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Review

HIV/AIDS: trends in the Middle East and North Africa region

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SUMMARY

Objectives: To give an overview of the HIV epidemic in the Middle East and North Africa (MENA) region.**Methods:** Articles on the MENA region were reviewed.**Results:** The MENA region comprises a geographically defined group of countries including both high-income, well-developed nations and low- and middle-income countries. While the annual number of new HIV infections in Sub-Saharan Africa has declined by 33% since 2005, new HIV infections in the MENA region have increased by 31% since 2001, which is the highest increase among all regions in the world. Moreover, the number of AIDS-related deaths in 2013 was estimated to be 15 000, representing a 66% increase since 2005. However, the current prevalence of 0.1% is still among the lowest rates globally. There is substantial heterogeneity in HIV epidemic dynamics across MENA, and different risk contexts are present throughout the region. Despite unfavorable conditions, many countries in the region have put significant effort into scaling up their response to this growing epidemic, while in others the response to HIV is proving slower due to denial, stigma, and reluctance to address sensitive issues.**Conclusions:** The HIV epidemic in the MENA region is still at a controllable level, and this opportunity should not be missed.

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1. An overview of the epidemic

The Middle East and North Africa (MENA) region comprises a geographically defined group of countries including both high-income, well-developed nations and low- and middle-income countries. It has become the center of attention during the past few years due to recent social and political movements commonly referred to as the Arab Spring.^{1,2} An important characteristic of the

region is its steadily increasing population of young adults, who comprise 10% of the world's population in the 15–49 years age group.³ These demographic, social, and political trends are important factors affecting many public health issues facing the region.

This article reviews recent trends in HIV/AIDS epidemiology in this large and diverse region. The following 24 countries or territories are considered: Afghanistan, Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Pakistan, Palestine, Qatar, Saudi Arabia, Somalia, Sudan, South Sudan, Syria, Tunisia, United Arab Emirates (UAE), and Yemen; all of these are included in the MENA definitions of the Joint United Nations Program on HIV/AIDS (UNAIDS) and the Eastern Mediterranean Regional Office of the World Health Organization (WHO/EMRO).^{4,5}

From 2001 to 2013, the annual number of new HIV infections declined by 38% globally, followed by a significant decline in AIDS-related deaths.⁶ However, trends in new infections have differed among regions, among countries within one region, and among key populations (KPs) in and across regions and countries. While the annual number of new HIV infections in Sub-Saharan Africa has

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declined by 33% since 2005, new HIV infections have been on the rise in Eastern Europe, MENA, and Central Asia in recent years. The rising trends in new infections are a cause for serious concern in MENA. Since 2001, newly identified HIV infections in this region have increased by 31%, from 19 000 to 25 000, which is the highest increase among all regions in the world.⁶ While some of this increase can be attributed to increased testing and awareness, there is no doubt that a considerable number of cases are new transmissions. Moreover, the number of AIDS-related deaths in 2013 was estimated to be 15 000, representing a 66% increase since 2005.⁶

Accurate understanding of the epidemiological features of the HIV epidemic in the MENA region has been slow due to difficulties inherent to a relatively low HIV prevalence in the total population, in addition to late and insufficient investment in surveillance systems and collection and analysis of data pertinent to the epidemic situation. Moreover, many studies conducted in the region have remained unpublished in the scientific literature; such studies are only available in the form of reports or articles in non-indexed journals that are difficult to access. This means that data have not been analyzed or synthesized at the country or regional level, and no critical assessment of the quality of available evidence has been conducted. However, more peer-reviewed publications related to the HIV epidemic in the region are being published,³ and substantial efforts have been made to characterize the epidemic in recent years.⁷

There is substantial heterogeneity in HIV epidemic dynamics across MENA, and different risk contexts are present throughout the region. Although the number of people living with HIV (PLWH) in the MENA region has increased significantly over the last decade, the current prevalence of 0.1% is still among the lowest rates globally. Five countries – Algeria, Islamic Republic of Iran, Morocco, Somalia, and Sudan – account for 88% of these PLWH.⁶

In 2013, the Islamic Republic of Iran accounted for 30% of all HIV-positive people in the region, with an estimated number of 70 000 (47 000–110 000) PLWH. In Sudan, 49 000 (34 000–70 000) people were living with HIV, representing 21% of the regional estimate.⁶ Similarly, Iran ranked first among other countries regarding new HIV infections and AIDS-related deaths, followed by Sudan, Somalia, and Morocco.⁶

Overall, the major route of infection in the MENA region seems to be sexual transmission. In 2011, heterosexual sex was the most common reported mode of HIV transmission among men in Tunisia (44.4%), UAE (50.0%), Syria (54.5%), Jordan (66.7%), Morocco (81.9%), Kuwait (100%), and Palestine (100%).⁸ However, a range of challenges including (but not limited to) those listed below, limit interventions to determine the actual sexual trends, making the current data unreliable.

