

HIV in the European Region: Using Evidence to Strengthen Policy and Programmes

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“The number of HIV cases in the WHO European Region continues to increase and by 2011 reached over 1.2 million individuals. Between 2006 and 2010 there have been 127 new diagnoses each year per million people in the Region”

This policy brief draws upon systematic reviews and secondary data analyses regarding HIV among key vulnerable populations in the European Region from the full report, “HIV Epidemics in the European Region: Vulnerability and Response”.

The epidemic situation

The number of HIV cases in the WHO European Region continues to increase and by 2011 reached over 1.2 million individuals. Between 2006 and 2010 there have been an average of 127 newly diagnosed HIV infections each year per million people in the Region. **The continuing increase in new HIV cases in the European Region is largely attributable to the epidemics in Eastern Europe and Central Asia** (called ‘East’ in this report)—see Figure 1. An average of 74 and 11 newly diagnosed HIV infections per million were reported in Western Europe (‘West’) and in Central Europe (‘Centre’) between 2006 and 2010. In contrast, 273 new diagnoses per million population were reported in the East. In those five years, **new diagnoses were relatively stable in the West and Centre, but increased (by around 30%) in the East, with the highest rates of new diagnoses in Estonia, Russian Federation and Ukraine.** It is important to note that case report data is only as robust as the HIV surveillance systems producing them.

All relevant citations and reviewed evidence are contained in the full report. The review covers the following 53 countries of the WHO European Region and Lichtenstein:

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

Centre: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Hungary, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia, the former Yugoslav Republic of Macedonia, Turkey

East: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan



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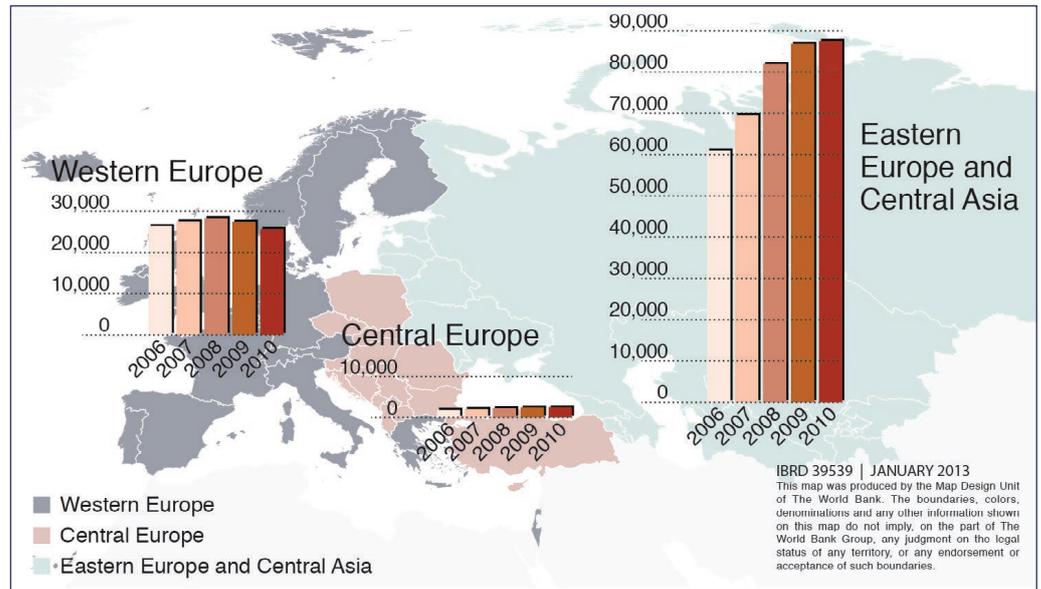
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Figure 1: Annual Number of HIV Case Reports by European Region, 2006 – 10

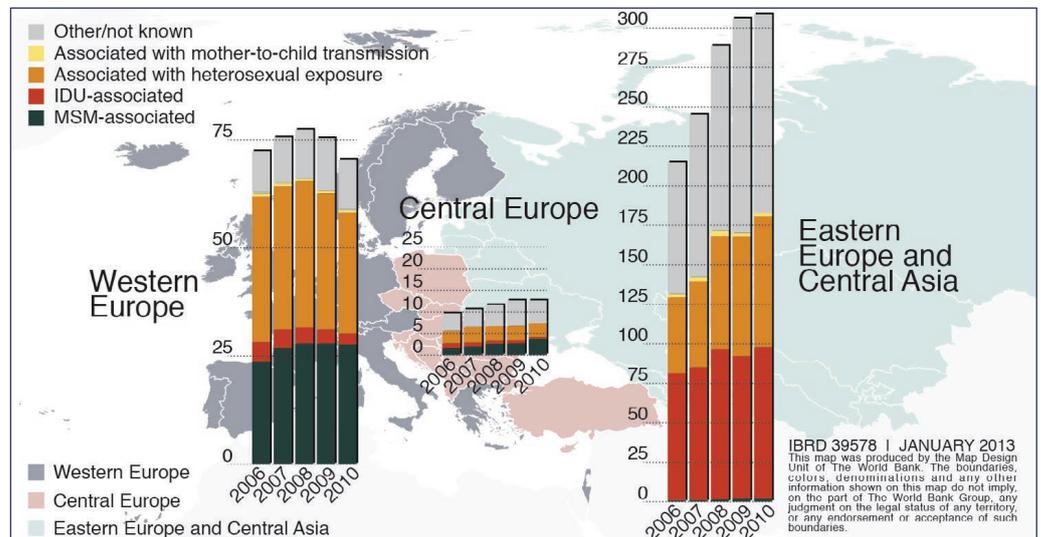


Sources: ECDC and WHO Regional Office for Europe HIV/AIDS surveillance in Europe (2011) and Russian AIDS Centre Report (2011). Data for most recent years may be revised due to delays in case reporting.

...new diagnoses increased in the East, with the highest rates of new diagnoses in Estonia, Russian Federation and Ukraine.

Three key populations at high risk contribute disproportionately to the European Region epidemic: people who inject drugs (PWID), sex workers (SW), and men who have sex with men (MSM). Figure 2 shows European Region HIV diagnoses reported per million population by reported exposure—for PWID (or ‘Injecting Drug Users’, IDU) in red, for all heterosexual exposures including sex work-related exposure in orange, and for MSM in green.

Figure 2: Annual HIV Case Reports per Million Population by European Region and Reported Exposure for PWID (or Injecting Drug Users, IDU), 2006 – 10



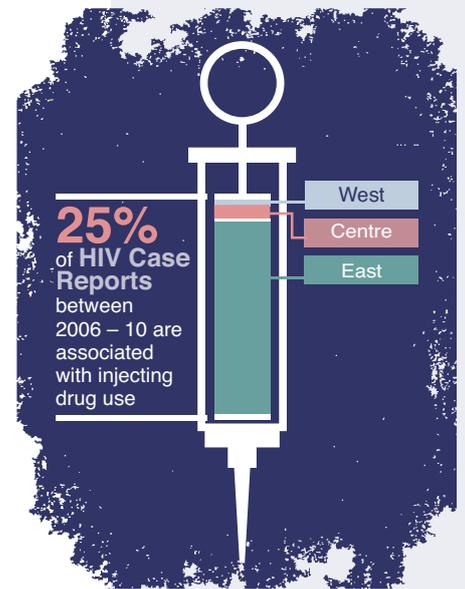
Sources: ECDC and WHO Regional Office for Europe HIV/AIDS surveillance in Europe (2011) and Russian AIDS Centre Report (2011).

Note: Other not known = Between 2006 and 2010 there were 740 with other transmission risk, that is, either haemophilic/transfusion recipient or nosocomial infection. In the East, a large proportion of HIV case reports had no information on exposure type people who inject drugs; PWID = people who inject drugs IDU = injecting drug user; MSM = men having sex with men.

