

TECHNICAL REPORT

HIV testing

Monitoring implementation of the Dublin Declaration on partnership to fight HIV/AIDS in Europe and Central Asia: 2018 progress report

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This report of the European Centre for Disease Prevention and Control (ECDC) was coordinated by Teymur Noori and Anastasia Pharris. The report review was provided by Andrew J Amato-Gauci.

This report is one in a series of thematic reports based on information submitted by reporting countries in 2018 on monitoring implementation of the Dublin Declaration on Partnership to Fight HIV/AIDS. Other reports in the series can be found on the ECDC website at: <https://www.ecdc.europa.eu/en/all-topics/hiv-infection-and-aids/prevention/monitoring-implementation-dublin-2018>. Draft versions of the thematic reports were produced under contract FWC ECDC/2017/007 by Rosalie Hayes, Yusef Azad, Alison Brown and Valerie Delpéch.

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Contents

Abbreviations	iv
Executive summary	1
Background	1
Methodology	1
Progress and remaining challenges.....	3
Policy, guidelines and strategies.....	5
Provision of testing services.....	6
Provision of testing for undocumented migrants.....	7
Uptake of HIV testing.....	8
Testing amongst key populations at increased risk of acquiring HIV.....	8
Testing in different settings.....	11
Linkage to care.....	15
Barriers to testing.....	17
Conclusions and priorities for action.....	18
Limitations.....	18
Overall progress.....	18
Priorities for action.....	20
References.....	21
Annex 1. Testing guidelines.....	22
Annex 2. Rates of testing among key populations.....	24
Annex 3. Number of tests and positivity rates in different testing settings.....	27

Figures

Figure 1. Geographical/epidemiological division of the WHO European Region.....	2
Figure 2. Percentage of all people living with HIV who know their status, Europe and Central Asia, 2018.....	3
Figure 3. Percentage of key populations living with HIV who know their status compared to awareness of HIV status for all people living with HIV, Europe and Central Asia, 2018.....	4
Figure 4. New HIV diagnoses, by CD4 cell count per mm ³ at diagnosis and transmission mode, WHO European Region.....	4
Figure 5. Key populations included in national HIV testing guidance/policy, by WHO sub-region, as reported by countries in Europe and Central Asia, in 2018.....	5
Figure 6. Different testing interventions included in testing guidelines, by WHO sub-region, 2018.....	6
Figure 7. Countries implementing different testing modes over time, Europe and Central Asia, 2016 and 2018.....	6
Figure 8. Level of implementation of different testing modes, Europe and Central Asia, reported in 2018.....	7
Figure 9. Access to testing for undocumented migrants, Europe and Central Asia, 2018.....	8
Figure 10. Percentage of MSM tested for HIV in the last 12 months (excluding men previously diagnosed), Europe and Central Asia, 2017.....	9
Figure 11. HIV testing uptake (tested in last 12 months) among PWIDs, Europe and Central Asia, 2012-2017.....	9
Figure 12. Percentage of PWID entering drug treatment who report having never been tested for HIV, EMCDDA reporting countries, 2017.....	10
Figure 13. Data availability for number of tests and positivity (or reactivity) rate for HIV testing in different settings, 2018.....	11
Figure 14. HIV testing in traditional health settings, Europe and Central Asia, reported in 2018.....	13
Figure 15. HIV testing in home or community settings, Europe and Central Asia, reported in 2018.....	15
Figure 16. Proportion of patients linked to care within 12 months of diagnosis, Europe and Central Asia, 2018.....	16
Figure 17. Proportion of people living with diagnosed HIV who are on treatment, Europe and Central Asia, 2018.....	16
Figure 18. Actions taken to address barriers to provision and uptake of HIV testing across Europe and Central Asia, 2018.....	17

Abbreviations

ART	Antiretroviral therapy
EEA	European Economic Area
ECDC	European Centre for Disease Prevention and Control
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
EU	European Union
GAM	Global AIDS Monitoring
MSM	Men who have sex with men
PLHIV	People living with HIV
PrEP	Pre-exposure prophylaxis
PWIDs	People who inject drugs
STI	Sexually transmitted infection
WHO	World Health Organization
UNAIDS	The Joint United Nations Programme on HIV/AIDS

Executive summary

This report presents the situation of HIV testing in Europe and Central Asia. It summarises data on implementation of national guidelines that shape HIV testing policies, the provision and uptake of HIV testing services in general and among key populations, and efforts being made to widen engagement with HIV testing and reduce late diagnosis.

Key findings include:

- One in five people living with HIV across Europe and Central Asia remain unaware of their HIV status.
- Forty countries report that they have guidelines on HIV testing in place. The majority of countries with guidelines published prior to 2015 report plans for revision in the next two years.
- Coverage of testing services varies substantially between different types of testing interventions, with testing in traditional health settings having generally higher coverage than testing in home or community settings. Forty-one countries report that they implement community-based testing delivered by medical providers, while only 19 countries implement community-based testing delivered by lay providers.
- There is limited data availability on testing rates among key populations, in particular migrants, prisoners and sex workers.
- Data availability on the number of tests and positivity rates of testing interventions in different settings is very limited. For those that could provide data, all countries reported positivity rates higher than 0.1% for their routine testing interventions – indicating that these interventions are cost-effective.
- Roughly half of the 52 reporting countries provided data on linkage to care. Based on the data reported, rates of linkage to care are high on average across the WHO sub-regions, but there is significant variation within regions.

Background

Regular HIV testing that leads to prompt diagnosis is critical to ensure good health outcomes for those living with HIV and crucial to prevent onward HIV transmission. Despite progress in reducing HIV transmission over recent years, every second person diagnosed with HIV in Europe and Central Asia is at an advanced stage of HIV infection, where the immune system is not functioning effectively [1]. This has been a persistent trend in the HIV epidemic in this region. Late diagnosis has consequences for the health of the individual, and is a strong indicator of increased morbidity and early mortality [2]. It also increases the risk of onward transmission, as it is estimated that those diagnosed late have been living with an undiagnosed infection for at least three to five years [3].

Methodology

Between January and March 2018, a European Centre for Disease Prevention and Control (ECDC) survey was used to collect data to monitor implementation of the 2004 Dublin Declaration [4]. The questionnaire was disseminated online to the 53 countries which form the WHO European Region (plus Kosovo¹ and Liechtenstein).

For the 2018 reporting year, ECDC further harmonised data collection with the Joint United Nations Programme on HIV/AIDS (UNAIDS) to ensure compatibility and reduce the reporting burden on health authorities. ECDC was responsible for collecting a core set of Global AIDS Monitoring (GAM) indicators for EU/EEA Member States through the Dublin monitoring, resulting in no separate GAM reporting for EU/EEA Member States. Non-EU/EEA Member States continued to complete GAM through UNAIDS and were therefore asked to complete a shortened ECDC Dublin Declaration questionnaire, with any GAM questions removed. The data collected through these processes were then combined and included in the analysis for this report.

National health authorities were asked to complete the Dublin Declaration survey between mid-February and the end of March 2018. Data from 52 out of 55 countries were reported over this period. In May 2018, a validation exercise was performed by each country and corrections were made where necessary. Validation of data collected through the GAM process was conducted by UNAIDS.

As well as considering the picture for the whole European and Central Asian region, findings are presented by WHO sub-regions (West, Centre, and East) which broadly group areas of Europe and Central Asia by geography and epidemic type, as depicted in Figure 1.

¹ This designation is without prejudice to positions on status and is in line with UNSC 1244 and the ICJ Opinion on the Kosovo Declaration of Independence.

The survey contained specific questions in relation to HIV testing, including questions about national testing guidelines, the provision and monitoring of testing services, uptake of testing among key populations and the continuum of HIV care. The responses to these questions are presented in this report, alongside case studies provided by health authorities which highlight action being taken to address barriers to access and availability of testing services.

For the first time, the 2018 questionnaire asked national health authorities to provide data on the number of tests conducted and the positivity rate for different testing interventions. When comparing the number of tests with positivity rates, HIV tests per 100 000 of the general population were calculated based on the number of tests and the population size for each country in order to improve comparability.

Data for this report have been supplemented with data from the European HIV Surveillance System for the WHO European region, the European Men who have sex with Men Internet Survey 2017 (EMIS-2017) and data from the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA).

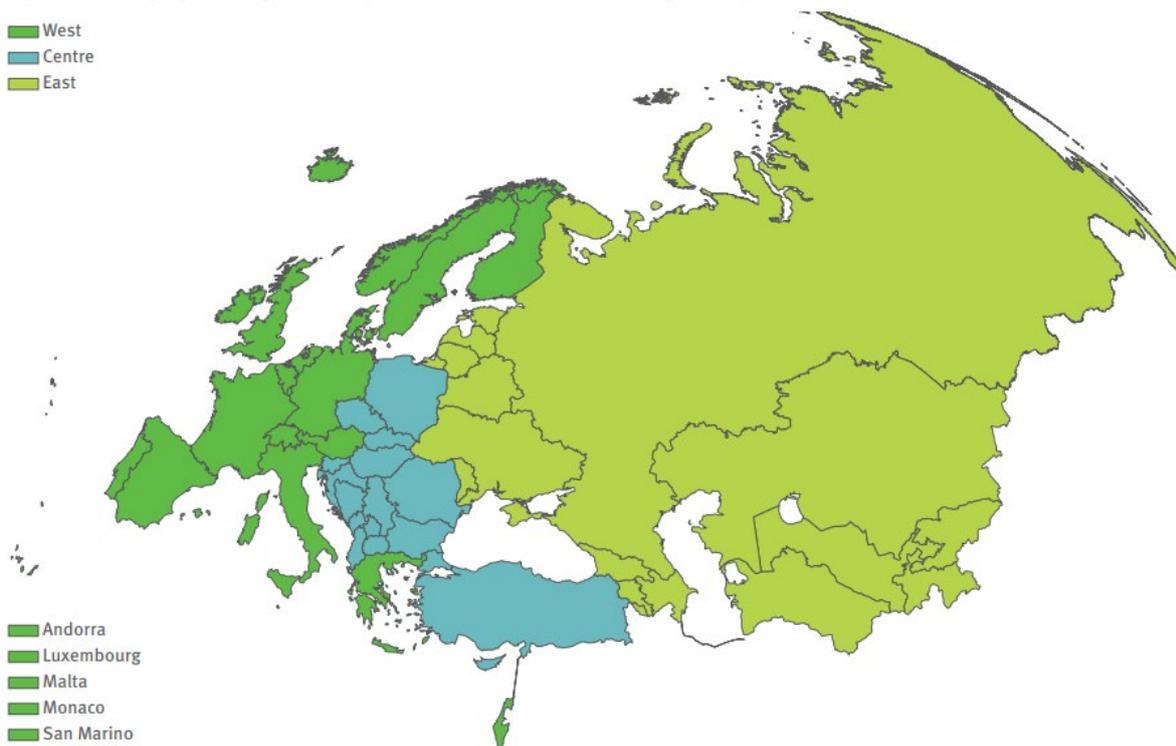
The countries covered by the report are grouped as follows:

West, 24 countries: Andorra, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Liechtenstein, Malta, Monaco, Netherlands, Norway, Portugal, San Marino, Spain, Sweden, Switzerland, United Kingdom.

Centre, 16 countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Hungary, Kosovo, North Macedonia, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia, Turkey.

East, 15 countries: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan.

Figure 1. Geographical/epidemiological division of the WHO European Region



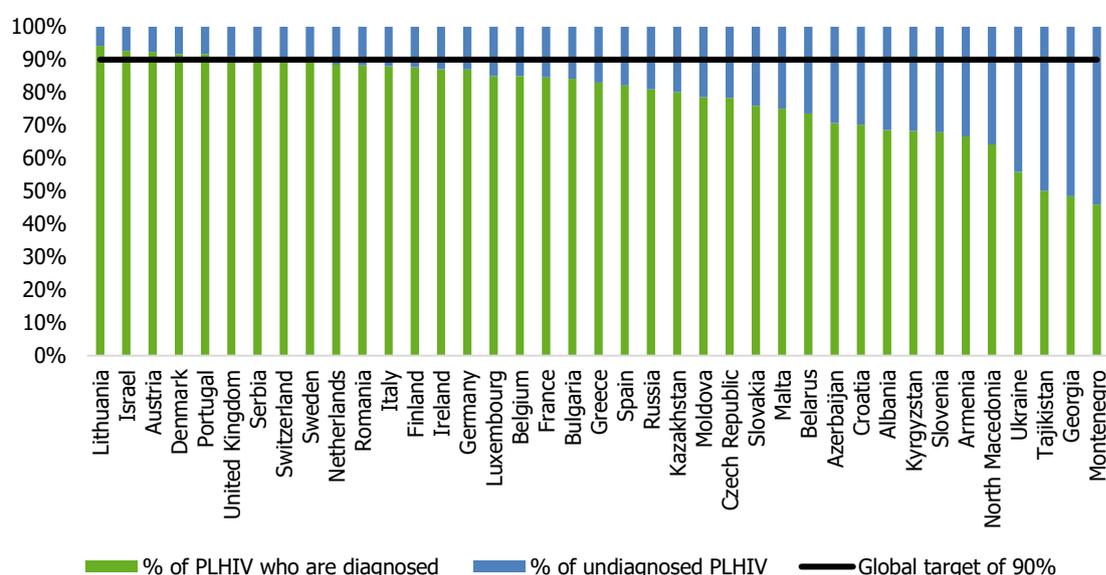
Progress and remaining challenges

In order to meet the first UNAIDS target of 90% or more of all people living with HIV (PLHIV) knowing their status, reducing the number of people living with undiagnosed HIV through scaling up HIV testing is essential.

