

WHY IS IT AN EMERGING ISSUE?

All countries in Eastern Europe and the Arab World retain low HIV prevalence below one percent in the general population half way into the fourth decade of the HIV epidemic. However, in several of these countries HIV prevalence is sufficiently high in one or more sub-populations to maintain the epidemic within its networks. Such epidemic pockets increasingly grow among vulnerable populations, such as men who have sex with men, injecting drug users and sex workers. The pattern of a hiding culture of people afraid of coming forth for HIV testing and AIDS care, combined with an HIV and AIDS service delivery unable to efficiently reach out to people in need presents an emerging issue. In particular, the exhibited multiple risky behaviours in overlapping networks present the critical emerging issue with yet unknown consequences for the future course of the epidemic.

VULNERABLE AND HIDDEN IN WEBS OF BEHAVIOUR

Concentrated HIV Epidemics in Eastern Europe and Arab Countries

By Erling Høg

WEBS OF BEHAVIOUR

The behaviours of the 'most-at-risk-groups' remain tabooed. Their illness continues to be hidden to the public eye. We tend to forget that some homosexual men may have sex with women – married to their life-long female partner. In this context we fail to recognize bisexual behaviour. What about women who have sex with women? We tend to forget that sex workers include female and male sex workers – and that they also may have stable partners. Certainly, they have clients exposed to the risk of HIV infection. We tend to forget that HIV positive injecting drug users make their partners vulnerable to HIV. These patterns generate risky webs of behaviour among vulnerable and hidden populations in

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DEFINITIONS

- MSM - Men who have sex with men
- IDU - Injecting drug user
- MTCT - Mother to child transmission
- SW - Sex worker
- BT - Blood transfusion
- PLHIV - People Living with HIV

countries often characterized by restrictive practices and punitive laws that merely perpetuate life underground living with HIV without testing and treatment.

A MASCULINIZED EPIDEMIC

The concentrated pockets of HIV in Eastern Europe and Arab countries reveal a masculinized epidemic, as opposed to the feminized generalized epidemics seen in many high-prevalence countries.

In 10 of the 12 Arab countries with available data and sex disaggregation, men carry more than 50 percent of reported HIV cases. In six of these countries, they carry more than 75 percent: Iraq (85%), Jordan (80%), Lebanon (88%), Palestine (89.4%), Saudi Arabia (82%) and United Arab Emirates (75.8%) (see Table 1).

Eight countries in Eastern Europe provide data on cumulative reported HIV cases disaggregated by sex. The proportion of men is more than 50% in all eight countries. In five of them it is more than 75%: Croatia (86%), Czech Republic (81.7%), Hungary (86%), Macedonia (75%) and Slovakia (86%) (see Table 2) (UNAIDS 2015).