People who inject drugs

Between 2006 and 2010, 25% of case reports in the European Region were associated with injecting drug use, with much higher proportions in the East (33%) than West (5%) and Centre (7%). The rate of HIV diagnoses linked to injecting drug use is 25 times higher in the East compared

to the West and over 100 times greater in the East compared to the Centre. The countries with the highest levels of reported diagnosed cases among PWID in the European Region were Ukraine (153 per million people), Russian Federation (98 per million people), and Kazakhstan (78 per million people) (see Annex Figure 1). **HIV prevalence among PWID is highest in Estonia (55.3%), Spain (34.5%), Russian Federation (28.9%), Republic of Moldova (28.6%) and Ukraine (22.9%).** It is lowest in Albania, Croatia, Cyprus, Hungary, the former Yugoslav Republic of Macedonia and Slovenia. Though there are exceptions, risk factors found generally to be linked to HIV among PWID are: a history of injecting with previously used injecting equipment; injecting with greater frequency; injecting opiates as opposed to amphetamines; a longer history of injecting; and being of female gender. For example, data from Ukraine suggest that **female PWID** are at increased risk of psychological, physical (including sexual) and economic violence from male partners, which constrains capacity to negotiate safer sex and safer injecting practices and access to help services, consequently elevating their HIV risk. Contact with criminal justice agencies, including experience of incarceration, also emerge as risk factors for HIV. The available data, including qualitative reports, suggest a **relationship between street-based policing practices, including extra-judicial ones such as police violence, and increased HIV vulnerability**, including through reduced capacity for risk avoidance as a consequence of safety short-cuts and rushed injections borne out of a fear of detection or arrest.



Sex workers

HIV remains relatively low among female sex workers, with HIV prevalence levels mostly below the 10% mark (Annex Figure 2). **A history of injecting drug use is a prime risk factor for HIV among SWs in many countries.** Other factors associated with higher odds of HIV or STIs among SWs include: migration from Africa (though some studies show no such associations); lack of service contact through outreach; contact with HIV testing and STI services; street-based sex work; and unprotected sex with either non-paying partners or clients. **In the West, HIV prevalence is higher among male and transgender SWs than female SWs** (even when drug injecting is lower), reflecting the higher HIV prevalence among MSM, the main client group of male SWs. Consistent condom use with clients is generally the norm among SWs, but it is much less common with non-paying sexual partners. In countries where sex work is regulated, the benefits of this are **denied to migrant sex workers without legal residency rights** who are not accorded the same rights as non-migrants. There is some evidence that decriminalization of sex work can reduce incidences of violence and improve the mental health of sex workers. Sex work in the European Region has undergone changes, with the acquisition of clients often via internet and mobile phones, a growing number of indoor SWs across the region (off-street sex work), and increased involvement of women with migrant status who lack legal residency rights.

“...data from Ukraine suggest that female PWID are at increased risk of psychological, physical (including sexual) and economic violence from male partners, which constrains capacity to negotiate safer sex and safer injecting practices and access to help services, consequently elevating their HIV risk.”

Men who have sex with men

Sex between men was reported for 10% of all HIV diagnoses in the European Region and higher in the West (36%) than Centre (22%) or East (0.5%). From 2006 – 2010, the annual average HIV diagnoses linked to sex between men was in the West over 10 times higher than in the Centre, and almost 20 times higher than in the East (Annex Figure 3). It was highest in the United Kingdom (43.4 diagnoses per million people), Netherlands (43.0) and Spain (37.3). **But the Centre and East have witnessed marked increases in the number of reported diagnoses associated with sex between men in the last five years.** Overall, **HIV prevalence levels are highest in the West**, but vary from as low as 1.6% in Switzerland to nearly 20% in Spain. Primary HIV risk factors among MSM are: inconsistent condom use; unprotected anal intercourse; and a history of STIs. The epidemics among MSM in the West are likely to be perpetuated by a core group of MSM engaging in high risk behaviours with a high number of sex partners. Under reporting of MSM risk status in surveillance systems is likely in settings where social stigma is greatest, arguably in the East of the region.

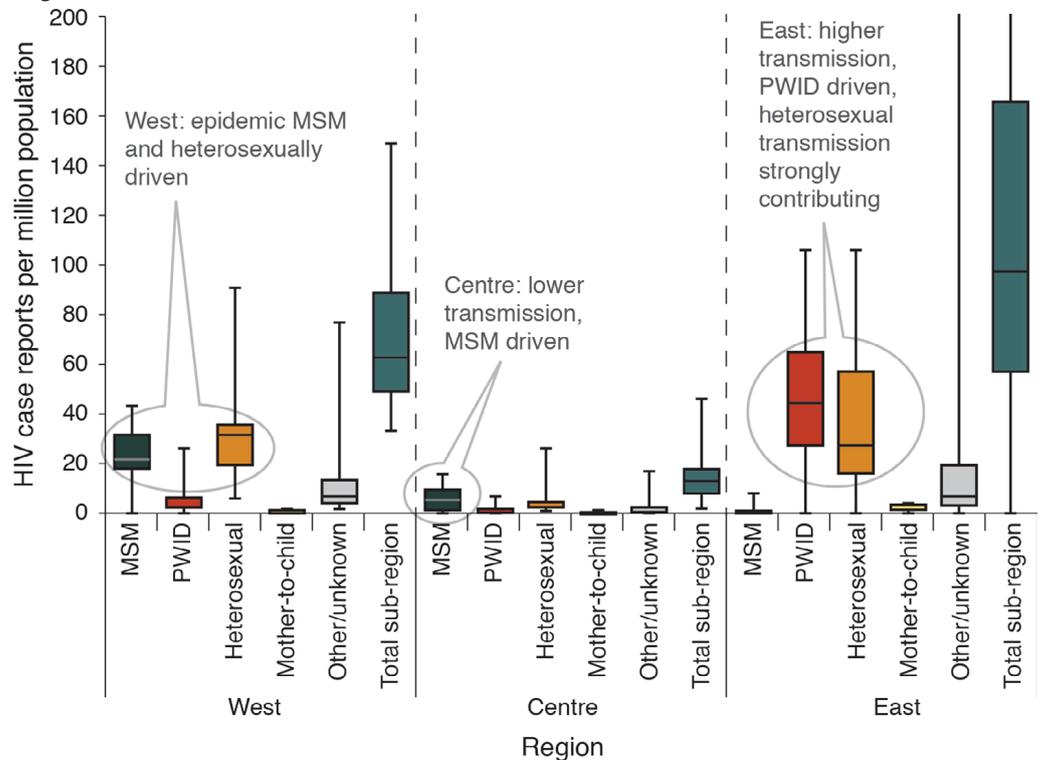
SWs involved in injecting drug use have higher HIV prevalence than SWs who do not inject drugs.

Intersecting epidemics

The HIV epidemics of the European Region in key populations at high risk are intersecting epidemics, in which sexual risks intersect with those related to injecting drug use. SWs involved in injecting drug use have higher HIV prevalence than SWs who do not inject drugs, and HIV prevalence in SWs is highest in the East where HIV prevalence is highest among PWID. SWs who inject drugs are more vulnerable not only to HIV, but also to violence, increased problems with mental health, reduced condom use and unwanted pregnancies. New analyses of vulnerability and risk factors conducted herein showed a strong and consistent association between an increased number of people imprisoned and increased HIV prevalence among PWID and FSWs. Prison, an effect of criminalisation of drug use and sex work, is a risk environment for the transmission of HIV.

A good way to compare the scale and nature of the European Region HIV epidemics is to compare HIV case data per 1 million population, according to the reported exposure. Figure 3, using box plots, illustrates the situation in the three regions by comparing 5-year averages of reported HIV cases by exposure. The exposure group 'heterosexual' includes sex work-related transmission. Even accepting how risk practices overlap, for instance, with some sex workers injecting drugs, and the variation in frequencies of reported HIV cases within each sub-region, data suggest that the epidemic is concentrated among MSM and PWID in the West, with far lower transmission in the Centre concentrated among MSM, and higher transmission in the East concentrated among PWID and strong contribution of heterosexual transmission. These dynamics are presented graphically below.