An unacceptably high proportion of PLHIV do not know they have the virus. In the 39 countries reporting data within Europe and Central Asia, an estimated 2 165 454 people are living with HIV, 1 724 600 of whom (80%; range 46–100%) have been diagnosed [5]. Therefore, one in five (20%; range 0–54%) PLHIV in Europe and Central Asia are unaware of their HIV status. Overall, the proportion of undiagnosed PLHIV is the highest in countries of the East WHO sub-region where one in four PLHIV are living with undiagnosed HIV and is lowest in the countries of the West sub-region, with one in eight PLHIV who live with undiagnosed HIV.

Ten of the 40 countries able to report data (Austria, Denmark, Israel, Lithuania, Monaco, Portugal, Sweden, Switzerland, Serbia and the United Kingdom) achieved the first UNAIDS target with 90% or more of all PLHIV knowing their status (Figure 2). Of the other 30 countries, 14 are above the regional average, reporting that 80% or more (range 80–89%) of PLHIV know their status (10 West; 2 Centre; 2 East), and 16 countries are below the regional average, reporting that fewer than 80% (range 46–79%) of PLHIV know their status (1 West; 7 Centre; 8 East).

Figure 2. Percentage of all people living with HIV who know their status, Europe and Central Asia, 2018

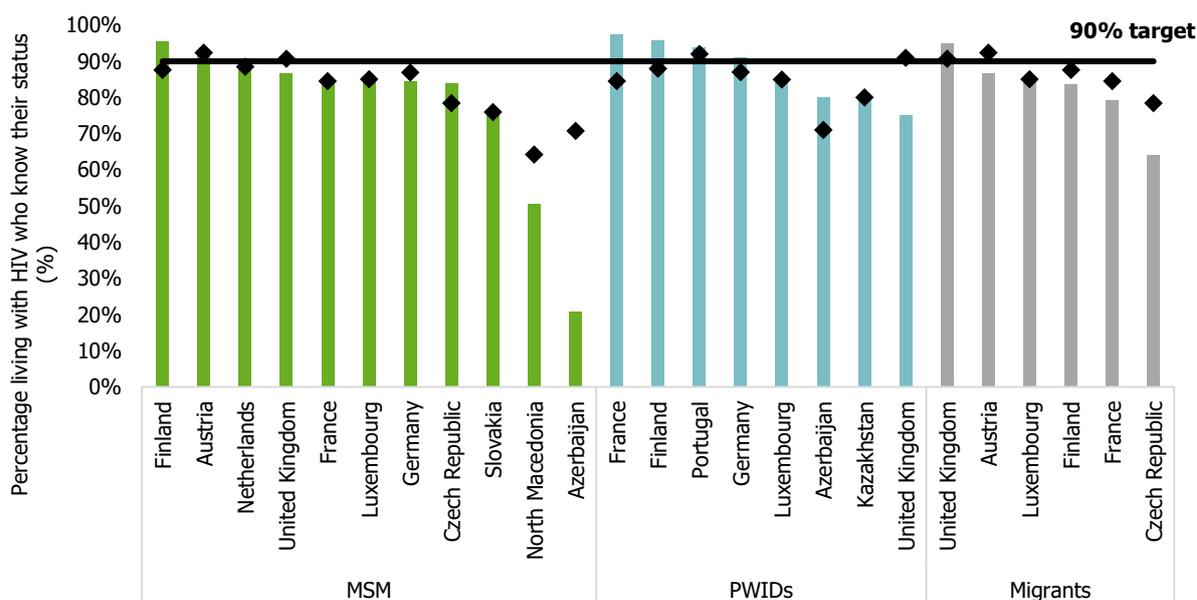


Data availability for the continuum of care disaggregated by key populations is fairly limited, with only 13 countries able to submit data for one or more key population. Of these 13, eleven countries were able to submit data on the proportion of MSM living with HIV who are diagnosed, eight countries for PWIDs and only six countries for migrants (see Figure 3).

There is considerable variation in those who are undiagnosed between countries and key population groups. In the 11 countries reporting data for MSM, 188 728 MSM are living with HIV, of whom 161 313 (85%; 21–95%) know their status and 27 415 (15%; 5–79%) do not. In the eight countries reporting data for PWIDs, 49 781 PWIDs are living with HIV, of whom 46 603 (94%; 75–98%) know their status and 3178 (6%; 2–25%) do not. In the five countries reporting data for migrants, 75 491 migrants are living with HIV, of whom 63 099 (84%; 64–95%) know their status and 12 392 (16%; 5–36%) do not.

When compared with the awareness of the overall population living with HIV of their HIV status, key populations in countries that are able to report data have similar outcomes, with the exception of MSM in North Macedonia and Azerbaijan, PWIDs in the United Kingdom and migrants in Austria, Finland, France and the Czech Republic. However, given the very limited number of countries who are able to report data, this should not be considered representative of the region as a whole.

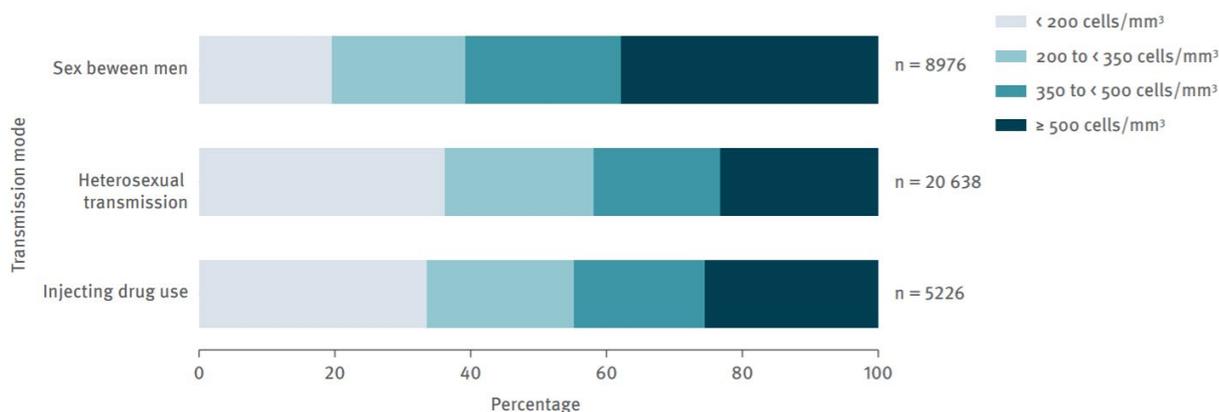
Figure 3. Percentage of key populations living with HIV who know their status compared with awareness of HIV status for all PLHIV, Europe and Central Asia, 2018



Scaling up of testing should aim to both reduce the number of people who have never been tested for HIV and increase the frequency of testing among people at risk of acquiring HIV. As well as reducing the undiagnosed number, this should also reduce the proportion of PLHIV who are diagnosed late. A diagnosis is defined as late when the CD4 cell count is below 350 per mm³ blood at the time of HIV diagnosis [1].

In the WHO European region, just over half (53%) of people newly diagnosed with HIV were diagnosed late in 2017 [1]. This proportion varies across the Region and was highest in the East (57%), lower in the Centre (53%) and lowest in the West (48%) [1]. Within the Region, men who have acquired HIV through heterosexual sexual contact are most affected by late diagnosis (62%), followed by those who have acquired HIV through injecting drug use (55%), heterosexual women (54%) and men who have sex with men (39%) [1]. Older people are also more affected by late diagnosis, 66% of people aged 50 or above were diagnosed late in 2017, compared with 34% for people aged 15–19 and 32% for people aged 20–24 [1].

Figure 4. New HIV diagnoses, by CD4 cell count per mm³ at diagnosis and transmission mode, WHO European Region, 2017 (n=33 840) [1]



Note: no data from Andorra, Belarus, Germany, Hungary, Iceland, Latvia, Monaco, Norway, Poland, Russian Federation, San Marino, Turkey, Turkmenistan and Uzbekistan.

Policy, guidelines and strategies

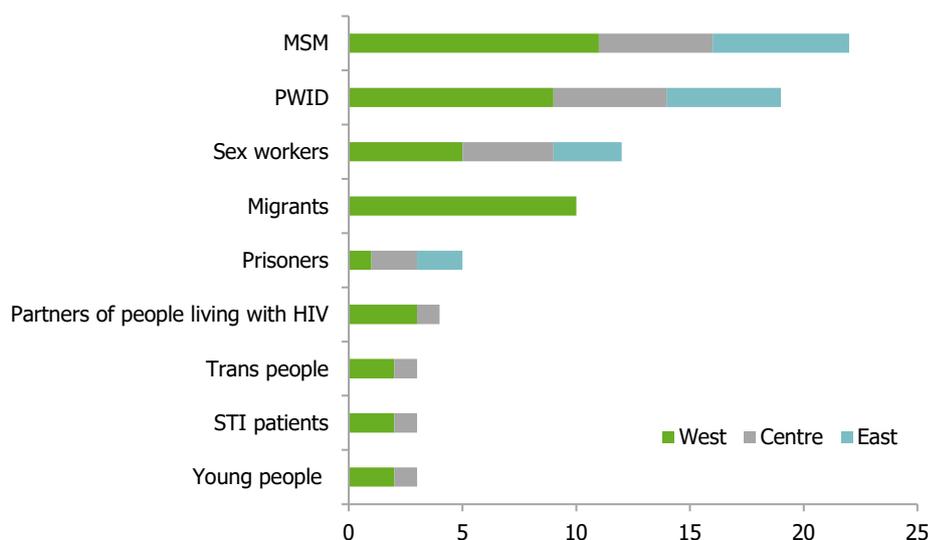
Testing guidelines support national programme managers and service providers in designing and implementing HIV testing services. They set standards for best practice and inform strategic decision-making regarding the mix of approaches to delivering HIV testing services that will maximise impact.

Information on whether countries had national HIV testing policies or guidelines was reported by 48 of 52 countries. Overall, 40 of the 48 countries reported that national policies or guidelines existed (Annex 1) which dated from 1994 to 2017. Of the 40 countries, 15 reported guidelines that dated between 2015 and 2018. Of the 25 countries with older guidelines, 20 reported an intention to revise guidelines during 2018 and 2019. Eight countries reported that no national HIV testing guidelines existed: Andorra, Belgium, Iceland, Ireland (West); Cyprus, Montenegro, Slovakia (Centre); and Latvia (East).

The ECDC guidance on HIV and hepatitis testing recommends the offer of testing to key populations [6], yet of the 40 countries that reported national HIV testing policy or guidelines, only 31 reported that their guidelines included specific recommendations for key populations. Where information was reported, the most commonly reported key population mentioned were MSM (22), PWID (19) and sex workers (12). HIV testing policies for migrants were only reported in the West region in 10 countries (Figure 5).

In the same guidance, ECDC also recommended that key populations should be tested every 6–12 months (depending on risk assessment and local epidemiology) [6]. Of the same 40 countries, 28 reported that they included recommendations on testing frequency within their testing guidelines. Seven countries recommend that key populations be tested at least once every 12 months, 11 countries recommend testing every six months and nine countries recommend testing every three months. Most respondents stated that increased frequency of testing would be recommended where high-risk behaviour is present.