- The prevalence data available for KPs are principally derived from passive surveillance data, which tend to underestimate the role of high-risk behaviors because of individuals' fear of disclosure.⁹
- There is intense HIV-related stigma and discrimination in the region, which is likely a major challenge for behavioral research.¹⁰
- Same-sex conduct is illegal in 76 countries, 19 of which are in MENA. In seven countries, including Iran, Saudi Arabia, Somalia, Sudan, and Yemen, homosexual acts are subject to the death penalty in some cases.⁶ Other countries, including Algeria, Egypt, Iraq, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, the Syrian Arab Republic, Tunisia, and the UAE, either criminalize adult consensual same-sex sexual conduct or have criminally prosecuted lesbian, gay, bisexual, and transgender people under other laws on the basis of their sexual orientation and gender identity.⁶
- Cultural and religious norms disapproving and penalizing sex between men may contribute to the nondisclosure of homosexual orientation and/or sexual conduct.¹¹

Other challenges that may be related to HIV surveillance in the MENA countries include infrequent surveillance of populations most at risk of HIV infection, lack of behavioral data, over-reliance on HIV case reporting and facility-based surveillance, and limited quality of HIV surveillance in general.¹²

For the year 2011, 14 countries provided data on reported HIV cases for the WHO (Afghanistan, Iran, Jordan, Kuwait, Lebanon, Morocco, Oman, Palestine, Saudi Arabia, Sudan, South Sudan, Syria, Tunisia, and UAE).⁸ In the UNAIDS Gap Report (2014), data regarding the MENA region were available from only 10 countries: Afghanistan, Algeria, Djibouti, Egypt, Iran, Morocco, Somalia, Sudan, Tunisia, and Yemen; the report did not include estimates from the remaining countries (Bahrain, Iraq, Jordan, Kuwait, Lebanon, Libya, Oman, Palestine, Qatar, Saudi Arabia, South Sudan, Syria, and UAE).⁶

Only three countries – South Sudan, Djibouti, and Somalia – in the MENA region have generalized epidemics; the remaining countries have an estimated HIV prevalence in the general population below 1%, with either low-level epidemics or HIV epidemics concentrated in populations most at risk of HIV, and limited spread to the general population.¹³ The HIV burden seems to be mainly concentrated among people who inject drugs (PWID), migrants, sex workers, and men who have sex with men (MSM).⁶

While only four countries – Djibouti, Iran, Morocco, and Pakistan – can be classified as having fully functioning HIV surveillance systems, HIV prevalence data for KPs most at risk of HIV infection are still not available for Bahrain, Iraq, Kuwait, Libya, Oman, Qatar, Saudi Arabia, South Sudan, Syria and UAE. On the other hand, HIV prevalence estimates from more than three rounds of bio-behavioral surveys (BBS) are available in Pakistan. In addition, Egypt, Lebanon, and Tunisia have conducted integrated bio-behavioral surveys (IBBS) in all three key transmission groups: female sex workers (FSWs), PWID, and MSM.¹³

2. Key populations

2.1. People who inject drugs

Injected drug use is a persistent and growing problem in MENA. According to the United Nations Office on Drugs and Crime, 83% of the global supply of heroin is produced in Afghanistan, and >75% of this is trafficked through Iran.¹⁴ In 2009, Iran bore the highest fraction of the global opium (89%) and heroin (33%) seizures.¹⁵ The number of injecting drug users in MENA is estimated to be 335 000–1 635 000, with a mean prevalence of 0.24%.¹⁶ Injected drug use was the most common mode of HIV transmission among men in Iran (73.5%) and Afghanistan (60.2%) in 2011.⁸ While Iran has had the highest numbers among all countries in the region (185 000, 0.43%), it is followed by Pakistan (117 000) and Egypt (89 000), where injecting drug use contributed 20% and 23%, respectively, of all newly notified cases in 2011; the lowest number (1000; 0.03%) was reported in Somalia.¹⁵

HIV prevalence was assessed among PWID in nine countries in the MENA region, with an estimated median of 8% (interquartile range (IQR) 1–21%).^{13,15} However, there seems to be considerable inter- and intra-country variability, ranging from 0% in Jordan, Palestine, and some parts of Libya to 9.4–15.3% in Iran and as much as 87% in Tripoli and other regions in Libya.^{15,17–19} Iran is the only country with conclusive evidence for an established concentrated epidemic at the national level.¹⁵ In addition to Iran, Pakistan, which has also recorded high levels of HIV among PWID, has shown an increasing trend over the years. In Pakistan, after almost two decades of very low HIV prevalence among PWID, the prevalence started to increase after 2003 and showed a consistent increase across all rounds of IBBS from 10.8% in 2005 to 37.8% in 2011.²⁰ Similarly, in Iran HIV prevalence among PWID increased from