Figure 3: Comparison of 5-year Averages of Reported HIV Cases by Exposure in the Three Regions



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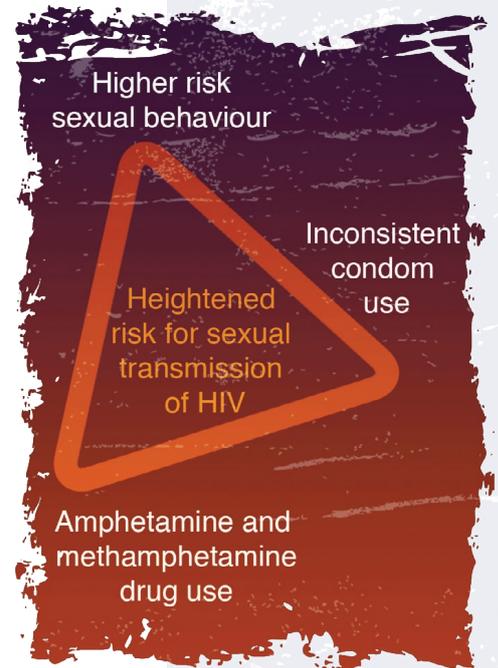
Source: ECDC and WHO Regional Office for Europe HIV/AIDS surveillance in Europe (2011) and Russian AIDS Centre Report (2011).

Note: MSM = men who have sex with men; PWID = people who inject drugs; Boxes show the median score as a line and the 25th percentile and 75th percentile of the data distribution as the lower and upper parts of the box. The area in the box therefore represents the middle 50% of the observations. The “whiskers” show the smallest and largest observation. Centre: Heterosexual exposure much higher in one country (Cyprus) than in all the others, explaining the maximum of 26 cases per million population. East: “other/unknown” category has two outliers at high level (Estonia 303 cases per million, and Russian Federation 211 cases per million).

Will the HIV epidemic spread beyond key populations at high risk?

In many countries in the European Region, it is unlikely that the HIV epidemic will spread much beyond the key populations at high risk if existing HIV prevention measures are maintained or enhanced. However, **there is potential for the epidemic to spread beyond PWID, SW and MSM—with increasing heterosexual transmission—in some countries in the East**, notably Ukraine, Republic of Moldova, Estonia and the Russian Federation. In these countries, surveillance among general population groups such as pregnant women should be reviewed and incorporated as a response to the epidemic.

In the East, there is emerging evidence of the potential for sexual transmission of HIV among PWID involved in sex work. The high prevalence of syphilis reported alongside HIV observed in the Russian Federation, Ukraine, Republic of Moldova and the Central Asian Republics suggests that conditions may exist for increased sexual transmission of HIV among SWs. In some central European countries including the Czech Republic, Slovakia, and increasingly Hungary, many injectors report amphetamines and methamphetamines as their primary drug, which can be associated with higher-risk sexual behaviours. The majority of PWID in surveys across the European Region report inconsistent condom use with their regular partners. Male PWID often have sexual partners who do not inject, and these partners can be at risk of sexual HIV transmission. Some studies in the East suggest that high proportions of MSM may inject drugs, while a substantial proportion of MSM in the region, especially in the East, report also having sex with women.



Are data collected to adequately track changes in epidemic trends and responses?

HIV surveillance activities are generally well established in the European Region. Among 50 countries considered (excluding Andorra, Lichtenstein, Monaco and San Marino), all have HIV case reporting systems. In a third of countries (18) there is evidence to suggest ‘comprehensive’ surveillance among PWID, MSM and SWs (i.e., monitoring HIV prevalence or risk in all three groups); in another third (18) there is ‘extensive’ surveillance (i.e., monitoring HIV prevalence or risk in two of the groups); in nine ‘focused’ surveillance (i.e., monitoring HIV prevalence or risk in one of the groups); and in five, a ‘basic’ approach relying solely on HIV case report - see Annex Figure 4.

Overall, surveillance of HIV prevalence or risk is better established among PWID than among SWs and MSM, with very little data available among people classified as migrants and male SWs. All but one country (Turkmenistan) in the Centre and East have generated survey-based estimates of HIV prevalence among PWID. **While there is a strong culture to collect and aggregate epidemic data, the systematic collection of routine data on the delivery of key interventions and combination service packages, and population sizes of PWID, SWs and MSM (the denominators for coverage estimates) is weak.** As a consequence, the data on coverage of HIV prevention programmes is patchy. A key challenge in collecting data to inform interventions is the regulatory and social context in which sex work, drug use and sex between men takes place. In contexts where sex work is heavily regulated or sex between men remains stigmatised, conducting HIV related surveillance studies among people with few rights or representation can create ethical or safety challenges. There are some useful lessons in good surveillance practice in the European Region, **including the European Men’s Internet Survey (EMIS) among MSM, the sentinel surveillance of HIV and risk among PWID in Spain, the United Kingdom and Italy, and sentinel surveillance among SWs in Central Asia.**

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Surveillance systems need to be better at assessing epidemic trends as well as giving indicators of intervention coverage.

HIV testing rates are higher in the East, especially in the Russian Federation. This may result from mandatory testing of migrants and the practice of 'opt-out' rather than 'opt-in' testing policies in various health service settings as well as an occupational requirement. There is some evidence that HIV testing contributes to behaviours that lead to reduced HIV risk among PWID and SWs and unprotected anal intercourse among MSM, but there is a need to evaluate the effectiveness and cost-effectiveness of wide-spread population testing that occurs in the East.

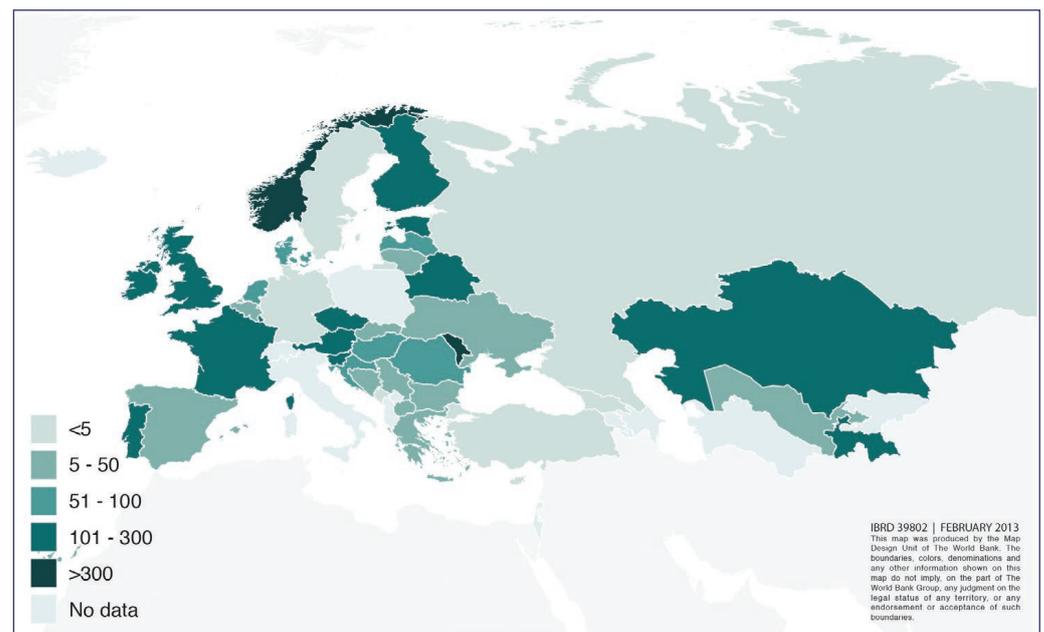
Taken together, data collection systems should be further strengthened regarding their reach of key populations at high risk, their frequency of data collection, and their capacity to assess trends in epidemic spread and intervention coverage. Importantly, surveillance systems provide unrealised opportunities to collate data on indicators of coverage of HIV prevention and the extent to which these are provided as part of a combination package.

Are the types and coverage of HIV prevention programmes adequate?