Figure 5. Key populations included in national HIV testing guidance/policy, by WHO sub-region, as reported by 40 countries in Europe and Central Asia, in 2018

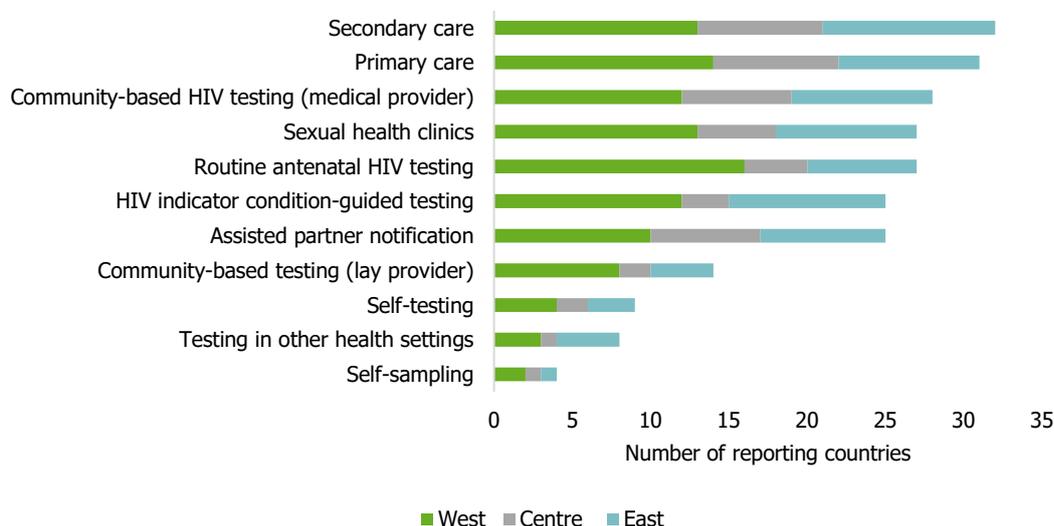


The ECDC guidance states that the following HIV testing interventions are effective, acceptable to target groups and can increase the offer, uptake and coverage of HIV testing:

- community-based testing
- self-sampling
- self-testing
- lay provider testing
- routine antenatal testing
- routine testing in sexual health clinics
- provider-initiated testing in primary and secondary care
- testing in other health settings (such as pharmacies) [7].

Countries were asked whether these HIV testing interventions were included in their national HIV testing guidance (Figure 6). The most commonly cited interventions included: HIV testing in secondary care (32), HIV testing in primary care (31), community-based HIV testing delivered by a medical provider (28), routine antenatal HIV testing (27) and HIV testing in sexual health clinics (27). On average in the West, 6.3 interventions were listed in the national guidance (range 2–12), in the Centre this was four (range 1–7) and in the East sub-region this was six (range 1–10).

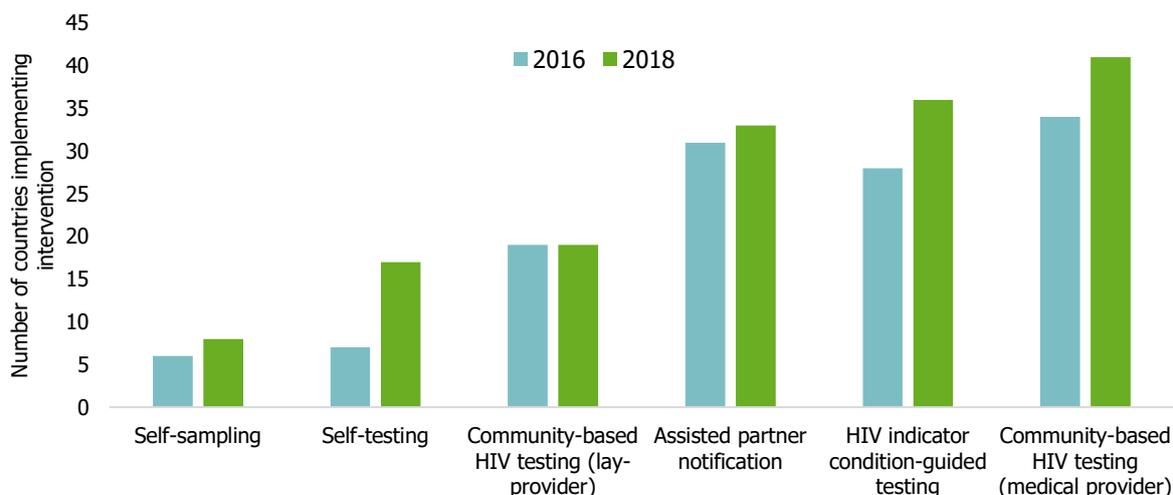
Figure 6. Different testing interventions included in testing guidelines, by WHO sub-region, 2018 (n=40)



Provision of testing services

The provision of a range of testing services has improved over time. Data from 2018 on testing provision were compared with responses from 2016 (Figure 7). Data from 2016 were available for six testing modes: self-sampling, self-testing, community-based HIV testing (medical and lay-provider), assisted partner notification and HIV indicator condition-guided testing. The testing modes that have seen the greatest increase in implementation are self-testing (from seven to 17 countries), HIV indicator condition-guided testing (from 28 to 36 countries) and community-based HIV testing delivered by a medical provider (from 34 to 41 countries). Self-sampling and assisted partner notification have seen modest increases in implementation across Europe and Central Asia (33% and 6% respectively), while implementation of community-based HIV testing delivered by a lay-provider has not changed.

Figure 7. Countries implementing different testing modes over time, Europe and Central Asia, 2016 and 2018 (n=52)



However, there is substantial variation in the level of provision of various testing modes across the WHO European region (Figure 8). Countries were asked to state the level of coverage based on the following definition:

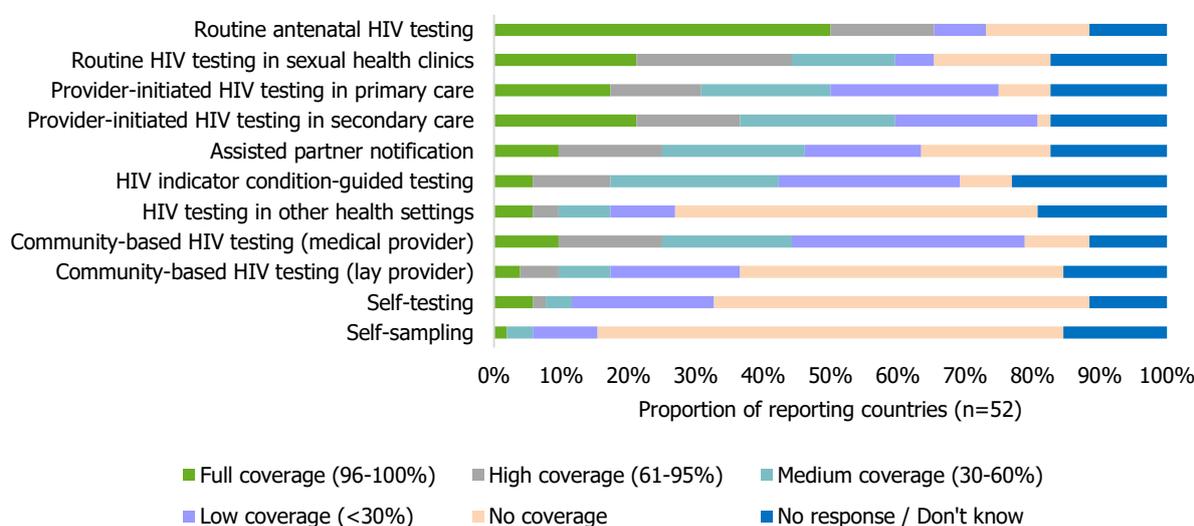
Full coverage is defined as 'all who need the service can use it, that the service is of sufficient quality to be effective, and that use of the service will not expose the user to financial hardship'. Please note this definition when responding to the following questions, and use the following scale:

- No coverage:** The service is not provided
- Low coverage:** <30% of the population can use the effective, affordable service
- Medium coverage:** 30-60% of the population can use the effective, affordable service
- High coverage:** 61-95% of the population can use the effective, affordable service
- Full coverage:** 95-100% of the population can use the effective, affordable service

Testing approaches in traditional healthcare settings tended to be better implemented, with high or full coverage reported for routine antenatal HIV testing (34 countries), routine HIV testing in sexual health clinics (23 countries), provider-initiated HIV testing in primary care (16 countries) and secondary care (19 countries).

HIV testing in home or community settings were much less likely to be implemented, with the following interventions reported as having no coverage at all: self-sampling (36 countries), self-testing (29 countries), HIV testing in other health settings (28 countries) and lay-provider community-based testing (25 countries).

Figure 8. Level of implementation of different testing modes, Europe and Central Asia, reported in 2018 (n=52)



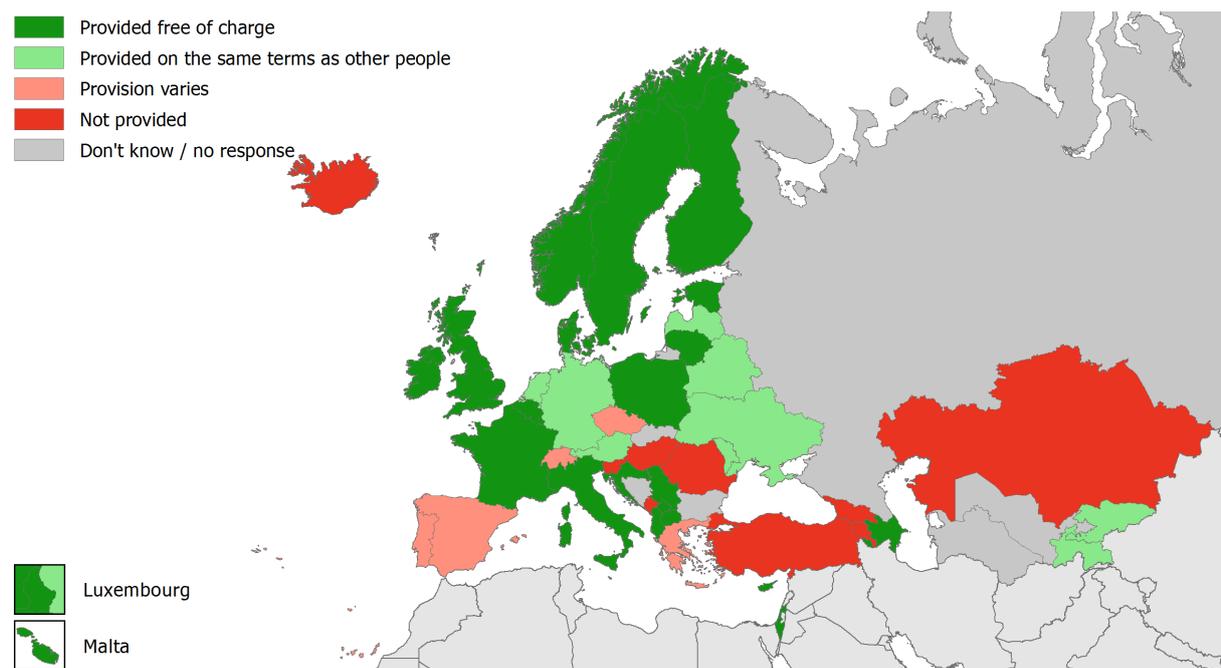
Tackling legal and policy barriers to provision of HIV testing

Legislation and testing policies can sometimes prove a barrier to ensuring that a diverse range of HIV testing interventions are available to those who need it. In 2016, 16 national health authorities reported that there were laws or policies in place in their country that prohibited lay-provider community-based HIV testing. In addition, home-sampling was not authorised in five countries and self-testing was not authorised in eight countries. It is promising, therefore, to see that since then five countries have changed laws or policies to authorise self-testing (the Czech Republic, Germany, Romania, Spain, and Switzerland) and three countries (Belgium, Cyprus, and the Czech Republic) have changed laws or policies to authorise lay-provider HIV testing.

Provision of testing for undocumented migrants

Twenty-two countries reported that access to testing is free of charge for undocumented migrants (Figure 9). This was true for roughly half the countries in both the West and Centre sub-regions, but only three countries in the East sub-region (Azerbaijan, Estonia and Lithuania). The nine countries which reported that they do not provide free testing for undocumented migrants were all in the Centre or East sub-region, except for Iceland which reported that it does not have any undocumented migrants.

The 16 countries where provision varies or where provision is on the same terms as other people (but also not free of charge) are spread across the three sub-regions. While provision on the same terms as other people may appear equitable, in effect it restricts the availability of testing for undocumented migrants because it relies on undocumented migrants being able to pay for testing, a group which is both socially and financially vulnerable.

Figure 9. Access to testing for undocumented migrants, Europe and Central Asia, 2018 (n=45)

Uptake of HIV testing

Testing amongst key populations at increased risk of acquiring HIV

Ensuring that HIV testing is available and accessible to key populations at increased risk of acquiring HIV is crucial to combatting the HIV epidemic. Therefore, monitoring uptake of testing among key populations is an important indicator of whether implementation of testing is successfully targeting those most at risk. Full details of all data submitted on testing rates among key populations are listed in Annex 2.