13.3% in 2007 to 15.2% in 2010.^{13,18} HIV prevalence is consistently low (0–3.1%) among PWID in Jordan, Lebanon, Palestine, Syria, and Tunisia.¹⁵

Emerging HIV epidemics have been seen among PWIDs in Afghanistan, Egypt, Morocco, and Libya. In Egypt, where HIV prevalence was very low for about two decades, it had increased to 6–7% in the IBBS run in 2010.²¹ In Afghanistan and Morocco, the HIV epidemic among PWID appears to be emerging with considerably high HIV prevalence in some settings, but still low in others.^{22,23} Libya, with the highest reported prevalence, also has a concentrated epidemic, but the trend is unclear.²⁴ The reported prevalence up to 21.1% in Bahrain and 27% in Oman suggests at least some pockets of HIV infection among PWID.^{25,26}

HIV incidence among PWID is also variable, ranging from 2.2/100 person-years in Kabul, Afghanistan to 17.2/100 person-years in Tehran, Iran.^{27,28}

The key risk behavior among PWID is non-sterile equipment. In the second round of IBBS in Iran, among those who had injected drugs over the last month, 36.9% had used a non-sterile needle and 12.6% had practiced shared injection.¹⁸ Similarly, 39.2% of PWID reported sharing a needle/syringe during their last injection in Pakistan.²⁰ The lifetime prevalence of sharing needles/syringes ranges from 71% in Jordan to 97% in Oman. PWID inject drugs at a median of 2.2 injections/day, ranging from 3.3 in Iran to 5.7 in Afghanistan.¹⁵

The majority of PWID in MENA are sexually active and report high levels of sexual risk behavior, with 29–60% reporting multiple partners.¹⁶ In Iran, 30.4% of PWID were found to have sold sex for money, drugs, goods, or a favor over the past 12 months.¹⁸ In the last round of IBBS in Pakistan, 13.9% of PWID had paid a FSW for sex in the past month, and 7.1% of PWID had had sex with either a male sex worker or a Hijra sex worker. Hijra is a unique form of gender role expression in South Asia and is an umbrella term used for individuals who are transgender, trans-sexual, or bi-sexual, and identify as female, although they are most often biologically male.²⁰

Condom use among PWID is low to intermediate; 36% reported ever using condoms.¹⁵ The rate of condom use was found to be lowest in Afghanistan and Pakistan (10–38%) and highest in Lebanon (88%).¹⁵ Eighteen percent of male PWID reported ever having sex with men, and 45% reported having sex with a sex worker.¹⁵

2.2. Men who have sex with men

In eight of 16 countries (50%) for which surveillance data were available, the most commonly reported mode of transmission among males was heterosexual sex, followed by 'unknown mode' in four countries.¹³ 'Unknown mode of transmission' was most common in men in Oman (35.8%) and Saudi Arabia (60.9%) in 2011, suggesting the possibility of male-to-male transmission, a factor unlikely to be reported accurately due to the fear and reluctance to disclose the true mode of transmission.¹³

In 2010, with the exception of Djibouti, Morocco, Somalia, and Syria, the male-to-female ratio in reported HIV cases ranged from 1.4:1 in Oman to 7:1 in Bahrain, suggesting a considerable amount of HIV transmission among MSM in some countries; on the other hand, underreporting of female HIV cases may also account for this finding.¹³ Male-to-male sex was reported as the most frequent mode of HIV transmission only in Lebanon (50.0%) in 2011.¹³

The review of a limited number of reports revealed high inter- and intra-country variability regarding HIV in MSM. Only one-third of the countries – Tunisia, Sudan, Egypt, Morocco, Pakistan, Yemen, and Lebanon – conducted IBBS in MSM. The prevalence was found to vary between 3.6% in Lebanon in 2007 to 9.3% in Sudan in 2005, and the highest measured prevalence was 13.0% in Tunisia in 2011.¹³ While estimates of the size of vulnerable

populations were obtained by primary data collection only in Pakistan and Morocco, the remaining countries based their estimates mainly on consensus of different stakeholders.^{13,20} In the 2011 round of mapping in Pakistan, the size estimation was 1.9/1000 (male population) for Hijra sex workers and 1.6/1000 for male sex workers.²⁰ It is of note that no country has HIV prevalence trend data in MSM.¹³

In a systematic review in Morocco, HIV prevalence among MSM varied between 0 and 11%, with very limited data; 3.7% of men (aged 15–24 years) reported ever having anal sex with a man, and 8.3% of truck drivers reported a same-sex sexual partner.^{23,29}

In another study including MSM in two cities in Morocco – Agadir and Marrakesh – more than 67% stated bisexual experiences.³⁰ The rate of selling sex among MSM was high (>65%). The majority (78%) of the interviewees had practiced anal sex within the past 6 months. The rate of condom use with commercial male sex partners (59%) and regular male sex partners (44%) was low. Approximately 81% had had sex with a woman at least once.