For PWID, the combination of needle and syringe programmes (NSP), opioid substitution therapy (OST), and antiretroviral HIV treatment (ART) is widely recommended as a core package. Evidence indicates that these interventions have enhanced HIV prevention impact when delivered in combination. The interventions need to be accompanied by uptake in HIV testing and counselling among PWID to facilitate a timely start of ART. Estimates of NSP, OST and ART coverage among PWID vary throughout the region, but coverage is generally lowest in the East, where HIV infection rates are higher and where HIV transmission is strongly PWID-driven. The availability of needles distributed to PWID varies considerably across the countries (Figure 4). Law enforcement, policing practices, and national commitments to HIV prevention can limit HIV prevention coverage potential. There are countries in the region where the legal and social environment has constrained, even prohibited, the development of proven-to-be-effective HIV prevention intervention, such as OST (in the Russian Federation, Uzbekistan, Turkmenistan and Turkey).

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Figure 4: Number of Needles Distributed Per PWID in 2009 or Most Recent Year, European Region.

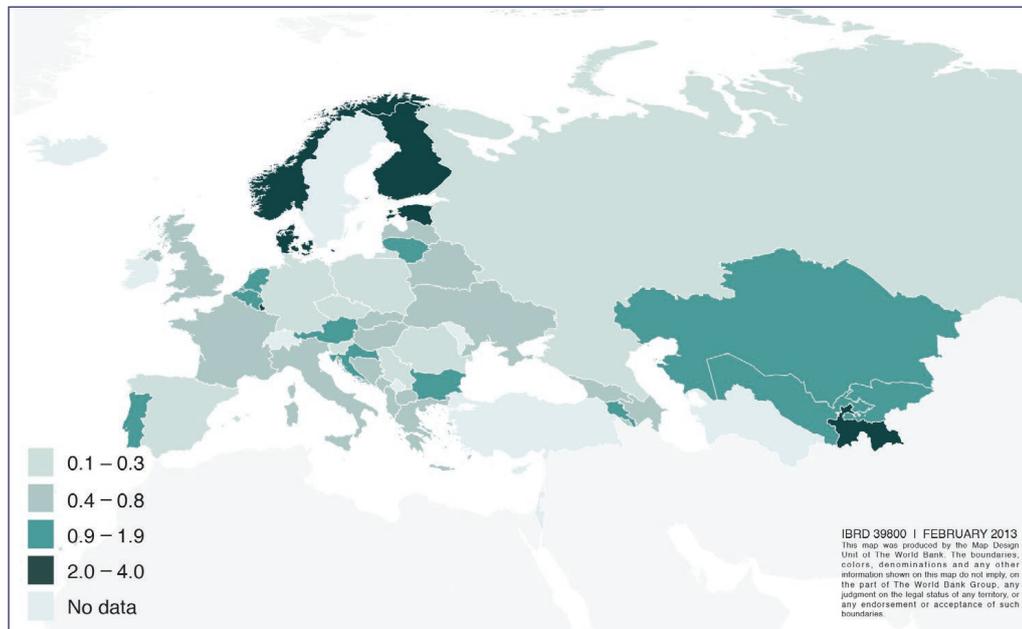


Sources: EMCDDA Statistical Bulletin 2011; Mathers et al, 2010.

Note: PWID = people who inject drugs.

Concerning sex work, there is a wealth of evidence showing the positive impact of specialist services in reducing risk of HIV and STIs among SWs from both the European Region and internationally. Targeted services have the advantages of opening at convenient times and staffed by people familiar with sex work related issues and are non-judgemental. Yet in many parts of the European Region the provision of specialist services is low and with a narrow focus on STI/HIV treatment rather than addressing broader social and health issues that affect SWs. Specialist sex worker services are relatively sparse in most countries (Figure 5). Across the region, the Russian Federation, Slovenia, Spain and Germany have the smallest number of sex worker-targeted services (<0.2 per 1000 FSWs). Finland, Norway and Luxembourg have the largest number (>2.8). Where sex work and drug use are closely linked (especially the case in the East), the lack of integration between sexual health services and drug treatment impairs SW service provision. Many countries in the West and Centre have legalised the selling of sex, but sex work remains a criminal and/or administrative offence in a significant number of countries, or remains unregulated (Figure 6). In countries, such as Germany, where sex work is legal and there are large network of sexual health clinics, sex-work specific services may be less important than in countries where SWs are highly marginalised.

Figure 5: Number of Specialist Sex Worker Services Per 1,000 FSWs in the European Region.



Sources: Data collected from: services4sexworkers.org; Global Fund; International AIDS Alliance; TAMPEP.

Notes: FSW = female sex workers; Services offered include a wide range of sexual health, social support and legal services and excludes standard STI clinics and health services that treat non-sex working populations.

Accurate data on HIV programme coverage are difficult to collect among MSM. However, available UNGASS and EMIS 2010 data suggest that coverage is highly variable across the region, and that direct comparison of reported data is hampered by the different ways countries define programme coverage. MSM can increasingly be reached with information via the internet, but access to the internet is unequal between countries and between types of MSM. Health service access and use is chiefly determined by the legislative and social environments affecting MSM. Figure 7 depicts a social inclusion index for each country, reflecting the legislative and social environments affecting MSM throughout the European Region.

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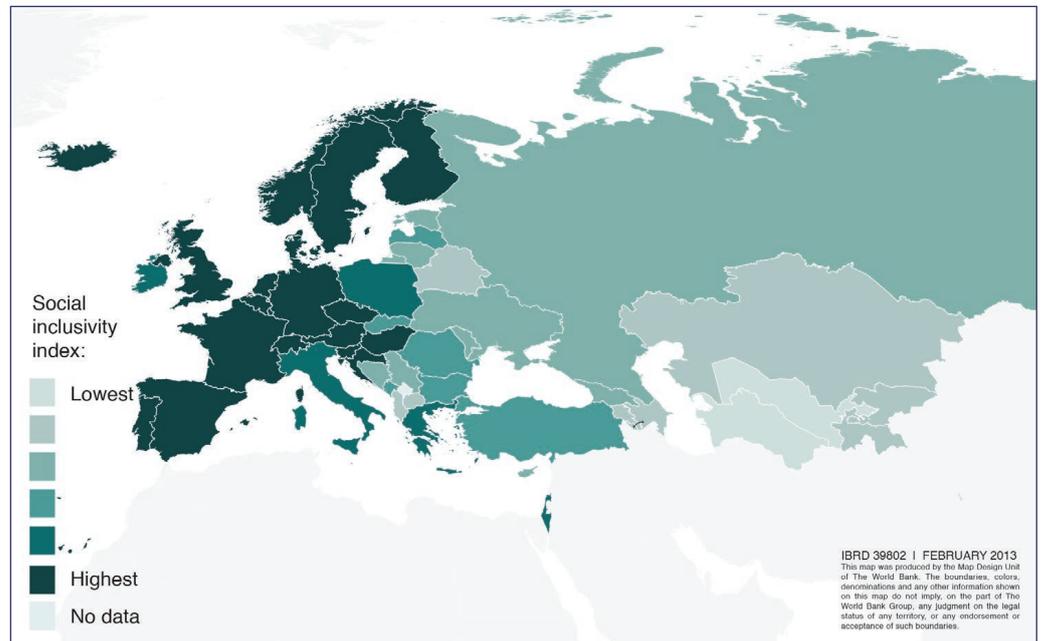
The enhanced HIV prevention effects of combining OST with NSP and ART have particular importance for countries like the Russian Federation and Ukraine which have experienced large HIV outbreaks among PWID.

Figure 6: Legal Status of Selling Sex in the European Region



Sources: EMCDDA Statistical Bulletin 2011; Mathers et al, 2010.

Figure 7: Legislative and Social Environments Affecting MSM Throughout the European Region



Source: Literature review, main report.