Men who have sex with men

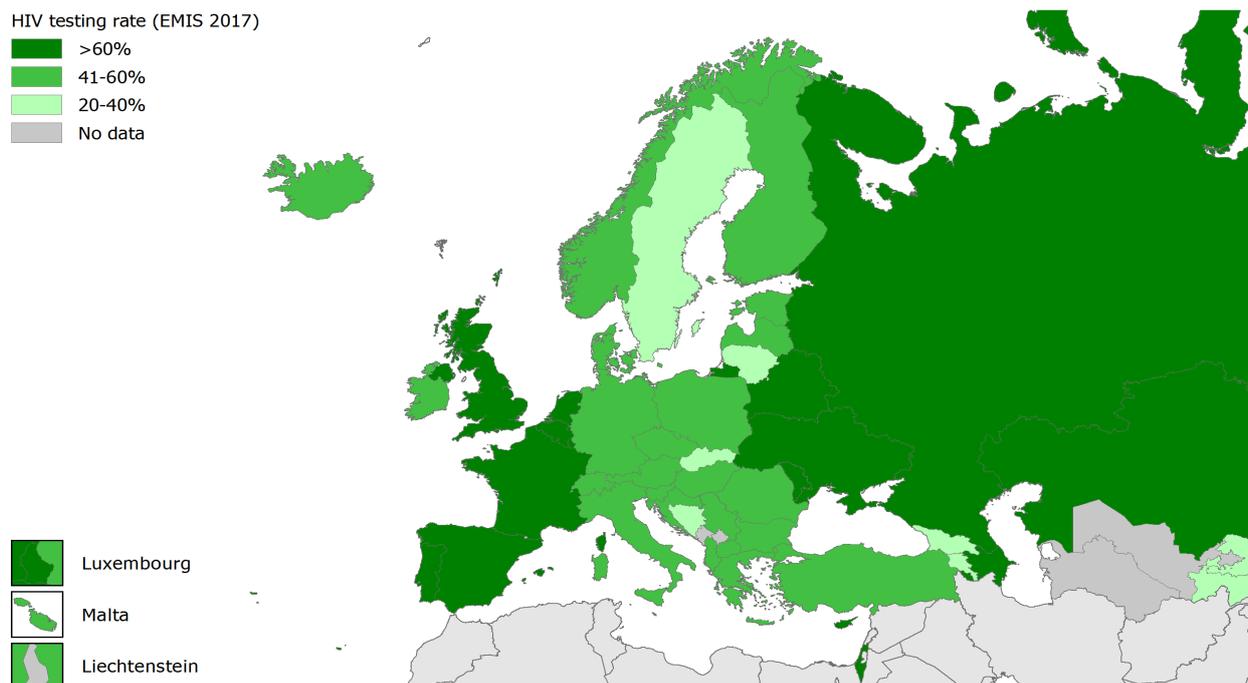
Twenty-three countries were able to report data on testing rates over a 12-month period amongst MSM (see Annex 2). The year the reported data were collected ranged from 2013 to 2017, and 17 countries reported data from a national source whilst six countries used a sub-national source. In the 23 reporting countries, the proportion of MSM tested in the last 12 months ranged from 20.2% (Kyrgyzstan) to 98.5% (Bulgaria), with 10 countries reporting testing rates of over 50%. The median rate for MSM testing in the previous 12 months is 47.7%.

EMIS-2017 data on testing rates are more comprehensive for the region, with rates estimated for 41 countries, and 28 out of 41 countries identifying as having testing rates amongst MSM above 50% (Figure 10). However, this data are self-reported and come from a self-selecting sample more likely to be engaged in sexual health promotion activities, so country results should be interpreted with caution and may not be directly comparable.

Case study: enabling regular screening via pre-exposure prophylaxis

France and Belgium both report that pre-exposure prophylaxis (PrEP) is indirectly enabling more regular screening for key populations at risk of HIV, as PrEP users must be screened for HIV every three months. In France, this resulted in the HIV testing strategy being re-assessed in 2017, with a recommendation for screening for MSM every three months.

Figure 10. Percentage of MSM tested for HIV in the last 12 months (excluding men previously diagnosed), Europe and Central Asia, 2017 (N = 45 / n=127 487)



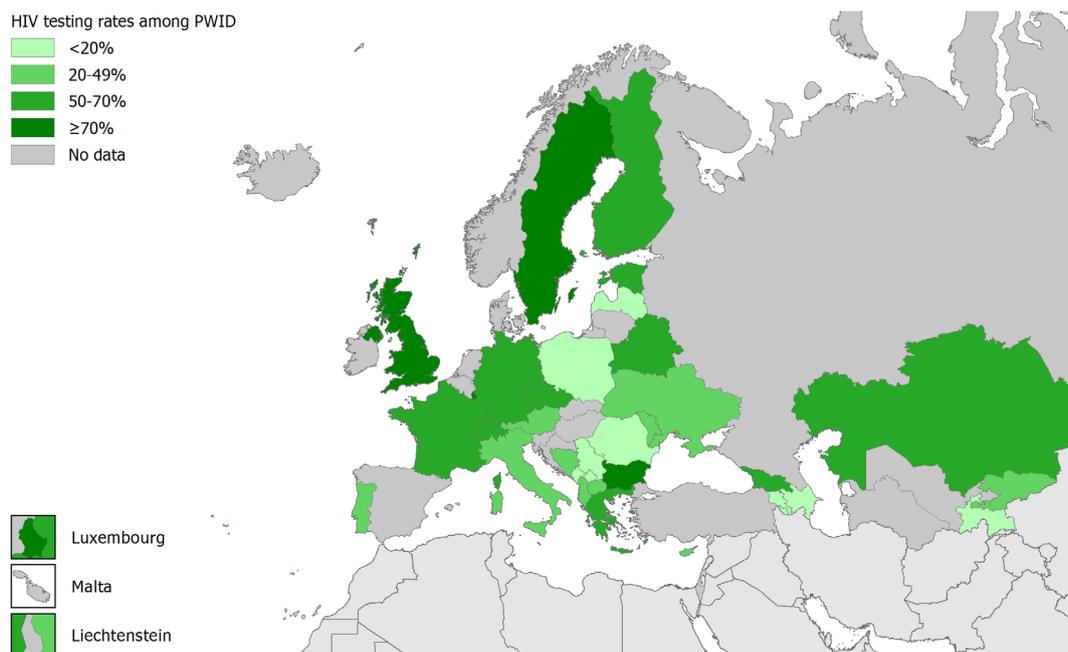
Source: EMIS-2017 [8] except for data from Albania, Armenia, Azerbaijan, Georgia, Kyrgyzstan, Kazakhstan, and Tajikistan which was reported via the Dublin Declaration questionnaire 2018.

People who inject drugs

Thirty-three countries were able to provide data on PWID testing rates over a 12-month period (Figure 11). Most countries reported data collected in 2016 or 2017, but for three countries, data reported were from 2012, 2013 and 2014 respectively.

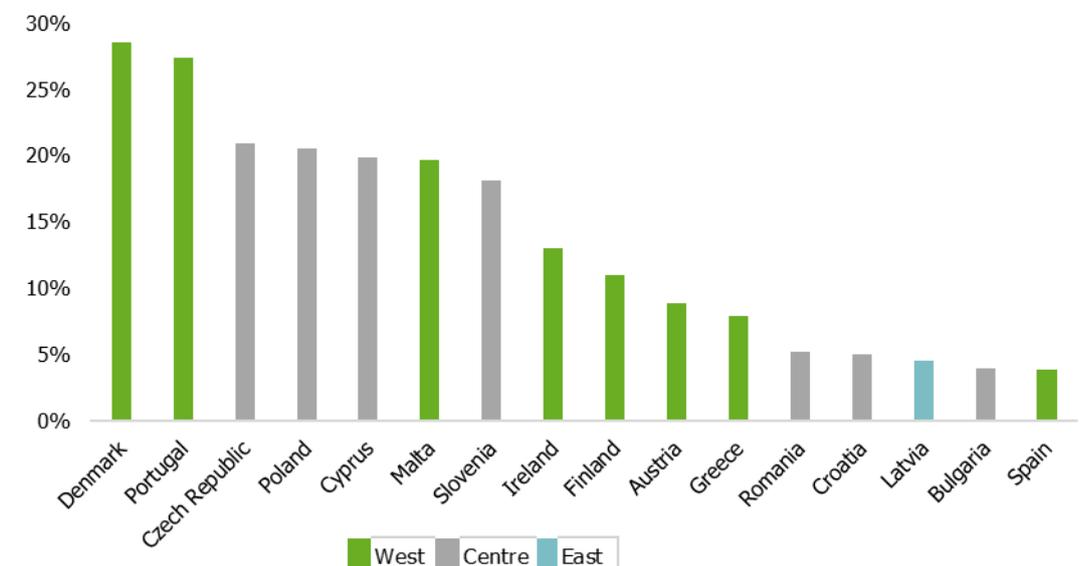
Four countries (Bulgaria, Luxembourg, Sweden and the United Kingdom) reported testing in the previous 12 months of over 70%. Ten further countries reported values of between 50 and 70%; 10 countries reported between 20% and 49%; nine countries reported less than 20%; and 22 countries did not report any data. The median rate for PWID testing in the last 12 months was 45.8%.

Figure 11. HIV testing uptake (tested in last 12 months) among PWIDs, Europe and Central Asia, 2012–2017 (n=33)



The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) collects the percentage of PWID entering drug treatment who report having never been tested for HIV (Figure 12). 'Never tested' rates range from 28% (Denmark) to 4% (Latvia and Bulgaria). There is no clear correlation between EMCDDA data and the Dublin Declaration responses on testing rates in the previous 12 months. Of those countries which reported over 70% testing in the previous 12 months, only Bulgaria also provided data to EMCDDA on 'ever/never' testing rates for those entering prison – 4% had never tested which confirms the relative effectiveness of Bulgaria's testing interventions for PWID.

Figure 12. Percentage of PWID entering drug treatment who report having never been tested for HIV, EMCDDA reporting countries, 2017² (n=16)



Source: EMCDDA [9]

Migrants (persons born abroad)

Uptake of screening programmes is high among migrant groups [10], indicating that where measures are taken to improve testing for this key population they are likely to be successful. However, data on HIV testing rates among migrants are very limited. Seven countries were able to provide data on testing rates for migrants and only Greece was able to report rates for undocumented migrants (see Annex 2). Apart from Hungary, all the countries that were able to report testing rates among their migrant populations are in the West sub-region. No reporting countries were able to provide data for 2017 indicating that, even where data is collected, monitoring is insufficiently frequent.

The results for migrant testing rates were generally poor, ranging from 3% in Hungary to 62% in Greece, the only country to return a rate of over 50%. The testing rate for undocumented migrants in Greece was 16.3%.

Case study: increasing uptake of testing among migrants

In **Germany**, information on testing services is provided to migrants from sub-Saharan Africa in cooperation with priests in African churches and public health offices in several German cities. Training is provided to peer educators who promote HIV testing and treatment in migrant communities, and training on intercultural communication is provided to health workers in HIV and STI prevention.

² With the exception of Spain, where reported data is from 2016.

Other key population groups

Reported data on other key population groups are very limited. Fifteen countries reported data on testing rates among sex workers (range 23–99.6%), 11 countries reported data for testing rates amongst prisoners (range 2.6–99.9%), and no countries were able to report data on testing rates among transgender people. Full details are available in Annex 2.

Case study: using peer education to increase testing among prisoners

In **Ireland**, there is a Community Based Health & First Aid in Action (CBHFA) peer-to-peer education programme in place in all 14 prisons in Ireland [11]. The programme has recruited almost 800 volunteer inmates since it was piloted in 2009. The volunteers learn and communicate back to their peers about infection prevention, control and awareness, reducing stigma around HIV and testing and promoting know your status. The prisons report that this has resulted in a greater uptake of prisoners requesting testing for BBVs and STIs and less perceived stigma when doing so.