TABLE 1: ARAB COUNTRIES – PROPORTION OF HIV AMONG VULNERABLE POPULATIONS

Country	Pop Million	HIV 15-49 Percent	Estimated PLHIV No. 2013, 2014	Range Numbers	Cumulative cases			HIV proportion of reported cases (%)							Year	
					No	% M	% F	Hetero	MSM	IDU	SW	MTCT	BT	Unknown		
Algeria	39.2	<0.1	11,000	2,600-26,000	1,272	54	45	49.4	3.45	7.9	...	1.8	4.2	...	33	2012
Bahrain	1.3	...	...	...	437	...	...	33	3	55.8	...	2.1	5.0	...	1.1	2014
Comoros	0.73	...	...	...	185	...	...	...	0	...	0	...	...	...	...	2014
Djibouti	0.87	0.9	9,900	7,600-14,000	6,085	41	59	?	...	...	15.4	...	0.8	...	...	2014
Egypt	82.1	<0.1	8,800	5,800-14,000	1,663	...	...	46.2	20.6	28.3	...	4.9	...	...	...	2014
Iraq	33.4	...	...	...	615	85	15	17	0	0	...	5	66	...	...	2014
Jordan	6.5	...	...	...	1026	80	20	11	58	6	...	3	3	...	17	2014
Kuwait	3.4	...	...	...	252	72.6	27.4	...	...	...	...	...	...	...	...	2014
Lebanon	4.5	<0.1	1,800	<200-3,500	1,671	88	12	30.2	44.6	1	...	1.6	0	...	7.5	2014
Libya	6.2	...	...	...	...	...	...	...	...	90	...	...	...	...	...	2014
Mauritania	3.9	0.7	16,000	13,000-20,000	...	...	...	...	...	...	...	...	...	...	...	2014
Morocco	33	0.1	30,000	22,000-40,000	8,705	50	50	85	4.6	4.6	2.7	...	...	...	...	2013
Oman	3.6	0.2	2,400	1,600-3,000	2,394	...	...	50.6	13.8	3.8	...	5.7	3	...	23.1	2013
Palestine	4.6	...	...	...	47	89.4	10.6	51.1	4.3	2.1	...	2.1	21.3	...	14.8	2009
Qatar	2.2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2013
S Arabia	28.8	...	...	...	20,539	82	18	...	...	...	...	...	...	...	...	2013
Somalia	10.5	0.5	35,000	27,000-45,000	...	...	...	...	...	...	5.2	...	...	...	...	2013
Sudan	38	0.2	53,000	41,000-69,000	1,450	68	32	...	...	...	...	...	...	...	...	2013
Syria	22.8	<0.1	<1000	<100-1,700	763	67	33	62.8	10.5	4.85	...	4.85	8.4	...	8.6	2012
Tunisia	10.9	<0.1	2,700	1,600-4,400	1,887	...	...	...	...	3	...	...	...	...	...	2011
UAE	9.3	...	...	...	780	75.8	24.2	...	...	...	...	...	...	...	...	2014
Yemen	24.4	<0.1	7,200	4,800-11,000	3,995	...	...	85	6	...	...	...	...	...	...	2014

TABLE 2: EASTERN EUROPE – PROPORTION OF HIV AMONG VULNERABLE POPULATIONS

Country	Pop Million	HIV 15-49 Percent	Estimated PLHIV No. 2013, 2014	Range Numbers	Cumulative cases			HIV proportion: reported/newly diagnosed cases (%)							
					No	% M	% F	Hetero	MSM	IDU	SW	MTCT	BT	Unknown	Year
Albania	2.8	<0.1	1,100	...	72	...	...	82	10	1	...	4	3	...	2011
Armenia	3	0.2	3,700	2,400-5,900	1,619	70	30	59.5	2.2	31.1	...	1.7	0.2	5.3	2013
Azerbaijan	9.4	0.1-0.2	8,400	5,600-12,000	3,267	...	...	36.2	1	61.1	...	1.7	...	5.7	2011
Belarus	9.5	0.5	29,000	24,000-36,000	12,400	...	...	74	2.3	21.8	...	1.9	...	0	2011
Bosnia-Herz.	3.8	<0.1	...	...	223	...	...	52	28.5	9.5	...	...	...	...	2012
Bulgaria	7.3	...	...	...	1,830	...	...	42	39	18	...	...	...	0	2013
Croatia	4.3	...	...	...	1,106	86	14	20.6	56.8	6.3	...	1.2	0.2	3.6	2013
Czech R.	10.5	<0.1	3,400	3,000-3,800	1,675	81.7	18.3	27.9	59.3	4.5	...	0.2	0.8	4	2011
Georgia	4.5	0.3	6,600	5,300-8,200	4,131	...	...	48	13	34	...	~1	<1	~1	2013
Hungary	9.9	...	...	...	1,771	86	14	16.9	52.3	1.2	...	0.5	1.3	25	2009
Kosovo	1.8	...	...	...	70	65	35	...	...	...	...	...	...	...	2007
Macedonia	2.1	<0.1	<200	...	144	75	25	...	...	...	...	...	...	...	2011
Moldova	3.6	0.6	18,000	15,000-21,000	8,557	...	...	...	...	8	...	...	...	...	2012
Montenegro	0.62	...	...	...	...	...	...	...	9.3	...	...	...	...	...	2014
Poland	38.5	...	...	...	15,196	...	...	...	...	39	...	...	...	...	2011
Romania	20	0.1	16,000	13,000-21,000	19,261	...	...	54.6	11.4	29.2	...	...	...	...	2013
Russia	143.5	...	...	850,000-1,300,000	...	...	...	...	41.2	56.2	...	...	...	...	2012
Serbia	7.2	<0.1	3,000	1,900-5,400	2,998	...	...	~15	63	3	...	0	~0	~13	2013
Slovakia	5.4	...	...	...	639	86	14	...	...	...	...	...	...	...	2013
Slovenia	2	<0.1	<1000	<1000-1,300	...	...	...	12.2	58	0	...	...	...	29	2009
Ukraine	45.5	0.8	290,000	260,000-340,000	245,516	55	45	...	5.9	19.7	7.3	3.7	0.1	...	2013