Enhancing HIV prevention: What policy makers and HIV programme implementers can do

In order to change the epidemic trajectories in the three sub-regions of the European Region—especially among populations of PWID, SWs and MSM—the following policy and programme recommendations should be implemented:

Preventing HIV among PWID and their sexual partners

1. Scale-up combination HIV prevention for PWID, especially in the Russian Federation, Ukraine and other countries in the East

The three core HIV prevention interventions of NSP, OST and ART work best if provided in combination and accompanied by voluntary HIV testing and counselling. Therefore, it is essential this combination of interventions are sufficiently scaled-up, especially in the East. Mathematical modelling shows that when core interventions are delivered in combination, a sufficient coverage level of the target population can be reached to reduce HIV incidence. The enhanced HIV prevention effects of combining NSP with OST and ART have particular importance for countries like the Russian Federation and Ukraine which have experienced large HIV outbreaks among PWID. The unavailability of OST in the Russian Federation is a serious deficit in service provision. Uzbekistan, Turkmenistan and Turkey also lack OST, and pilot projects need to be expanded in Kazakhstan. Turkey is the priority country to integrate NSP as part of its service provision for PWID of the five countries not providing NSPs (Andorra, Iceland, Monaco, San Marino and Turkey). Reviewed data suggests that there is also an urgent need to maximise the coverage and intensity of HIV prevention in prison settings (for instance, in Estonia and Lithuania an estimated 58% – 70% of PWID have been in prison at least once, and in the Russian Federation this figure is 37%). International agencies, including WHO, therefore recommend a combination of NSP; OST (and other drug dependence treatment); ART; prevention and treatment of STIs; condom programmes; targeted information, education and communication; diagnosis and treatment of, and vaccination for, viral hepatitis and prevention, diagnosis and treatment of tuberculosis to prevent HIV among PWID and their sexual partners. Community based outreach is also recommended as an extraordinarily effective means of reaching and delivering services. Additionally, evidence supports a place for supervised injecting centres and other interventions to create safer injecting environments, as well as the promotion of public policies and structural changes oriented to creating social environments in which populations at risk have the capacity to access low threshold helping services and reduce their HIV risk.

2. Implement interventions fostering social and environmental change, to enhance PWID-targeted HIV prevention programmes, especially in selected countries in the East

Overall, structural interventions to enable sufficient HIV prevention scale-up are most urgent in the East. The widely recommended package of combination HIV prevention gives little attention to social and structural interventions, despite evidence of the critical importance of social and structural factors shaping HIV risk reduction. The secondary distribution of sterile injecting equipment through peer networks of PWID is a practical yet under-formalised example of how to diffuse HIV prevention through social networks. Pharmacies provide a significant point of access for sterile syringes in many parts of the European Region, and this delivery channel can be further strengthened (for instance, pharmacy sales are legally restricted in Sweden). The introduction of supervised injecting centres in six countries in the European Region goes some way towards addressing the need to create safer injecting environments, and others countries could follow these examples. Broader social interventions, such as anti-stigma interventions and initiatives to promote the human and access to service rights of PWID should also be considered.

3. Promote policy reform and legal change, to create enabling environments for HIV risk reduction

Ecological evidence indicates elevated odds of HIV and HIV risk among PWID in settings without legal access to HIV prevention such as OST and NSP compared to settings with access. In some countries in the East, including Russian Federation, Ukraine and Georgia, the requirement for registration to access drug treatment can result in decreased use of harm reduction services, reduce access to employment opportunity, increase felt stigma, and leave

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Key targets for health interventions for SWs, in addition to HIV risk reduction, include reducing violence and unwanted pregnancies, and improving mental and emotional health.

“With the growing number of indoor SWs across the region, there is a need to reach off-street sex workers, for instance by conducting outreach on-line, contacting women via websites and circulating frequent emails about services.”

individuals more vulnerable to police intervention. The relaxation of legal restrictions to the provision of sterile needles and syringes increases their availability and accessibility, reducing levels of risk behaviour, as well as potentially levels of police harassment among PWID (and thus impact on epidemic spread). Interventions which bring about change in the legal environment seek to minimise effects of the criminalisation of drug users and of the prohibition of HIV prevention interventions. The WHO notes that “the alignment of drug control measures with public health goals is a priority”. If HIV risks are in part associated with the criminalization of drug use per se, as is increasingly evidenced internationally, then decriminalizing drug use is also a strategy to reduce such harm. Recommended interventions, which target changes in criminal justice systems, include:

- Police HIV prevention training and partnerships
- Developing alternatives to prison programmes, including coerced or mandated entry to drug treatment via community penalties and court orders
- The provision of sterile injecting equipment in prisons (where evidence suggests positive risk reduction effects)
- The provision of OST in prisons, linked to improved drug treatment outcomes including post release
- Interventions enabling legal aid and legal rights literacy to protect against rights violations (note that the HIV prevention impact of these has not been proven)

Preventing HIV among sex workers, their clients, and the sexual partners of their clients

1. Attain universal access to comprehensive and evidence-informed HIV services which are adapted to the specific health, welfare and protection needs of SW

Evidence shows that a larger HIV impact is obtained when services for SW address HIV/STIs simultaneously with the broader social and health problems of SW. However, in some countries, especially in the East, the focus of services has been on SWs who inject drugs rather than targeting the health and welfare needs of all SWs more broadly. Key targets for health interventions for SWs, in addition to HIV risk reduction, include reducing violence and unwanted pregnancies, and improving mental and emotional health. Sexual health interventions throughout the region need to focus not only on sexual safety negotiations with clients of SWs but also on promoting contraceptive use among the non-paying sex partners of SWs to prevent unplanned pregnancy and unprotected sex. The mandatory approach to HIV testing following SW arrest or detention must be stopped in favour of facilitating voluntary testing alongside counselling. It is also important that drug and sexual health services are sufficiently integrated to maximize their coverage potential. The vertical structure of health service provision, especially in the East of the region where SW and drug use are closely intertwined, compounds the problem of targeting HIV prevention to all those potentially in need, as there is often little linkage between drug treatment and sexual health services. In these contexts, HIV prevention services for PWID and SWs need to be integrated, with cross referrals and service linkages, where possible.

2. Change the nature and improve coverage of programmes for hard-to-reach , part time and migrant SWs across the European Region

The heterogeneous nature of sex worker populations in the European Region requires a context-specific and flexible intervention approach. Programme reach across the European Region is insufficient. Across the region, the Russian Federation, Slovenia, Spain and Germany have the smallest number of specialised sex worker-targeted services (<0.2 per 1000 FSWs). The rapidly changing sex worker scene in the European Region accentuates the need for innovative approaches to health service provision. With the increased use of the internet and mobile phones to acquire clients, there has been a diversification of indoor sex work and the increased involvement of women with migrant status (without legal residency rights) in sex work. With the growing number of indoor SWs across the region, there is a

need to reach off-street sex workers; for instance, by conducting outreach on-line, contacting women via websites and circulating frequent emails about services. The provision of translated materials and interpreters is a priority for short-term interventions, as a result of the increase in migrant women, in the West. In countries where sex work is regulated, the benefits of this are denied to migrant sex workers without legal residency rights who are not accorded the same rights as non-migrants. While it is fundamental that HIV prevention interventions specifically target SWs, including those not involved in drug use, this is harder to do among those who may not define themselves as connected to the sex industry. One approach to including this population is to incorporate HIV prevention interventions inside change strategies that simultaneously address the social welfare of sex workers and their social determinants of health, including disparities in employment opportunity for women, income and access to welfare services.

3. Within the combination prevention strategy, enhance community-level interventions to address underlying and contributory factors of SW's HIV risk

There have been increased calls for applying a pragmatic 'harm reduction' approach to sex work as more commonly applied in relation to drug use. A harm reduction framework for sex work seeks to envisage how a variety of harms related to sex work might be relevant, directly or indirectly, to HIV prevention. One of the key concerns is violence. The data show that violence experienced by SWs in family, social and work relationships is contextualised by broader social and structural violence feeding social stigma and discrimination. Other effects are reduced self-esteem and ability to negotiate safer practices for fear of further violence, increasing drug use to manage the stress of violence or forced relocation of sex work to less familiar or safe areas. The significance of violence in the everyday lives of SWs emphasises the need for envisaging HIV prevention inside a social and structural intervention approach to reducing sex work risks of which HIV is one. Community-level interventions may facilitate some of the social changes required to improve social acceptance and protection of SW, including regarding the practices of police and health care professionals. Therefore, in the short and medium-term, emphasis should be given to community-level interventions, such as the development of managed street sex work zones, which have shown positive effect in reducing incidences of violence and providing a safer place to work. Managed street zones need consent of local communities, and need to clearly assign responsibilities to authorities to manage the zone. A long-term SW strategy may include the decriminalization of sex work across the region, since the evidence suggests that such a change would positively impact HIV prevention, including indirectly through the reduction in violence, incarceration rates and SWs' mental health problems.