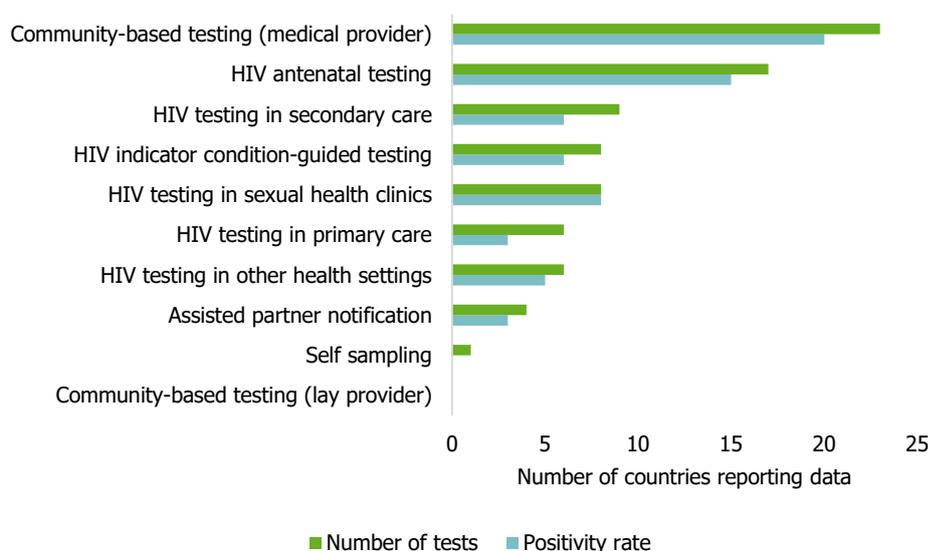
Testing in different settings

Monitoring uptake of testing in different settings enables national health authorities to ensure that services are delivered effectively and testing those most at risk. Positivity rates are one possible measure for determining effectiveness, although the threshold for effectiveness will vary depending on the purpose of the testing intervention, its cost, and HIV prevalence rates within each country.

However, a variety of studies have established that an approximate cost-effectiveness threshold for routinely offering testing is one positive result in 1 000 tests, which translates as a positivity rate of 0.1% [12]. The expectation is that targeted screening would yield a higher positivity rate, although a standard threshold has not yet been established in the scientific literature.

Data availability on the number of tests and positivity rates vary significantly depending on the setting (Figure 13). Of the 26 countries that provided any data, more countries were able to provide data for the number of tests compared with positivity rates. Twenty-three countries were able to report data on the number of tests carried out by a medical provider in community-based testing sites in the last 12 months and 20 out of 23 were able to provide positivity rates for that setting. In contrast, no countries were able to report data for community-based testing by lay-providers, and only one country (the United Kingdom), was able to provide any data on self-sampling (although they were unable to provide a positivity rate). HIV testing in sexual health clinics was the only setting for which an equal number of countries (8) were able to provide data on both the number of tests and positivity rate.

Figure 13. Data availability for number of tests and positivity rate for HIV testing in different settings, 2018 (n=26)



HIV testing in traditional health settings

Antenatal HIV testing (Figure 14a): Thirty-eight countries reported that they implement routine antenatal HIV testing. Of these, 16 were able to provide data on both number of tests and positivity rates for this testing type. The number of tests range from 643 per 100 000 of the general population (Romania) to 4 982 per 100 000 of the general population (Kazakhstan). Positivity rates range from 0.004% (Bulgaria) to 0.3% (Latvia), with a median rate of 0.1%.

HIV testing in sexual health clinics (Figure 14b): Thirty-four countries reported that they implement routine HIV testing in sexual health clinics. Of these, eight were able to provide data on both number of tests and positivity rates for this testing type. The number of tests range from five per 100 000 of the general population (Romania) to 516 per 100 000 of the general population (the Netherlands). Positivity rates range from 0.2% (the United Kingdom) to 9.9% (Italy), with a median rate of 0.5%.

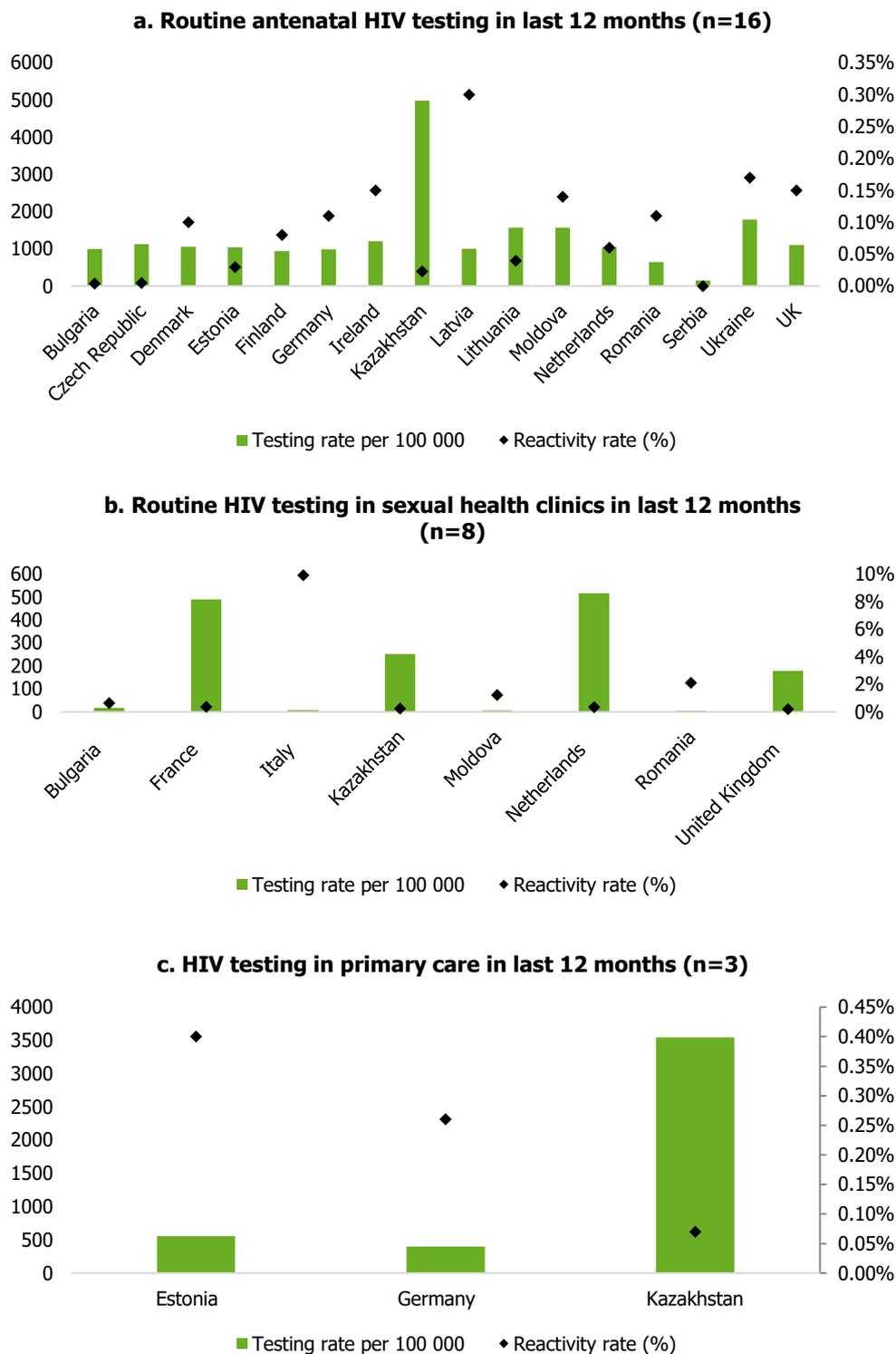
HIV testing in primary care (Figure 14c): Thirty-nine countries reported that they implement provider-initiated HIV testing in primary care. Of these, only three were able to provide data on both number of tests and positivity rates for this testing type. Germany reported 400 tests per 100 000 of the general population, with a positivity rate of 0.26%. Estonia reported 557 tests per 100 000 of the general population, with a positivity rate of 0.4%. Kazakhstan reported 3 543 tests per 100 000 of the general population, with a positivity rate of 0.07%.

HIV testing in secondary care (Figure 14d): Forty-two countries reported that they implement provider-initiated HIV testing in secondary care. Of these, six were able to provide data on both number of tests and positivity rates for this testing type. The number of tests range from 225 per 100 000 of the general population (the United Kingdom) and 6 774 per 100 000 of the general population (Estonia). Positivity rates range from 0.05% (Kazakhstan) to 1.16% (Luxembourg), with a median rate of 0.2%.

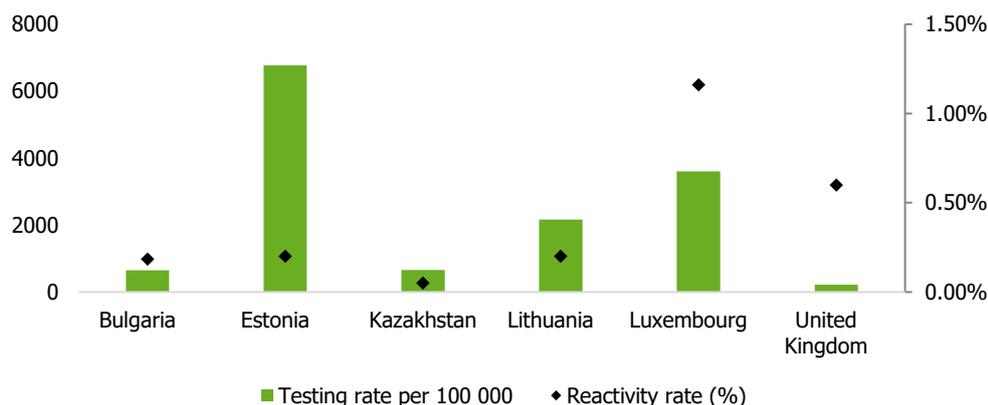
Assisted partner notification (Figure 14e): Thirty-three countries reported that they implement assisted partner notification. Of these, only three were able to provide data on both number of tests and positivity rates for this testing type. Lithuania reported one test per 100 000 of the general population, with a positivity rate of 3.2%. The United Kingdom reported three tests per 100 000 of the general population, with a positivity rate of 3.9%. The Netherlands reported five tests per 100 000 of the general population, with a positivity rate of 4.3%.

HIV indicator condition-guided testing (Figure 14f): Thirty-six countries reported that they implement indicator condition-guided testing. Of these, six were able to provide data on both number of tests and positivity rates for this testing type. The number of tests range from seven per 100 000 of the general population (the United Kingdom) to 8 133 per 100 000 of the general population (France). Positivity rates range from 0.19% (Kazakhstan) to 2.1% (Ukraine), with a median rate of 1.65%.

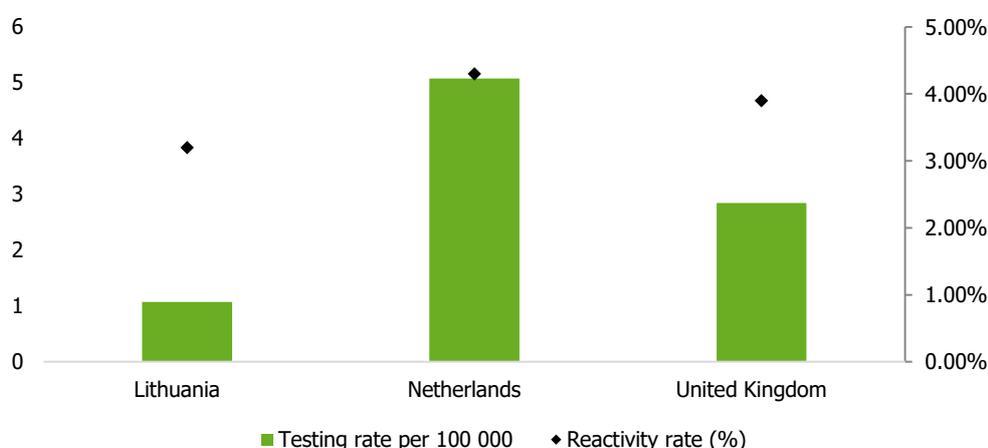
Figure 14. HIV testing in traditional health settings, Europe and Central Asia, reported in 2018



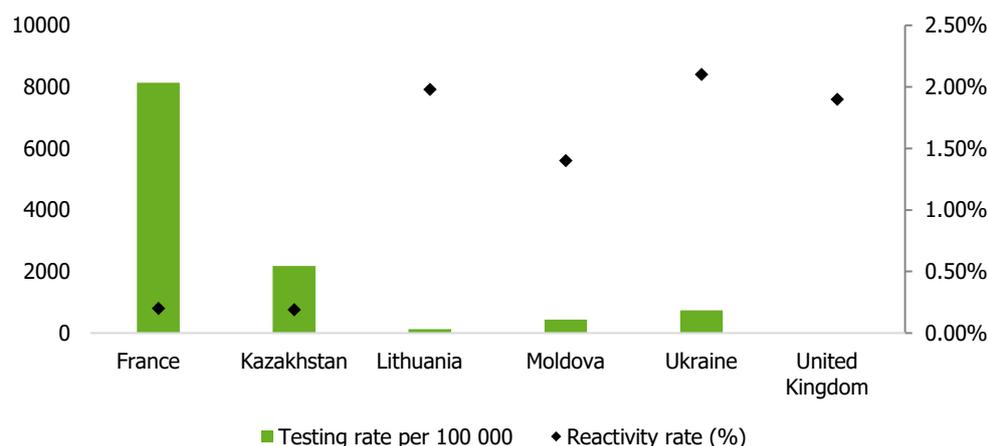
d. HIV testing in secondary care in last 12 months (n=6)



e. Assisted partner notification in last 12 months (n=3)



f. HIV-indicator guided testing in last 12 months (n=6)