Sources Table 1 and 2: (UNAIDS 2015) and (UNAIDS 2013)

Note on estimated PLHIV

Grey cells: UNAIDS 2014 data: countries – number of people living with HIV (UNAIDS 2015). 2014 data not available for all countries.

White cells: UNAIDS 2013 data: UNAIDS AIDSinfo data: People living with HIV - All sexes All ages (UNAIDS 2013).

Note on HIV proportion, reported cases and newly diagnosed cases

Data have been gathered from individual country reports from various years. This produces a 'best picture' from scattered data that has not been systematically collected and presented by

UNAIDS. Some countries provide information only on reported cases (red data), while other countries only provide information on newly diagnosed cases (green data). No distinction provided between reported and newly diagnoses cases: (black data).

...: Data not available.

Egypt provides a prime example of webs of behaviour, with concentrated epidemics among homosexual men and injecting drug users. They do not exhibit perfectly closed networks without contact with the larger world. They may pass on HIV to the general population in Cairo and Alexandria: these men exhibit multiple risky behaviours of sex with men, sex with their wives, sex with sex workers, low condom use, injecting drug use and the use of contaminated needles (NAP Egypt 2014).

TABOOED BEHAVIOUR

Homosexuals, injecting drug users and sex workers practice tabooed behaviours, yet present in most societies. This encourages hidden lives in isolation, living with or without HIV. They fear discrimination and persecution, should they access government HIV and AIDS services. Indeed, there are several examples of services that successfully reach out to key populations, but failing to recognize that far from all people in need have been reached, in Eastern Europe and Arab countries in particular, remains a premature conclusion. This presents a dyad of 'hard-to-disclose' and 'hard-to-reach' phenomenon. Services unsuccessfully try to

make contact, while target individuals stay reluctant to accept a helping hand.



Photo credit: (WHO 2015)

MEN WHO HAVE SEX WITH MEN – AND WOMEN

Sex between men exists in Arab countries, yet extremely hidden, due to its tabooed nature, its illegality and the fears of incarceration. Homosexual men face widespread stigma and discrimination and extreme social marginalization. They may experience severe physical violence. Therefore, they refrain from seeking HIV testing for fear of being exposed.

18 of the 22 Arab countries have laws that prohibit same-sex sexual activities between consenting adults. Five of these countries have the death penalty as sanction under punitive law: Mauritania, Saudi Arabia, Somalia, Sudan and Yemen.

The legal frameworks in Eastern European countries do not contain an offence against same-sex sexual activities (UNAIDS 2010).

The limited reliable MSM data means that they are underrepresented in national HIV and AIDS statistics. Saudi Arabia outright ignores the problem in the national HIV progress report: The terms ‘men who have sex with men’ and ‘sex worker’ are “not relevant in the socio-cultural and religious context of Kingdom of Saudi Arabia” (Kingdom of Saudi Arabia 2014). A study of HIV case notification in Saudi Arabia during 2000-2009 does not mention homosexuals, injecting drug users or sex workers at all (Mazroa et al. 2012). Moreover, many homosexual men may have a female stable partner and a family that know nothing about their parallel lives. For example, in Bahrain: “Most MSM are married and are not publically gay” (Kingdom of Bahrain 2014).

This is bad news in times of HIV that begs openness, timely testing and proper care – *universally*. Nevertheless, no human being wants, needs or deserves a mark of disgrace. But the value of a stigma free life comes at a very high price, ultimately life itself. Only a few UNAIDS reports include the

MSM/SW ILLEGAL?