Preventing HIV among men who have sex with men, including their female sexual partners

1. Scale-up HIV service models which improve reach and coverage of MSM with high-impact interventions

Effective measures to estimate coverage of services by MSM are urgently needed in order to monitor uptake of services. It is likely that coverage is highly variable across the region, with the legislative and social environment impacting upon service use by MSM. Studies have shown that paying for tests and other medical care is a major barrier to service uptake by MSM and should therefore be discontinued. Equally, condoms should be made freely available in all gay venues and known MSM meeting places and dedicated MSM-only test facilities may be needed. Voluntary HIV testing and counseling may offer prevention benefits in non-infected people. Evidence suggests that HIV testing can increase condom use for anal intercourse, but for HIV-negative men is a more effective HIV prevention strategy when accompanied by counselling on risk reduction. However, effective counselling is rare in contexts where specialised services are scarce. For full health impact, it is essential that links are made with other prevention services appropriate to the needs of MSM, particularly in the East where many MSM seem poorly informed of HIV risks linked to certain practices. Condom promo-

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2. Recognize the heterogeneous nature of populations of MSM and their living situations, and tailor interventions accordingly

One difficulty with the targeting of HIV prevention to MSM is that it tends to be based on interventions targeting homosexually-identified men. However, designated gay men's services and interventions may disproportionately fail to reach men of lower socioeconomic status, men from minority cultures and male sex workers. In some settings, significant barriers to service access exist for MSM with migrant status. In the former Soviet Union, HIV and STI treatment requires official residency documents; such a requirement excludes migrant MSM. In terms of reaching the target group, the internet is increasingly utilised to reach MSM with HIV communication, however, internet access is not equally distributed across countries, or across demographic groups within countries. It is generally less accessible to many in the East, especially in less affluent areas. In terms of social inclusion of MSM, the shift towards recognizing MSM in the West—for instance, through the legalization of civil partnerships between men—are important in that they contribute to an enabling context for health and citizenship, including potentially for HIV prevention. Community-level interventions may facilitate some of the social changes required to enable the wider social acceptance of homosexuality, including regarding the day-to-day practices of health, welfare and regulatory institutions, and especially the practices of police and health care professionals.

3. Attain legislative equality and full social inclusion of MSM, by promoting legal and societal change to decriminalise and de-stigmatise homosexuality

The legal situation facing MSM, and the social regulation of homosexuality, varies across the region. There is a clear pattern of increased restrictiveness in the East compared to the West. In part, this is because membership of the European Union requires the repeal of anti-homosexuality legislation, and the Treaty of Amsterdam requires its Member States to enact anti-discrimination legislation. Nineteen countries display every feature of an enabling environment in terms of legislation, social inclusion and acceptance, and the recognition of civil partnership or marriage. Turkmenistan and Uzbekistan do not, and sex between two consenting male adults remains illegal. In Turkmenistan and Uzbekistan criminal codes state that sex between men is punishable by imprisonment. Legal change is a prerequisite to the formulation of MSM-supportive, non-discriminatory and protective policies, as well as increases the validity of surveillance data. Access to mainstream sexual health provision for MSM can be impeded by staff hostility borne out of the dual stigma of homosexuality and HIV, and patient fears concerning breaches of confidentiality. Such concerns appear more acute in the East. For instance, social stigma appears to act as a deterrent to timely HIV testing, and levels of HIV testing are lower in the Centre and East. Governments should therefore act to:

- Remove legal prohibitions on sex between men
- Set up a mechanism to prosecute police involved in harassment, assault or extortion of MSM
- Require police to enforce the laws against assault for MSM on equal terms with the rest of the population
- Provide legal recognition and protection of same sex relationships.

Governments should therefore act to:

- Remove legal prohibitions on sex between men
- Set up a mechanism to prosecute police involved in harassment, assault or extortion of MSM

Preventing HIV through the strategic use of antiretrovirals

1. Maximise the coverage of ART in people living with HIV to enhance HIV prevention effect

Antiretroviral therapy (ART) was introduced in 1996. The increasing use of effective ART regimens in the region since then has resulted in fewer people developing AIDS, and an increase

in the recovery of people diagnosed with an AIDS-defining illness. With the exception of the East, declines in the number of AIDS cases have been recorded among both men and women. Access to ART varies across the region, with data between 2002 – 2006 suggesting that access to ART was inequitable in terms of gender in the Centre and the East, favouring women over men, and in terms of age in the East, favouring children over adults. In addition, key populations at high risk have disproportionately lower access to HIV treatment: in 2010, 62% of the reported people living with HIV acquired HIV infection through injecting drug use, whereas only 22% of those receiving ART were people who injected drugs. Importantly, ART can reduce viral load to undetectable levels. Strong evidence supports the efficacy of ART in preventing heterosexual HIV transmission. The highest priority must be to increase the number of people infected with HIV to receive ART, for both clinical and prevention benefits, while ensuring equitable access for all key populations in need.

2. Assess the potential impacts of pre-exposure prophylaxis in HIV negative key populations

In addition, there is a need to assess the potential impacts of using ART as a prophylaxis in sero-negative people among key populations in the the European Region. A landmark multi-country, randomized, placebo-controlled trial outside the European Region in sero-negative MSM and transgender women who have sex with men, reported a 44% HIV incidence reduction linked to pre-exposure prophylaxis (PREP). While these findings are encouraging, the potential limitations of this strategy to curb MSM-linked transmission needs to be considered, including side effects such as renal insufficiency, the potential emergence of drug resistance, long-term treatment effectiveness, behavioural risk compensation, medication-use fatigue, and the high cost. Given the absolute risk reduction of 2.26 percentage points reported in the study, about 44 individuals would have to receive pre-exposure prophylaxis to prevent one infection (it has been estimated that in the United States, preventing one infection over a 1-year period would cost almost US\$500,000, an amount about 20 times higher than providing ART to one person for a year). More research and consultation is needed in the European context.

Strong evidence supports the efficacy of ART in preventing heterosexual HIV transmission.

Contributing to HIV prevention by improving surveillance and research

1. Establish mechanisms for repeated measures of HIV prevalence and risk, as well as the collection and use of routine monitoring data to estimate programme coverage

Among PWID, HIV prevalence and behavioural studies need to be conducted in Turkey and Ireland where outdated evidence and HIV case reports suggests high prevalence of HIV. No surveys were identified in Iceland or Turkmenistan for PWID. In the context of economic decline across the region and the recent HIV outbreak in Greece and Romania, vigilance in monitoring HIV case reports as well as HIV prevalence/behavioural surveys (where they are currently none) are required. Routine data on the delivery of the three core interventions NSP, OST and ART, are of chief importance, and whether they are provided as a combination package to PWID.

Among SW, HIV prevalence and behavioural studies need to be implemented in Portugal and Turkey and improved in Estonia and Netherlands. This is particularly important given the lack of routine HIV/STI epidemiological data in relation to sex work in the European Region. The European Centre for Disease Control highlighted the limited scope of behavioural surveillance among SWs in EU countries usually collected through one-off surveys rather than on going or repeated surveillance at a national level. There was also little consistency in the type of indicators collected on SWs making comparisons difficult to draw. The routine collation of reported HIV or STI testing at SW services would facilitate an estimate of the effective coverage of services in relation to HIV prevention taking into account the need for consultation and protection of privacy. Routinely monitoring condom use with clients and non-paying

partners would also give an insight into sexual risk behaviours, as the high prevalence of gonorrhoea underscores the persistent sexual vulnerability of SWs.

Regarding male sex workers (MSW), studies were found in only six countries across the region, and all these studies found high prevalence of HIV in MSW (>5%). Portugal, Switzerland, Denmark, Ireland, Greece, France and Luxembourg also report an above average number of HIV cases among MSM and should consider implementing HIV prevalence studies among MSW. Slovakia, Poland, Luxembourg, and Italy—countries of HIV prevalence in MSM above 5%—need to implement repeated studies for monitoring HIV prevalence and risk behaviours.