HIV testing in home or community settings

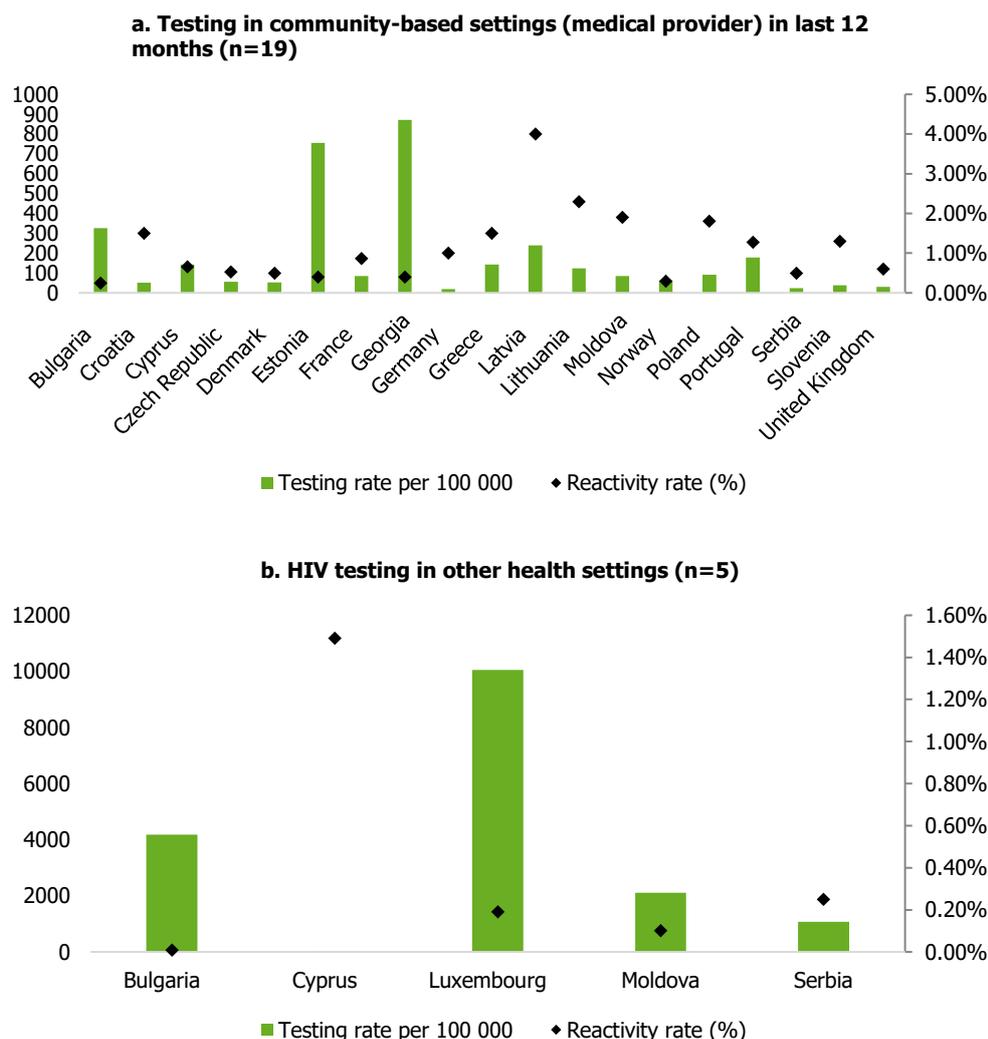
Community-based testing (medical provider) (Figure 15a): Forty-one countries reported that they implement community-based testing delivered by a medical provider. Of these, 20 countries were able to provide data on both the number of tests and positivity rates for this testing type. The number of tests ranged from 19 per 100 000 of the general population (Germany) to 872 per 100 000 of the general population (Georgia). Positivity rates ranged from 0.25% (Bulgaria) to 4% (Latvia), with a median rate of 1%. Ten countries have positivity rates below 1% - Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, France, Georgia, Norway, Serbia and the United Kingdom.

Community-based testing (lay provider): Nineteen countries reported that they implement community-based testing delivered by a lay provider. No data on number of tests or positivity rate were provided by any of these countries.

HIV testing in other health settings (Figure 15b): Fourteen countries reported that they implement HIV testing in other health settings, such as pharmacies. Of these, five countries were able to provide data on both the number of tests and positivity rates for this testing type. The number of tests ranged from eight per 100 000 of the general population (Cyprus) to 10 049 per 100 000 of the general population (Luxembourg). Positivity rates ranged from 0.01% (Bulgaria) to 1.49% (Cyprus), with a median rate of 0.19%.

Self-sampling: Eight countries reported that they implement self-sampling. Only one country, the United Kingdom, was able to provide data on the number of tests carried out via this testing method (34 per 100 000 of the general population). No data on positivity rates for self-sampling were reported.

Figure 15. HIV testing in home or community settings, Europe and Central Asia, reported in 2018



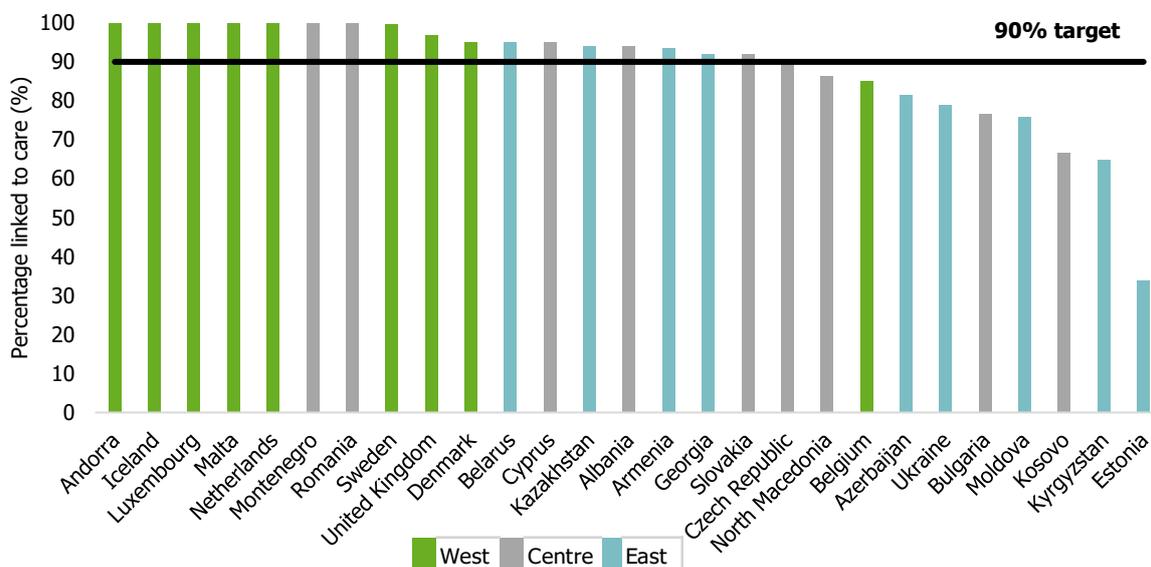
Linkage to care

Providing HIV testing services where there is no access to care, or poor linkage to care, including antiretroviral therapy (ART), has limited benefits for those living with HIV. It is important to note that while increasing HIV testing in non-traditional settings is important for widening accessibility, it also increases the risk of people not being linked into care, underlining the need for clear referral pathways.

Overall, 27 countries provided data on the proportion of patients newly diagnosed who were linked to HIV care within 12 months (nine in the West, nine in the Centre and nine in the East sub-region) (Figure 16). The values reported varied in data source, with some countries using more objective measures and others reporting values based on expert opinion. The equivalent figures for the proportion linked to care promptly (within three months of diagnosis) were eight, two and six countries respectively.

Among reporting countries, the median of the reported values of linkage to care was 94% (range 34–100). This varied by sub-region: 100% in the West (85–100), Centre 92% (67–100) and 81% in the East (34–95).

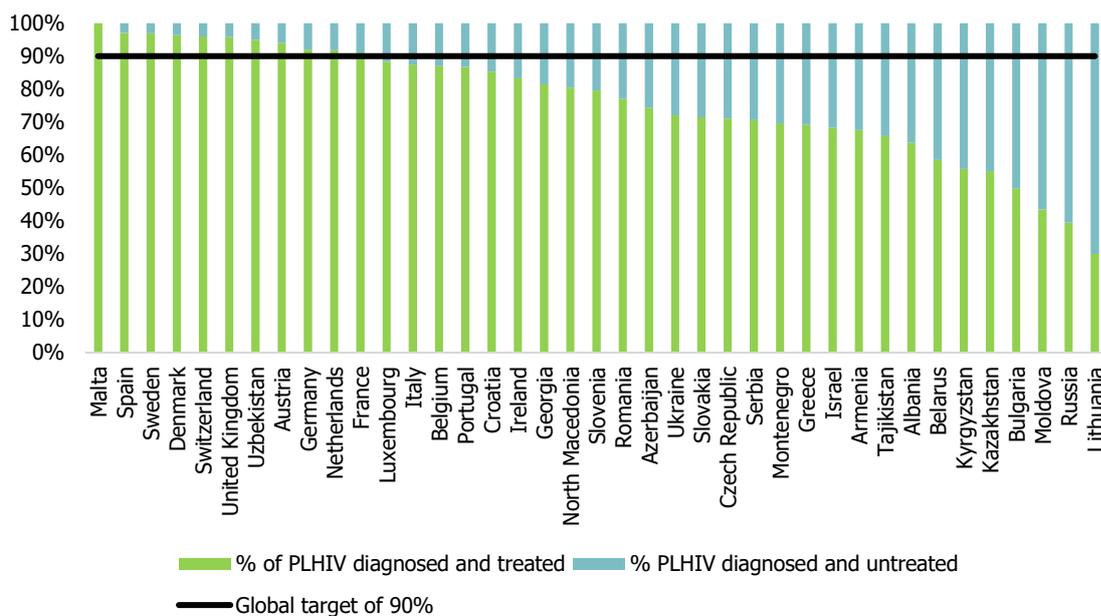
Figure 16. Proportion of patients linked to care within 12 months of diagnosis, Europe and Central Asia, 2018



Since the majority of countries now recommend immediate treatment regardless of CD4 count [5], the proportion of people living with diagnosed HIV who are on treatment is a useful proxy for the success of linkage to, and retention in, care. As a greater number of countries were able to report data on diagnosis and treatment than were able to provide data on linkage to care, this offers a wider insight into how well patients are being linked to HIV care across the region.

In the 41 countries that reported data on diagnosis and treatment of PLHIV within Europe and Central Asia, an estimated 1 742 631 have been diagnosed, of whom 1 115 687 (64%; range 30–100%) are reported to be on treatment (Figure 17) [5]. Based on available data, at least one in three people (36%; range 0–70%) with diagnosed HIV infection in Europe and Central Asia are therefore not currently receiving ART.

Figure 17. Proportion of people living with diagnosed HIV who are on treatment, Europe and Central Asia, 2018³



³ Monaco and Andorra were excluded from this figure due to too few cases.