	MSM	SW
Algeria	Yes	Yes
Bahrain	No	Yes
Comoros	Yes	Yes
Djibouti	No	Yes
Egypt	Yes	Yes
Iraq	Yes	Yes
Jordan	No	Yes
Kuwait	Yes	Yes
Lebanon	Yes	No
Libya	Yes	Yes
Mauritania	DP	Yes
Morocco	Yes	Yes
Oman	Yes	Yes
Palestine	No	Yes
Qatar	Yes	Yes
Saudi Arabia	DP	Yes
Somalia	DP	Yes
Sudan	DP	Yes
Syria	Yes	Yes
Tunisia	Yes	Yes
UAE	Yes	Yes
Yemen	DP	Yes

DP: Death penalty

Source: (UNAIDS 2010)

MSM/SW ILLEGAL?

	MSM	SW
Albania	No	Yes
Armenia	No	Yes
Azerbaijan	No	Yes
Belarus	...	Yes
Bosnia-Herzegovina	No	Yes
Bulgaria	No	No
Croatia	No	Yes
Czech Republic	No	No
Georgia	No	Yes
Hungary	No	No
Kosovo	No	Yes
Macedonia	No	Yes
Moldova	No	Yes
Montenegro	No	Yes
Poland	No	No
Romania	No	Yes
Russia	No	Yes
Serbia	No	Yes
Slovakia	No	No
Slovenia	No	Yes
Ukraine	No	Yes

Source: (UNAIDS 2010)

challenge of hidden lives in a context of criminalized behaviour: Jordan, Kuwait, Saudi Arabia, Sudan, United Arab Emirates, Bosnia-Herzegovina, Croatia, Czech Republic, Hungary and Russia. Few countries count them in epidemiological surveys.

Egypt and Lebanon have the highest proportions of HIV positive MSMs of reported HIV cases. 10 out of the 22 countries lack data on men's risk group. In Central Europe, the countries with highest HIV proportion of reported cases or newly diagnosed cases among men who have sex with men are Croatia, Czech Republic, Hungary, Slovenia and Serbia. These high proportions were also found in an earlier study looking at data between 2000 and 2008 (Bozicevic et al. 2009). The proportion in Russia has increased dramatically, from 0.3% (ibid.) to 41.2% (see Table 2). This may reflect an increase in HIV prevalence, but also that more homosexual men have come forward for HIV testing.

Six countries lack data on homosexual men. Epidemiological hints often point two possible interpretations: the areas with high levels of HIV among homosexual men may be connected to good, relatively safe and 'trouble-free' access to HIV testing. Countries with no available data may also indicate a difficult environment of hidden epidemics, in which people live with fear of revealing their identity and illness – and coming forward for HIV testing. This may also include fear of government repercussions.

INJECTING DRUG USERS

Bahrain, Egypt and Libya provide prime examples of the emerging problem of injecting drug use in Arab countries. The global AIDS community knows very well about injecting drug users (IDUs) in Eastern Europe, but will need to enlarge its focus to the Arab world. A recent study showed evidence for HIV epidemics in several countries in the Middle East and North Africa, originating within the last decade, that continue to grow. The study also emphasizes that the lack of sufficient evidence does not preclude the possibility of

hidden epidemics among IDUs in Arab countries ([Mumtaz et al. 2014](#)).

What is needed to counter this emerging issue will be to improve surveillance methods and to provide comprehensive harm reduction and prevention programs. For example, Mirzoyan and colleagues conducted a behavioural survey among IDUs in Libya that detected one of the highest levels of HIV infection worldwide in the absence of such harm reduction program. Some engage in injecting drug use and risky sexual behaviour simultaneously, exemplifying webs of risky behaviour ([Mirzoyan et al. 2013](#)).

Azerbaijan, Belarus, Georgia, Romania, Russia and Ukraine provide prime examples of injecting drug use in Eastern Europe. Studies have shown high HIV prevalence among IDUs not reached by harm reduction programs: e.g. a cross-sectional survey in several Russian cities ([Rhodes et al. 2006](#)), a study showing evidence of the risky network behaviour in Ukraine ([Mazhnaya et al. 2014](#)), and an HIV prevalence as high as 33% among IDUs in Ukraine in which fear of police discrimination and harassment prevails ([Mimiaga et al. 2010](#)).