2. Develop a centralised portal for the synthesis of surveillance and survey data to enable cross region comparisons

At present there is no centralised portal for the collation and synthesis of HIV prevalence data at the the European Regional level, a former responsibility of EuroHIV. The development and maintenance of monitoring activities at a national level could be aided by the European wide central collation of core data on HIV prevalence and risk behaviours. The extent of surveillance among PWID in EU countries is likely an indirect consequence of the central collation system operated for HIV prevalence among PWID by the European Monitoring Centre for Drugs and Drug Addiction, EMCDDA. Data on directly measured HIV prevalence among vulnerable populations of PWID, SW and MSM should be collated centrally. Consideration should also be given to collecting risk behaviours data centrally, as well as data from other populations at risk, including migrants.

3. Include monitoring indicators of how the social and structural context mediate HIV

Surveillance systems in the European Region are poorly oriented to capturing indicators of risk environment. They therefore need to give more importance to tracking the main risk factors governing vulnerability and HIV exposure of PWID, SW and MSM, and relating these data to the legislative and policy context. This means for instance, monitoring the prevalence of violence among SWs and MSM, and the prevalence and contexts of policing practices, including extrajudicial practices, which may violate the human rights of PWID as well as potentially impact upon their HIV risk reduction capacity.

4. Know the size of key populations at high risk

All countries within the region should regularly assess and estimate the sizes of the three main key populations at high risk, and the plausibility of the estimates generated should be assessed robustly by a range of stakeholders including civil society groups from within the populations of interest. This should be undertaken at least every 10 years. It is also fundamental that HIV prevention responses integrate sexual health and drug-related health, and that surveillance systems are broadened towards such ancillary health indicators.

5. Conduct a systematic assessment of the robustness of methods used to monitor HIV risk in vulnerable populations over time

The review found that systems for collating HIV diagnoses need to increase the completeness and accuracy of risk factor data they collect. Subcategories of exposure among those exposed heterosexually should be considered, for example in the case of sexual partners of PWID. There is also a need to better monitor migrant status in HIV diagnoses reporting systems. Increased monitoring of the accessibility of HIV prevention responses to migrant PWID, SWs and MSM is also needed. Data on the coverage of combination interventions is not routinely or systematically collected in the region, and this should be changed, given the importance of access to a combination of proven HIV interventions. HIV related surveillance activities should be conducted in full consultation with affected populations, and with appropriate rights protections in place. There are unrealised opportunities to collate surveillance data on indicators of HIV prevention intervention coverage, as outlined in 3rd generation

“It is also fundamental that HIV prevention responses integrate sexual health and drug-related health, and that surveillance systems are broadened towards such ancillary health indicators.”

surveillance guidelines. The collection and collation of data on the coverage of combination interventions is especially important.

6. Develop empirically-informed models of social and structural HIV prevention

The review identified structural indicators relating to criminalisation, low income, and gender inequality as important. But how these factors may directly or indirectly mediate pathways of risk towards HIV transmission is often unclear, as well as situation dependent. Wealth, for example, does not have a straightforward relationship to HIV. Gender inequality is reproduced non-linearly through situation specific interactions occurring simultaneously at the structural level (for example, via laws or policy), at the level of the community or household (for example, through social norms, values and networks), and through individual and interpersonal actions (for example, through risk negotiation and behaviour). A risk factor for HIV such as physical violence, for instance, may act as a proximal indicator of structurally determined social marginalisation indirectly mediated through a combination of gender and material inequalities. Clearly, HIV is an outcome of multiple contributing factors interacting together. There is therefore a need for an iterative and mixed-methods research approach, in which qualitative evidence helps to map risk environment pathways, which are further elaborated through multi-level epidemiology. Future social epidemiological research investigating HIV vulnerability in the region should address the criminalisation of vulnerable populations; drug use and sexual practices; the experience of social stigma and discrimination; migration; gender inequalities; and material inequalities; among others. Epidemiological and intervention studies of HIV among vulnerable populations need to better systematically delineate how micro-and macro-environmental factors combine to increase or reduce HIV risk.

Clearly, HIV is an outcome of multiple contributing factors interacting together.

Directing the response to where the need and returns are largest

The synthesis of case report and HIV prevalence data suggest that the allocation of HIV prevention resources should concentrate upon bolstering and expanding combination prevention responses targeting PWID and their sexual partners in the East of the European Region, introducing prevention responses among MSM in the East and Centre, and reinvigorating prevention responses among MSM in the West. With relatively low HIV prevalence in female sex workers, but strong associations between injecting drug use and sex work, and high heterosexually acquired HIV infections especially in the East, sex workers remain an important target population. In the West, efforts need to be directed particularly towards male and transgender SWs (their risk linked to the higher HIV prevalence among MSM, the main client group of male SWs).

The review of the HIV epidemics and responses in the European Region points to important differences in the region, which must be used to inform targeting of the response. It suggests that levels of risk behaviour among vulnerable populations are highest in the East. While the frequency of reported needle or syringe sharing is highly variable across PWID in the European Region, there are instances of particularly high levels of sharing in the East. Among SWs, the systematic review showed that condom use with clients was consistently higher in the West than East or Centre. Among MSM, the highest rates of condom use during anal sex emanate from studies in the West, with rates around 15% higher than those reported in the East. Reports of unprotected anal intercourse are also higher in the East than West or Centre. Most PWID across the region report inconsistent condom use with their regular partners, with a substantial minority reporting inconsistent condom use with their casual partners. HIV prevention interventions need to give priority to targeting the intersection of sex work and injecting drug use. The uptake of HIV testing needs to be increased but simultaneously increasing access to treatment and reducing stigma associated HIV positivity and the removal of structural barriers to employment and discrimination for those diagnosed.

“...strong associations between injecting drug use and sex work and high heterosexually acquired HIV infections especially in the East, sex workers remain an important target population.”

The review highlights the need for HIV prevention programmes to embrace social and structural interventions which aim to bring about a contextual change in the environments which mediate HIV risk.

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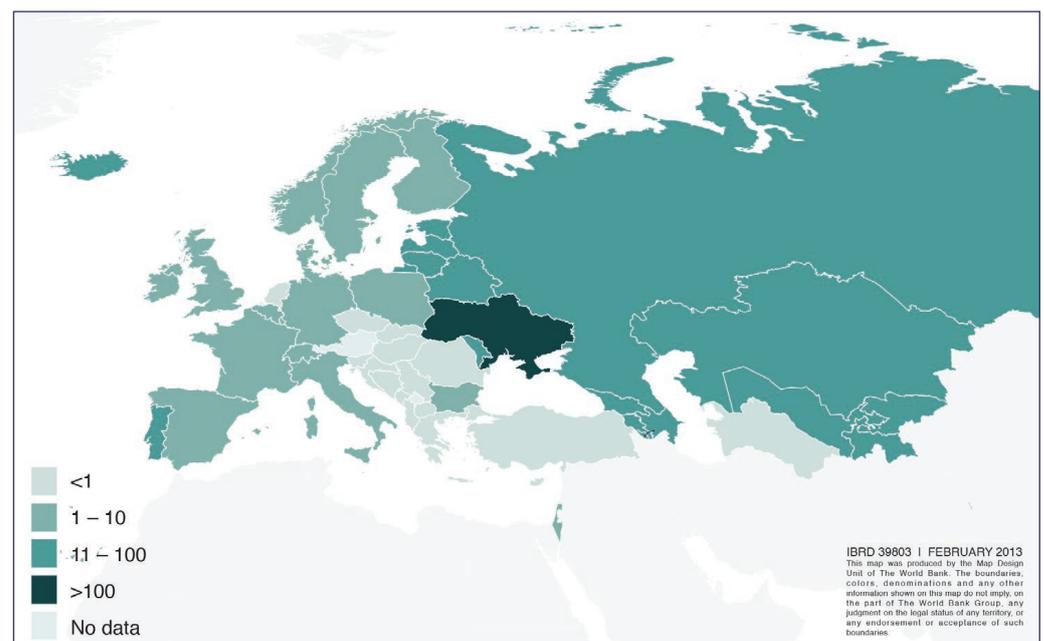
There are a number of intervention approaches which show promise. These include HIV prevention focused interventions which aim to:

- Create safer physical environments, for instance through safer injecting facilities, safer brothel policies, managed sex work zones
- Create safer social environments by diffusing changes in risk-related norms, values and practices at the level of peer groups and social networks, and by anti-stigma interventions
- Create safer legal environments by fostering legal change, avoiding the criminalisation of key populations, minimising the HIV harms related to policing practices and by offering legal aid or advocacy
- Create ease of access to helping and health services by developing legal and human rights literacy among key populations and creating public policies supportive of health service equity
- Develop non-HIV and non-health focused structural and multi-sectoral initiatives which can be theorised to have an indirect HIV prevention effect, including those linked to housing, education, and social welfare.