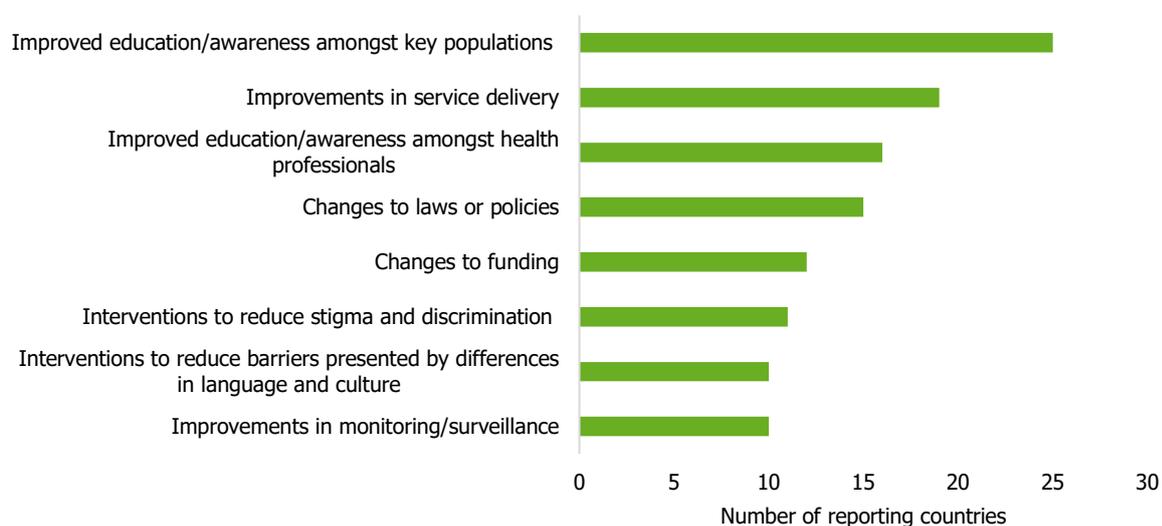
The proportion of people who have tested positive for HIV but are not accessing treatment varies by sub-region. In the 19 West sub-region countries that reported data, around one in 10 people living with diagnosed HIV (9%; range 0–31%) are not benefitting from HIV treatment. In the 10 Centre sub-region countries that reported data, one in four people living with diagnosed HIV (27%; range 15–50%) are not benefitting from HIV treatment. In the 12 East sub-region countries that reported data, around one in two people living with diagnosed HIV (54%; range 5–70%) are not benefitting from HIV treatment.

Barriers to testing

In 2016, countries reported that the main barriers to effective provision of HIV testing services are related to availability of community-based services, funding, and health professionals' knowledge and attitudes. The main barriers to increasing the uptake of HIV testing were identified as stigma and discrimination within the key population and among health professionals, and limited availability of community-based testing services.

In 2018, countries were asked to describe what they had done to address previously identified barriers to testing (Figure 18). The main actions countries reported they had taken related to improvements in education and awareness among key populations (25 countries) and health professionals (16 countries), improvements in service delivery (19 countries) and changes to laws and policies (15 countries).

Figure 18. Actions taken to address barriers to provision and uptake of HIV testing across Europe and Central Asia, 2018



Three countries reported new barriers to testing which had not been highlighted in previous monitoring rounds. In Germany, there are concerns that a new law requiring registration and obligatory STI counselling for sex workers may reduce acceptance and provision of voluntary counselling and testing services. In Greece, a requirement for testing to be prescribed in order for it to be covered by health insurance creates barriers for those without an insurance number. In the UK, there are concerns that an agreement between the health service and the immigration authorities to share addresses of migrants without consent may deter people with HIV from accessing healthcare services, including testing⁴.

⁴ Since this data was submitted, this practice has been successfully challenged and discontinued.

Conclusions and priorities for action

Limitations

Variations in data sources, sample sizes, timeframes, analysis and quality limit the scope for directly comparing data between countries. Although accompanying definitions were provided alongside questions as much as possible, in practice some countries use slightly different definitions, so caution is required when making comparisons.

How countries model their estimates for the first stage of the continuum of HIV care (the number of all people living with HIV) can also affect what data they can produce. For example, Spectrum, the tool that 20 countries use to estimate the total number of PLHIV (both diagnosed and undiagnosed), does not allow for disaggregation by key population. This helps to explain the even lower numbers reporting data for stage 1 of the continuum of care in key populations.

Data submitted to the Dublin Declaration monitoring process is self-reported by national health authorities. For some indicators, the questions require qualitative answers (for example, coverage questions which ask the respondent to answer 'high, medium or low') which may be prone to subjective bias, limiting comparability. This was a particular issue for respondents when determining the level of coverage for testing interventions, as this may vary within the country (e.g. urban versus rural areas) or between key populations.

Although using the number of tests per 100 000 of the general population helps to improve comparability between countries, there are still limitations to this. For example, countries may not exclude repeat tests when reporting on the number of tests. Furthermore, countries were not asked to provide data sources and sample sizes for data submitted on number of tests and positivity rates (which would probably provide insight into the considerable variation in positivity rates between countries). It is also important to note that service provision, for example the existence of sexual health clinics, likely differs across settings, which could explain the difference in number of tests. The offer of testing within each of these settings will also differ (not everyone in all testing settings is offered an HIV test, so the decision on who is offered is likely to affect the positivity rate), thus partially explaining the differences in positivity rates. Finally, there are still considerable levels of missing data which makes it difficult to generalise findings for the entire European and Central Asian region. It is reasonable to assume that countries able to provide more complete data are also those that are likely to be doing better, so the picture presented in this report may be overly optimistic about the situation in the region.

Overall progress

People's knowledge of their HIV status through HIV testing is crucial to the success of the HIV response and is the gateway to HIV prevention, treatment, care and other support services. Despite considerable progress made in reducing HIV transmission, one in five people living with HIV across Europe and Central Asia remain unaware of their HIV status. The equivalent figure for key populations at increased risk of HIV across Europe and Central Asia is possibly higher, but disaggregated data for these groups are lacking.

Amongst people living with HIV who have been diagnosed in the WHO European region, 53% were diagnosed late and face the possibility of increased morbidity and early death as a result. Further efforts to expand testing services and increase accessibility and availability to key populations must be undertaken if the proportion of people who are living with undiagnosed HIV or diagnosed late is to be reduced.

Forty countries reported that they have guidelines on HIV testing in place. Further investigation is required to find out whether the eight countries that do not have national HIV testing guidelines use alternative guidance to enable them to effectively design and implement testing services; for example, international guidance such as the 2015 WHO Consolidated Guidelines on HIV Testing Services may be followed. However, given that each country will require a context-specific approach depending on HIV prevalence rates and which key populations are present, national guidelines which are tailored to the country context are still preferable.

It is encouraging that the majority of countries with guidelines published prior to 2015 report plans for revision in the next two years. As testing innovations progress, it is crucial that national HIV testing guidelines are kept up to date. For each of the testing interventions considered in this report, more countries were implementing them than had them included in their testing guidelines. Although it is positive that a lack of guidance is not a barrier to implementing additional testing interventions, guidance should be regularly updated to ensure that there is consistent provision of high-quality and accessible testing services across the country.

Coverage of testing services appears to vary quite significantly between the different types of testing interventions, with testing in traditional health settings having generally higher coverage than testing in home or community settings. Since testing in home and community settings expands opportunities for testing among individuals who may find testing in traditional health settings less accessible or acceptable for various reasons, there is evidently a need to scale up coverage of such testing interventions. Despite higher coverage in traditional health settings, it is surprising that such well-established interventions such as routine antenatal HIV testing are still not universally performed at high levels in some countries in Europe and Central Asia.

Also concerning is the significant divergence between implementation of community-based testing which is delivered by medical providers, versus lay providers. Forty-one countries reported that they implement community-based testing delivered by medical providers, while only 19 countries implement community-based testing delivered by lay providers. Although three countries reported changes in laws on lay-provider testing since 2016, there has been no change in the number of countries implementing lay-provider testing between 2016 and 2018. The lack of progress that has been seen in Europe and Central Asia is disappointing given that the 2015 WHO testing guidelines explicitly support testing by trained lay providers to increase access to HIV testing services through community-based approaches. Countries previously reported that lack of availability of community-based testing was a major barrier to uptake of testing in the 2016 Dublin Declaration round.

Countries can only ensure that expanded testing services are available and accessible if they are also monitoring uptake of these services. In particular, it is crucial that data on testing uptake rates can be disaggregated by key populations at increased risk of acquiring HIV. The limited availability of data on testing rates among key populations, in particular amongst migrants, prisoners and sex workers, are concerning. Further efforts are needed to survey key populations in many countries so there is a better sense of what needs are unmet.

There is still clearly room for improvement regarding access to testing for undocumented migrants. The revision of policies by countries which do not provide free-of-charge testing for undocumented migrants is needed for the benefit of individual and public health. Furthermore, as the majority of migrants acquire HIV post-migration [13], countries should not rely on HIV screening upon entry, and must ensure accessible HIV testing services are available for their migrant population to enable regular and frequent testing.

As well as measuring uptake among key populations, it is also important that countries monitor where people get tested, and ensure that testing interventions are targeted effectively. Data availability on the number of tests and positivity rates of testing interventions in different settings are very limited. Data were most available for community-based testing delivered by medical providers, but even then, less than half of countries who stated they implement this intervention could provide data on the number of tests and the positivity rate. The intervention that fared worst was again lay-provider testing. The reasons behind this warrant further investigation, but it is surprising that even the 21 countries who are represented within the COBATEST network⁵ – an EU initiative aiming to standardise data collection by community-based testing sites and integrate this data into national surveillance systems – were unable to provide data.

All countries reported positivity rates higher than 0.1% for their routine testing interventions – indicating that these interventions are cost-effective. Positivity rates were also significantly higher for targeted interventions such as community-based testing services and assisted partner notification. Increasing monitoring of testing in all settings will increase understanding on the effectiveness of different testing interventions, and how well they are working in differing country contexts.

Roughly half of the 52 reporting countries could not provide data on linkage to care, which is concerning given that providing testing without effective linkage to care is of limited benefit for those living with HIV. Based on the data reported, rates of linkage to care are high on average across the WHO sub-regions, but there is significant variation within regions. For example, six countries in the West sub-region and two countries in the Centre sub-region report 100% linkage to care, while Estonia, in the East sub-region reports only 34% of those diagnosed with HIV were linked to care in the last 12 months. Furthermore, data from the continuum of HIV care indicates that there is a substantial drop-off between PLHIV being diagnosed and then treated, in all sub-regions but particularly in the East sub-region.

⁵ COBATEST Network - <https://cobatest.org/>

Priorities for action

- National HIV testing guidelines ensure a consistent national approach. Guidelines should incorporate guidance on testing in non-traditional settings, particularly testing in the community or at home, including how to establish clear pathways into care. The guidelines should also include specific recommendations for key populations on testing frequency and how testing should be monitored to establish impact on HIV transmission.
- HIV testing in non-traditional settings should be provided across Europe and Central Asia to increase accessibility to key populations at higher risk of acquiring HIV.
- Expanded access to testing should be accompanied by improved linkage to care and treatment. The reasons behind poor linkage to care need to be investigated and tackled.
- Legal barriers to provision of certain testing interventions, such as testing administered by a lay provider, should be removed. Other laws which reduce accessibility to testing for key populations, such as criminalisation of sex work, should be reconsidered.
- Increasing access to HIV testing will also require action to address the stigmatisation of people living with HIV and those key populations affected by HIV – such as MSM, PWIDs and sex workers.

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Annex 1. Testing guidelines

WHO sub-region	Country	Year published	Revision planned	Do the guidelines contain the following interventions?												
				Community-based HIV testing	Self sampling	Self testing	Lay provider	Antenatal	Sexual health	Primary care	Secondary care	Other	Partner notification	HIV indicator condition		
West	Andorra	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Austria	1994	Yes	No	No	No	No	Yes	No	Yes	Yes	No	No	No		
	Belgium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Denmark	2013	No	Yes	Planned	Planned	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	
	Finland	2010	Yes	Yes	No	Planned	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	
	France	2017	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Planned	Yes	
	Germany	2015	Yes	Yes	Planned	Planned	No	Yes	Planned	Yes	Yes	Yes	No	No	Yes	
	Greece	2014	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	
	Iceland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Ireland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Israel	2014	No	Yes	No	No	No	No	No	Yes	Yes	Yes	No	Yes	No	
	Italy	2011	Yes	Yes	Planned	Yes	Planned	Yes	Yes	Yes	No	Yes	No	Planned	Planned	
	Liechtenstein	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Luxembourg	2005	Yes	No	No	Planned	Planned	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
	Malta	2017	No	Planned	Planned	Planned	No	Yes	Yes	Yes	Yes	Yes	Planned	Yes	Yes	
	Monaco	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Netherlands	2016	Yes	No	No	No	No	No	Yes	Yes	No	No	No	Yes	Yes	
	Norway	2017	Yes	Yes	Yes	Planned	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	
	Portugal	2014	Yes	Planned	Planned	Planned	Planned	Yes	Yes	Yes	Yes	Planned	Planned	Planned	Yes	
	San Marino	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spain	2014	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Planned	Yes		
Sweden	2017	No	Yes	No	No	No	No	Yes	No	No	No	No	Yes	No		
Switzerland	2013	Yes	Yes	No	Planned	Yes	Yes	Yes	No	Yes	No	No	No	Yes		
United Kingdom	2016	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Centre	Albania	2013	Yes	Planned	No	No	Planned	Yes	No	Yes	Planned	No	Yes	Yes		
	Bosnia & Herzegovina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Bulgaria	2015	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Planned	Planned	
	Croatia	2005	No	Yes	No	No	No	No	No	Yes	Yes	No	Yes	Planned		
	Cyprus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Czech Republic	2016	No	No	No	No	No	No	Yes	No	No	No	No	Yes	No	
	Hungary	2002	No	No	No	No	No	No	No	Yes	Yes	Yes	No	No	No	
	Kosovo	2017	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	Yes	No	
	North Macedonia	2011	Yes	Yes	No	No	Planned	No	No	No	Planned	Planned	No	Yes	Planned	
	Montenegro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Poland	2001	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No	No	No	
	Romania	2017	Yes	Planned	Planned	Planned	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	
	Serbia	2007	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	
	Slovakia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Slovenia	2009	Yes	Yes	No	No	No	No	No	Yes	Yes	Yes	No	Yes	Yes	
Turkey	2013	Yes	No	No	No	No	No	Planned	Planned	Yes	Yes	Planned	Planned	Planned		