MALE AND FEMALE SEX WORKERS

Generally, there is nearly complete lack of data on sex workers' health and HIV status. Sex workers remain the most hidden population. For example, sex work in Kuwait and Oman exists, but it remains extremely hidden, since it is illegal and punishable by law. Kuwait has risky networks: information from focus groups and key informants show how individuals engage in a web of risky behaviours, including unprotected sex with multiple sex partners in the context of sex workers and their clients, men who have sex with men and injecting drug users. Detox and rehabilitation programs for injecting drug users exist, but there are no programmes for sex workers and homosexuals, all in all with virtually no attention given to HIV and AIDS ([State of Kuwait 2014](#)).

Oman also inhabits risky networks: key informants reveal a mix of high-risk sexual behaviour and injecting drug use (State of Oman 2014). This mixed HIV risk behaviour has also been evidenced in Eastern Europe: Moldova (Zohrabyan et al. 2013), Serbia (Comiskey et al. 2013) and Czech Republic (Bruckova et al. 2006).

HIV NEGATIVE TEST REQUIREMENTS

The issue of HIV negative test requirements in certain circumstances remains a neglected subject, including in scientific terms. Some countries have developed policies to test for HIV before marriage, to enter, stay or reside permanently, and in relation to employment (for example to become a teacher, police man, enter the military or study at the university).

Premarital HIV testing, PHT, is in some countries a necessary condition for marriage. It differs from compulsory HIV testing, as it is a matter of choice. But you have to give up marriage, if you choose not to be tested (Rennie and Mupenda 2008).

PHT has been introduced in seven Arab countries: Bahrain, Kuwait, Libya, Morocco, Qatar, Saudi Arabia and the United Arab Emirates (Ganczak 2010, Open Society Institute 2010)

(see details in Table 3).

Anecdotal evidence points to the phenomenon that young people travel to neighbouring countries to buy a fake negative HIV test in order to circumvent the PHT requirement.

In 2015, UNAIDS reported 17 countries, territories and areas that deport individuals once their HIV-positive status is discovered. 12 of these

TABLE 3: RESEARCH FINDINGS ON PREMARITAL HIV TESTING IN SELECT ARAB COUNTRIES

Location	Implementer	Type of testing and goal	Confidentiality and disclosure	Services	Marital consequences of positive test result
Bahrain	Government	HIV testing is part of mandatory premarital counseling, which became law in 2004	Unclear	NR	Unclear
Kuwait	MoH, 2008	Proposed mandatory	Unclear	NR	Unclear
Libya	Government	Reportedly mandatory	Unclear	NR	Unclear
Morocco	MoPH, 1999	Unclear if HIV testing has to be incorporated into the mandatory premarital medical examination	Unclear	NR	Unclear
Qatar	Government	Mandatory as part of a proposed mandatory premarital check-up	Appears to require disclosure in order to obtain marriage license	NR	Serodiscordant couples will be allowed to marry but they will have to sign a legal document agreeing to "protect the affected partner"
Saudi Arabia	MoH	Mandatory by royal decree, as part of a mandatory premarital health screening	Unclear	NR	Ministry of Justice to review marriage requests by HIV-positive people
UAE	MoH	Mandatory as part of a mandatory premarital medical examination	Unclear	NR	Unclear

Source: Adapted from (Open Society Institute 2010).
NR: None reported.

are Arab countries: Bahrain, Egypt, Iraq, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, Sudan, Syria, United Arab Emirates and Yemen.

Russia is the only reported country in Eastern Europe. Five countries require a person to show that he or she is HIV negative to be allowed to stay for even short periods of time (10 to 90 days). Three of these are Arab countries: Egypt, Iraq and Qatar. Five countries have a complete bar on the entry and stay of people living with HIV, including Oman, Sudan, United Arab Emirates and Yemen ([UNAIDS May 2015](#)). Data could not be found on HIV negative test requirements in relation to employment.

EPIDEMIOLOGICAL CHALLENGES

Three key epidemiological challenges must be highlighted: incomplete data, underreporting and the unknown route of HIV transmission.

Inadequate monitoring systems in many Eastern European and Arab countries, particularly among high-risk groups means that the actual extent of the HIV epidemic remains unknown.

