and Tunisia) by firstly carrying
 out evaluation of STI surveillance.

HIV case reporting and reporting of AIDS deaths

- National AIDS programmes in the following countries should address the issue of a
 predominance of heterosexual mode of transmission in male HIV cases while the male-tofemale ratio of reported cases is high. Countries should explore the extent to which it
 reflects: a) low likelihood of men to report mode of transmission that is due to injecting
 drug users or homosexual sex, b) and/or true heterosexual transmission, c) and/or higher
 numbers of men being tested than women: Jordan, Kuwait, Morocco, Oman, occupied
 Palestinian territories, Saudi Arabia, Syrian Arab Republic, Tunisia, United Arab Emirates.
- Saudi Arabia, Oman and Afghanistan should increase the quality of data on reported mode
 of HIV transmission since a high proportion of HIV cases with an unknown mode of
 transmission is reported.
- Somalia and Sudan are encouraged to collect information on mode of HIV transmission in newly diagnosed HIV cases.
- All countries where diagnostics of CD4 counts in newly diagnosed HIV cases is done as part
 of clinical assessment should aim to have data on CD4 counts reported on HIV case
 reporting forms.
- Reporting of AIDS deaths should be strengthened in all the countries.

Facility-based HIV surveillance

- HIV testing should be provided to all patients with tuberculosis and STIs and all pregnant women. If the coverage of HIV testing in these groups is high (over 85%) they can replace facility-based HIV surveillance. Systems should be established that enable the collection and reporting of these HIV testing data in a high-quality manner.
- The quality and effectiveness of facility-based HIV surveillance should be assessed in Egypt, Iraq, Jordan, Lebanon, occupied Palestinian territories and Saudi Arabia due to differences in sample sizes across the years, small samples sizes and lack of clarity whether countries are submitting data from testing services or from surveys.

Integrated bio-behavioural surveillance surveys and population size estimates

- The following countries need to carry out baseline IBBSS in injecting drug users, female sex workers and men who have sex with men: Bahrain, Djibouti, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, South Sudan, Syrian Arab Republic, United Arab Emirates.
- Egypt, Jordan and Somalia need to conduct another round of IBBSS since only baseline IBBSS were conducted.
- Due to often substantial geographical variations in HIV spread in countries, IBBSS should be done in the multi-centric manner.
- Testing for STIs and parenterally transmitted infections should be included in IBBSS.
- Bahrain, Iraq, Jordan, Kuwait, Libya, Lebanon, Oman, Qatar, Occupied Palestinian territories, Saudi Arabia, Sudan, Syrian Arab Republic and United Arab Emirates should implement studies to estimate the size of key groups at higher risk of HIV. Size estimates studies should be conducted before or during IBBSS.
- Some countries where there is evidence of HIV spread beyond core groups should conduct HIV surveys in clients of female sex workers and other bridging groups (Djibouti, South Sudan, Somalia, Morocco, Islamic Republic of Iran, Pakistan).
- Samples sizes in IBBSS should be large enough to enable analysis of HIV prevalence for younger age groups (<24 years of age) or those recently exposed to high-risk behaviours, such as in injecting drug users.

Regional-level HIV surveillance-related activities

- Due to common lack of capacities in HIV surveillance in a number of countries, it is recommended that WHO and partner agencies support regional-level trainings in the following subjects:
 - surveillance among high-risk groups;
 - HIV drug resistance prevention and assessment;
 - population size estimates;
 - HIV data interpretation and use.
- The following countries should be encouraged and assisted to develop protocols for HIV case reporting: Afghanistan, Libya, Sudan, Somalia, South Sudan and Yemen.
- Awareness of national AIDS programme managers should be raised in understanding the value of CD4 counts data in newly diagnosed HIV cases and how to report these data. CD4 counts reporting in newly diagnosed cases should be established in countries where this

- diagnostics is available as that is an effective tool in monitoring the frequency of late diagnoses and would allow national AIDS programme to assess the needs for care and treatment services.
- National AIDS programme managers should be alerted to explore potential biases in data on the reported mode of transmission in male HIV cases since most of male cases have heterosexual mode of transmission reported in a number of countries which is not in line with the concentration of the epidemic in high-risk groups (primarily injecting drug users and men who have sex with men) Carry out evaluation of STI diagnostics that is a basis for reporting STI cases etiologically in countries that have STI case reporting based on etiological diagnosis (Islamic Republic of Iran, Oman, occupied Palestinian territory, Saudi Arabia).

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The aim of this report is to provide an update on the assessment of the national HIV surveillance systems in the countries of the Eastern Mediterranean Region of WHO. The report presents the results of surveillance activities carried out in the countries in 2007–2012, the plans for the development of HIV surveillance in 2013–2017, and key strengths and weaknesses of, and obstacles to, HIV surveillance implementation.

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