WHO sub-region	Country	Year published	Revision planned	Do the guidelines contain the following interventions?											
				Community-based HIV testing	Self sampling	Self testing	Lay provider	Antenatal	Sexual health	Primary care	Secondary care	Other	Partner notification	HIV indicator condition	
East	Armenia	2017	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
	Azerbaijan	2012	Yes	Planned	No	No	No	No	No	Yes	Yes	Yes	No	Yes	
	Belarus	2017	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
	Estonia	2012	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes	
	Georgia	2010	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	
	Kazakhstan	2015	Yes	Planned	No	No	Planned	Yes	Yes	Yes	Yes	Yes	No	No	
	Kyrgyzstan	2017	No	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes	No	No	
	Latvia	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Lithuania	2010	No	Yes	No	Planned	No	Yes	Planned	Planned	Yes	No	Yes	Yes	
	Moldova	2011	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	
	Russia	-	-	-	-	Planned	-	-	-	-	-	-	-	-	-
	Tajikistan	2014	Yes	Yes	No	No	No	No	No	No	No	Yes	No	Yes	
	Turkmenistan	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Ukraine	2005	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
	Uzbekistan	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Annex 2. Rates of testing among key populations (testing rate; timeframe; national/sub-national data; year, sample size)

WHO region	Country	Men who have sex with men (%)	Migrants (persons born abroad) (%)	Undocumented migrants (%)	People who inject drugs (%)	Prisoners (%)	Sex workers (%)	Other key population (%)
West	Andorra							
	Austria	52.9 (EMIS-2017)			41 (12 months; sub-national; 2017; 2 305)			
	Belgium	65.9 (EMIS-2017)						
	Denmark	52.3 (EMIS-2017)						
	Finland	42 (EMIS-2017)						
	France	70 (EMIS-2017)	14.1 (12 months; National; 2016; 1464)		55.4 (12 months; sub-national; 2012; 351)			
	Greece	55 (EMIS-2017)		16.3 (12 months; sub-national; 2014; 141)	62 (12 months; sub-national; 2016; 616)			Roma 24.2 (12 months; national; 2015; 582)
	Iceland	56.5 (EMIS-2017)						
	Ireland	56.3 (EMIS-2017)					80 (12 months; sub-national; 2017; 20)	
	Israel	60.9 (EMIS-2017)						
	Italy	56.7 (EMIS-2017)			34 (12 months; national; 2016; 46 425)			
	Liechtenstein							
	Luxembourg	62.3 (EMIS-2017)				99.9 (24 months; national; 2016; 1 880)		Asylum seekers 100 (24 months; national; 2014-16; 3 324)
	Malta	52.7 (EMIS-2017)						
	Monaco							
	Netherlands	60.7 (EMIS-2017)						
	Norway	49.6 (EMIS-2017)						
	Portugal	60.6 (EMIS-2017)				47.9 (12 months; sub-national; 2016; 3 439)		
	San Marino							
	Spain	61.5 (EMIS-2017)					80 (12 months; national; 2016; 39 337)	
Sweden	38.9 (EMIS-2017)				99 (12 months; sub-national; 2016; 1 671)			
Switzerland	59.4 (EMIS-2017)					66 (12 months; national; 2016; 579)		
United Kingdom	62.6 (EMIS-2017)				77 (12 months; national; 2016; 2 370)	17.5 (12 months; national; 2016; 37 474)	Black African people 73 (12 months; national; 2016; 62 570)	
Germany	45.9 (EMIS-2017)							

WHO region	Country	Men who have sex with men (%)	Migrants (persons born abroad) (%)	Undocumented migrants (%)	People who inject drugs (%)	Prisoners (%)	Sex workers (%)	Other key population (%)
Centre	Albania							
	Bosnia & Herzegovina	39.1 (EMIS-2017)						
	Bulgaria	54.8 (EMIS-2017)			100 (12 months; national; 2016; 215)		99.6 (12 months; national; 2016; 259)	
	Croatia	43.5 (EMIS-2017)						
	Cyprus	65.7 (EMIS-2017)			24 (12 months; national; 2016; 279)			
	Czech Republic	52.7 (EMIS-2017)			55.1 (12 months; national; 2016; 962)	6 (12 months; national; 2016; 22 481)		
	Hungary	43 (EMIS-2017)						
	Kosovo							
	North Macedonia	45.2 (EMIS-2017)			38.9 (12 months; sub-national; 2017; 288)	5.1 (12 months; sub-national; 2017; 200)	44.2 (12 months; sub-national; 2014; 164)	
	Montenegro							
	Romania	49 (EMIS-2017)			19 (12 months; sub-national; 2017; 2 742)		23 (12 months; sub-national; 2017; 504)	
	Serbia	43.6 (EMIS-2017)			19.3 (12 months; sub-national; 2013; 399)		49.2 (12 months; sub-national; 2013; 250)	
	Slovakia	38 (EMIS-2017)						
	Slovenia	49.8 (EMIS-2017)				8 (12 months; national; 2017; 3 380)		
	Turkey	49.4 (EMIS-2017)						
Poland	50.5 (EMIS-2017)			0.61 (12 months; national; 2017; 34 704)				
East	Armenia	29.6 (12 months; national; 2016; 500)			16.5 (12 months; national; 2016; 500)		60.4 (12 months; national; 2016; 500)	
	Azerbaijan	69.7 (12 months; national; 2015; 500)			12.2 (12 months; national; 2015; 1 700)		37.2 (12 months; national; 2016; 586)	
	Belarus	65.6 (EMIS-2017)			59.7 (12 months; national; 2017; 1 660)		71.8 (12 months; national; 2017; 500)	
	Estonia	56.9 (EMIS-2017)			67 (12 months; sub-national; 2017; 112)		66 (12 months; national; 2016; 151)	
	Georgia	25 (12 months; sub-national; 2017; 4 250)			56 (12 months; national; 2017; 27 832)		40.2 (12 months; sub-national; 2017; 2 610)	
	Kazakhstan	72.8 (12 months; national; 2017; 1 001)			65.4 (12 months; national; 2014; 4 426)	93.7 (12 months; national; 2017; 2 668)	93.7 (12 months; national; 2017; 2 651)	
	Kyrgyzstan	20.2 (12 months; national; 2017; 4 772)			43.7 (12 months; national; 2017; 8 441)	49.1 (12 months; national; 2017; 2 975)	26.1 (12 months; national; 2017; 3 531)	
	Latvia	56.1 (EMIS-2017)				26 (12 months; national; 2014; 1 603)		
	Lithuania	39.6 (EMIS-2017)						

WHO region	Country	Men who have sex with men (%)	Migrants (persons born abroad) (%)	Undocumented migrants (%)	People who inject drugs (%)	Prisoners (%)	Sex workers (%)	Other key population (%)
	Moldova	62.3 (EMIS-2017)			48.8 (12 months; sub-national; 2017; 362)	7.3 (12 months; sub-national; 2016; 495)	31.7 (12 months; sub-national; 2016; 323)	
	Russia	69 (EMIS-2017)						
	Tajikistan				5.7 (12 months; national; 2017; 612 717)	2.6 (12 months; national; 2017; 612 717)		
	Turkmenistan							
	Ukraine	62.7 (EMIS-2017)			43 (12 months; national; 2017; 10 076)		58.2 (12 months; national; 2017; 5 043)	
	Uzbekistan							

Annex 3. Number of tests and positivity rates in different testing settings

Community-based HIV testing (conducted by a medical professional)				
Country	Number of tests in last 12 months	Testing rate per 100 000	The positivity rate (%)	% of HIV diagnoses identified in CBVCT
Bulgaria	23 324	326	0.25%	0.25%
Croatia	2 176	52	1.50%	20%
Cyprus	1 216	143	0.66%	9.50%
Czech Republic	5 868	56	0.53%	12.20%
Denmark	3 000	53	0.50%	7%
Estonia	9 946	756	0.40%	18%
France	56 339	84	0.87%	6%
Georgia	34 692	872	0.40%	19.80%
Germany	16 000	19	1%	6%
Greece	15 396	143	1.50%	31%
Latvia	4 712	239	4%	
Lithuania	3 569	124	2.30%	
Moldova	3 461	85	1.90%	7.90%
Norway	3 246	62	0.30%	4.60%
Poland	34 673	91	1.81%	32%
Portugal	18 392	178	1.28%	
Serbia	1 645	23	0.50%	8.30%
Slovenia	786	38	1.30%	16%
United Kingdom	20 134	31	0.60%	2%

Self sampling			
Country	Number of tests in last 12 months	Testing rate per 100 000	The positivity rate (%)
United Kingdom	22 085	34	

Routine antenatal HIV testing			
Country	Number of tests in last 12 months	Testing rate per 100 000	The positivity rate (%)
Bulgaria	70 766	989	0.004
Cyprus	9 477	1 117	
Czech Republic	118 657	1 124	0.005
Denmark	60 000	1 051	0.1
Estonia	13 721	1 043	0.03
Finland	51 447	938	0.08
Germany	811 000	987	0.11
Ireland	56 747	1 201	0.15
Kazakhstan	889 540	4 982	0.023
Latvia	19 745	1 003	0.3
Lithuania	45 180	1 564	0.04
Moldova	63 593	1 565	0.14
Netherlands	176 103	1 037	0.06
Romania	127 040	643	0.11
Serbia	10 609	149	0
Ukraine	760 244	1 785	0.17
United Kingdom	720 590	1 102	0.15

HIV testing in sexual health clinics			
Country	Number of tests in last 12 months	Testing rate per 100 000	The positivity rate (%)
Bulgaria	1 248	17	0.64
France	327 000	490	0.36
Italy	4 400	7	9.9
Kazakhstan	44 990	252	0.24
Moldova	243	6	1.23
Netherlands	87 660	516	0.33
Romania	1 054	5	2.09
United Kingdom	116 897	179	0.2

HIV testing in primary care			
Country	Number of tests in last 12 months	Testing rate per 100 000	The positivity rate (%)
Belarus	1 514 635	15 975	
Belgium	379 533	3 355	
Estonia	7 336	557	0.4
Germany	328 500	400	0.26
Kazakhstan	632 581	3 543	0.07
Portugal	242 947	2 349	

HIV testing in secondary care			
Country	Number of tests in last 12 months	Testing rate per 100 000	The positivity rate (%)
Belgium	341 121	3 016	
Bulgaria	46 564	651	0.184
Estonia	89 142	6 774	0.2
Kazakhstan	118 341	663	0.05
Lithuania	62 510	2 164	0.2
Luxembourg	20 754	3 602	1.16
North Macedonia	36 248	1 742	
Tajikistan	60 358	696	
United Kingdom	146 963	225	0.6

HIV testing in other health settings			
Country	Number of tests in last 12 months	Testing rate per 100 000	The positivity rate (%)
Belgium	6 821	60	
Bulgaria	299 364	4 185	0.0081
Cyprus	67	8	1.49
Luxembourg	57 908	10 049	0.19
Moldova	85 927	2 115	0.1
Serbia	76 367	1 073	0.25

Assisted partner notification			
Country	Number of tests in last 12 months	Testing rate per 100 000	The positivity rate (%)
Lithuania	31	1	3.2
Netherlands	862	5	4.3
Tajikistan	7 337	85	
United Kingdom	1 860	3	3.9

HIV indicator condition-guided testing			
Country	Number of tests in last 12 months	Testing rate per 100 000	The positivity rate (%)
France	5 430 000	8 134	0.2
Kazakhstan	389 832	2 183	0.19
Kyrgyzstan	66 076	1 095	
Lithuania	3 785	131	1.98
Moldova	17 811	438	1.4
Tajikistan	59 781	690	
Ukraine	315 744	741	2.1
United Kingdom	4 716	7	1.9

**European Centre for Disease
Prevention and Control (ECDC)**

Gustav III:s Boulevard 40, 16973 Solna, Sweden

Tel. +46 858601000

Fax +46 858601001

www.ecdc.europa.eu

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