Evidence assessing social and structural HIV prevention among vulnerable populations remains embryonic, and creating this evidence is a key challenge for the future in order to ensure high impact and cost-effective HIV responses in the European Region.

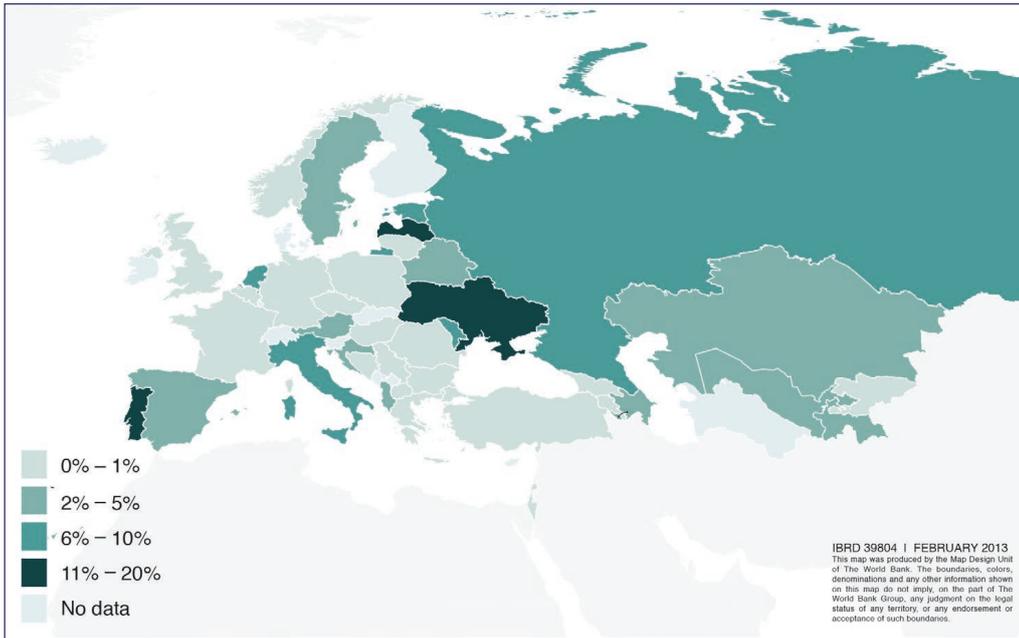
Annex: Additional figures

Annex Figure 1: Average HIV Case Reports Attributed to Injecting Drug Use Per Million, European Region



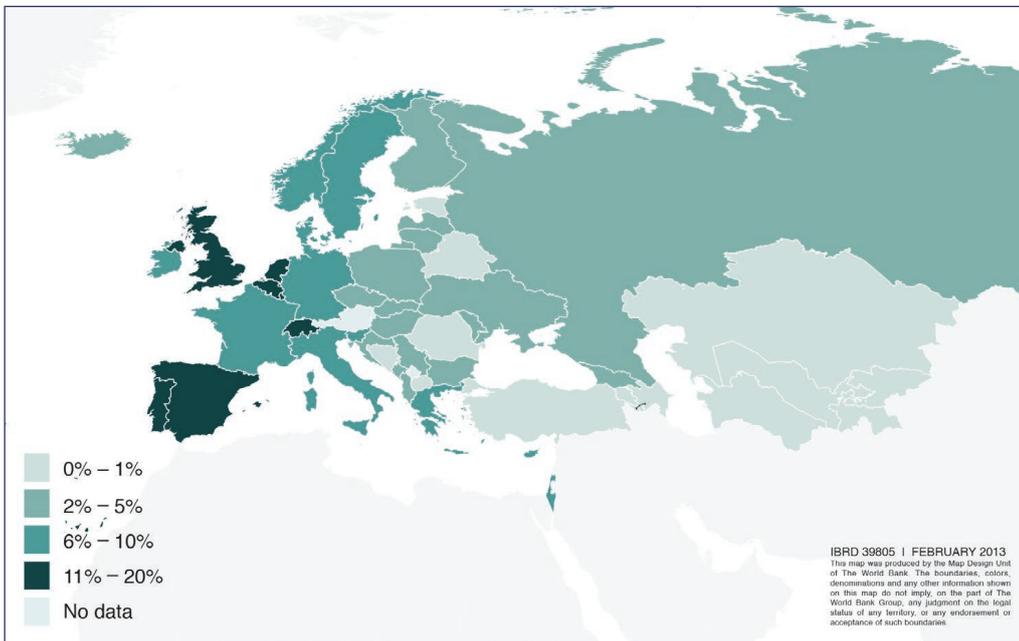
Sources: ECDC and WHO Regional Office for Europe HIV/AIDS surveillance in Europe (2011) and Russian AIDS Centre Report (2011).

Annex Figure 2: Best Estimates of HIV Prevalence Among FSWs Across the European Region

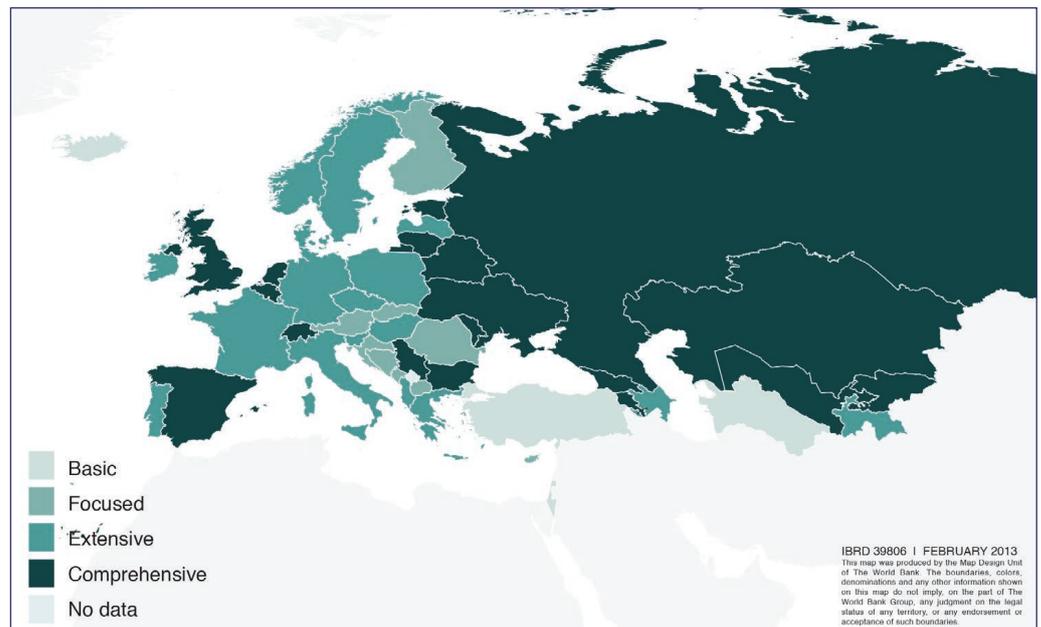


Source: Literature review and estimates, main report.

Annex Figure 3: Average HIV Case Reports Attributed to Sex Between Men Per Million



Sources: ECDC and WHO Regional Office for Europe HIV/AIDS surveillance in Europe (2011) and Russian AIDS Centre Report (2011).

Annex Figure 4: Monitoring of HIV Prevalence or Behaviours among MSM, PWID and SW

Source: Literature review, main report.

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