Underreporting is another black-box phenomenon in concentrated and generalized HIV epidemics alike. HIV cases are severely underreported in both Eastern European and Arab countries. HIV surveillance relies on 'best estimates', as we do not know the actual epidemic until people come forward for testing, regardless of their behavioural circumstances.

Moreover, among reported HIV cases, several countries report high proportions in which they are unable to determine the route of transmission. How did the HIV positive individuals contract HIV? Algeria, Oman, Hungary, Serbia and Ukraine report relatively high HIV proportions among reported cases in which health services were unable to determine the route of transmission. In essence, reported infections may underestimate true infections.

The black box issue of ministries of health and/or governments prohibiting the dissemination and publication of HIV data must be emphasized. For example, it has been reported that epidemiologists working at the Saudi Ministry of Health have been disallowed to make available HIV data public. Another example points to this problem: The head of the Russian Federal AIDS Centre planned to present HIV data from Russia and neighbouring countries at a conference in Sweden (Pokrovskiy 2014). However, press coverage and Russian government restrictions made him decide to stay at home. Yet, there is no systematic scientific information on how many HIV data presenters face such difficulties.

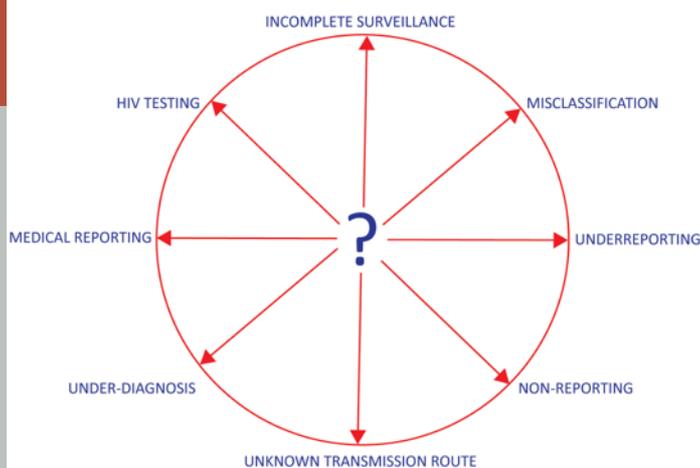
UNDERREPORTING AND MISCLASSIFICATION

Some countries have reported a decreasing trend in newly diagnosed HIV cases among key populations (e.g. Sudan, Armenia, Moldova, Serbia and Ukraine). This may be attributed to successful harm reduction programmes, but also to weaknesses in reporting and non-reporting from some parts of individual countries.

An example from Ukraine reveals what may be wrong with the picture depicted in HIV reporting. In essence, the case

reporting data are in sharp contrast to seroprevalence data collected through sentinel surveillance activities. For example, a total of 494 MSM HIV cases were reported in Ukraine during 2005-2011 to the Ukraine HIV case surveillance system, representing 0.4% of all reported cases. The number of reported MSM cases increased from 20 in 2005 to 143 in 2011. Surveys conducted in 2011 in all regions suggested that the national MSM prevalence was 6%. Spindler and colleagues reason that even with the most conservative estimate of 176,000 MSM in Ukraine in 2011, this would suggest a

FIGURE 1: EPIDEMIOLOGICAL CHALLENGES



minimum of 11,000 MSM living with HIV. There could be three reasons for this: underreporting, misclassification or failure of MSM to test for HIV ([Spindler et al. 2014](#)).

A homosexual man tested HIV positive, requires that physicians ascertain this information and then report it. Doctors remain reluctant to inquire about their patients' sexual orientation and the patients hesitate to reveal it. The consequence may be non-reporting or that homosexual men with HIV are routinely classified as heterosexual.

Thus the prevalence, real numbers and the proportions of reported HIV cases among high-risk groups should be treated with caution. Mirzazadeh and colleagues support the case of misrepresentation in Yemen: direct information on homosexuality is missing and there is severe underdiagnosis and underreporting. They suggest that for every detected HIV case in Yemen, there might be 15 undetected cases ([Mirzazadeh et al. 2014](#)).

CONCLUSION

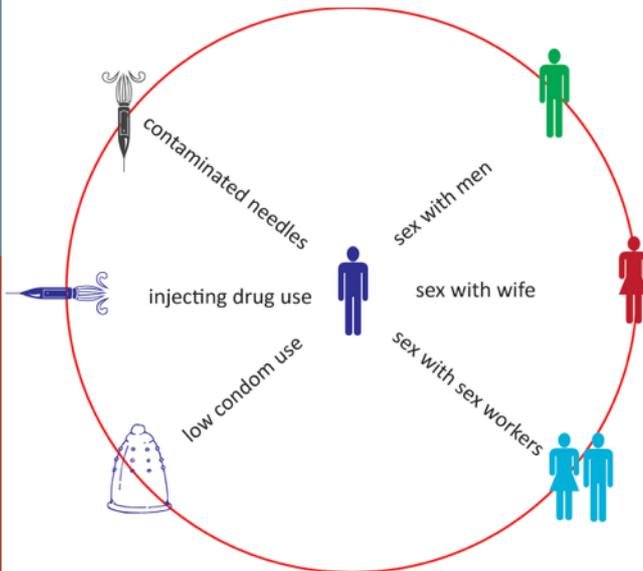
Eastern Europe and the Arab world inhabit a vast number of countries. This emerging issue brief highlights one aspect of the diversity of experiences: pockets of concentrated HIV epidemics in which people tend to hide, being afraid of coming forth for HIV testing and AIDS care.

The other side of the coin remains an inefficient HIV and AIDS service delivery that fails to reach out to all in need. A critical issue remains the emerging risky *webs of behaviour* among vulnerable and hidden demographic groups in both Eastern Europe and the Arab countries.

Moreover, men who have sex with men, injecting drug users and sex workers often face a general problem in countries that require a negative HIV test to marry, to enter, stay or reside permanently, to get a job or to study at a university.

INFO BOX: WEBS OF BEHAVIOUR

In social science terms, webs of behaviour relate to the concept of ‘sexual networks’. ‘Sexual networks’ emerge among likeminded people, who share common rules, behaviour, and sexual culture. Each sexual network has its own level of risk of HIV infection (Frost 2007, Liljeros et al 2003). Yet, I prefer to introduce the idea of *webs of behaviour*, defined as co-existing sexual behaviours governed by different rules (sex with stable partners, occasional partners, strangers, prostitutes, homosexual and bisexual behaviour, injecting drug use, etc.). Think of the multiple risky behaviours in Egypt. People establish rules and perceptions for each kind of behaviour that viewed in isolation seem to safeguard against HIV transmission, whether these rules and perceptions stem from tradition, social norms, cultural innovation, or medical intervention campaigns. If different behaviours were perfectly closed systems, then the risk of HIV transmission would be minimized, or eliminated. However, the risk of HIV transmission increases, when different kinds of behaviour intersect. In other words, intersection produces clashes and breakdowns of the safety measures in seemingly closed networks.



A ‘web of behaviour’ emphasizes the existence and intersection between several social groups governed by different behavioural rules. This is an intrinsic part of the *risk environment* paradigm that looks beyond *individual* behaviour. A ‘web of behaviour’ highlights social and discursive disconnectedness, yet simultaneously a crossover connectedness at the level of practice with unintended but drastic consequences. Boundaries of silence, taboo, hiding and lying characterize a ‘web of behaviour’. In addition to the fears of stigma that most citizens carry when in need of HIV testing and AIDS care, citizens in most-at-risk groups in Eastern Europe and Arab countries often face very tangible repercussions, exposing illegal behaviour risking imprisonment and expulsion. ‘Webs of behaviour’ is a topic for further research among vulnerable and most at risk groups in Eastern Europe and Arab countries, in particular how it relates to the research on sexual networks and concurrent partnerships.

Boundaries of silence, taboo, hiding and lying characterize a ‘web of behaviour’. In addition to the fears of stigma that most citizens carry when in need of HIV testing and AIDS care, citizens in most-at-risk groups in Eastern Europe and Arab countries often face very tangible repercussions, exposing illegal behaviour risking imprisonment and expulsion. ‘Webs of behaviour’ is a topic for further research among vulnerable and most at risk groups in Eastern Europe and Arab countries, in particular how it relates to the research on sexual networks and concurrent partnerships.

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