In Tripoli, Libya, HIV prevalence among MSM was much lower (3.1%) compared to FSWs. The rate of having more than three anal sex partners was high (44.2%). Only 21% used condoms consistently. Among those who had anal sex with a commercial partner (26.5%), 19.5% used a condom. A high number of MSM (53%) also had sex with a female sex partner. The rate of ever injecting drugs was low (4%) in this population.¹⁹

A report from Cairo, Egypt revealed that 65.8% of MSM were engaged both in receptive and insertive anal sex, with 21.9% having more than one sexual act per day. The number of partners per week was high (3–4) among 35.6%. Approximately 38% also had heterosexual relations. While 52.1% never used condoms, 21.9% had never heard of condoms.³¹ The rate of ever using condoms was as low as 23.9% in some regions in Lower Egypt.³²

High HIV prevalence rates among MSM (7.8% among insertive and 9.3% among receptive MSM) were reported from Sudan.³³ The rates of condom use among MSM showed significant variation (8–20%) in 2011 and 2012.³⁴

2.3. Female sex workers

While there is a large body of evidence for concentrated epidemics among PWID and considerable evidence for MSM in the MENA region, evidence is lacking for FSWs.³⁵

Eleven countries have conducted BBS or HIV sero-surveys in FSWs, and the prevalence seems to be below 4% in all countries except Somalia (5.2%, 2007), Iran, and Djibouti.^{13,36} The HIV prevalence among FSWs in the IBBS including 14 cities in Iran revealed an HIV prevalence of 4.5% in 2011,³⁷ whereas a respondent-driven sampling (RDS) survey in Shiraz found a slightly higher rate of 5.2%.¹³ Although HIV prevalence trend data are available in Morocco (2.6% in 2007; 2.7% in 2010) and Djibouti (19.7% in 2007; 15.4% in 2009), these figures are the results of facility-based surveillance in FSWs based on convenience samples.¹³

In Morocco, HIV prevalence among FSWs was around 2% and had been stable for more than a decade.²³ However, there seemed to be considerable variation across regions, with prevalence rates up to 8%. The rate of injected drug use among FSWs was found to be low (3.7%), and consistent condom use during vaginal, anal, and oral sex was 59.5%, 16.1%, and 16.9%, respectively.²³

Tripoli, Libya had the highest reported HIV prevalence among PWID; HIV prevalence was also quite high (15.7%) among FSWs, of whom 18.2% had been forced to have sex. The number of sexual partners during the last 6 months was between 10 and 50 in 42.8% and >50 in 30.5%. Regular condom use with casual clients during the last 6 months was reported by 63.4%. Injecting drug use was low among FSWs (2/69).¹⁹

A study from Greater Cairo showed that condom use during the last month and with the last client was low (32.8% and 22.4%, respectively) among FSWs. Around 5% of FSWs were injecting drugs.³⁸

In an IBBS including 14 sites in Sudan in 2011, HIV prevalence was $\leq 1\%$ at 10 sites, with the highest HIV prevalence being 5.0% and 7.7% at two sites. The age of starting to sell sex was < 18 years in at least one-fifth of FSWs at 10 sites, with a significantly high proportion (47.8–50.1%) at two sites. The rate of condom use with the last client (4.7–55.1%) and consistent condom use within the past month (0.7–24.5%) varied significantly. Testing for HIV was low; less than 10% of FSWs had ever been tested for HIV at six sites.³⁹

2.4. Mobile populations

Globally, mobile populations are at higher risk of acquiring HIV due to poor living conditions and lack of access to medical care and prevention. MENA is home to large numbers of migrants and refugees who travel from North Africa to Europe and from Egypt, Sudan, Jordan, and Yemen to the gulf countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and UAE) where demand for foreign labor is high. In Qatar and UAE, migrants make up more than 90% of the total labor force. Recent conflicts in the region have expanded the already large internally displaced and refugee population in the MENA region. Most vulnerable are the victims of human trafficking (mostly women) whose numbers are rising in the MENA region, especially in Sudan, Syria, and Yemen.⁴⁰

2.5. Intimate partners of key populations

Evidence suggests that many members of the KPs described above have intimate relationships with partners to whom they may or may not have disclosed the extent of their risk.^{19,20,35,37,38} This also puts the intimate partners of these key, at-risk populations at high risk of infection. In a study in Iran,¹⁷ HIV prevalence among non-injecting female sexual partners of male PWID was 2.8% (0.7–11.3%), which is twenty times the estimated adult prevalence in Iran. However, direct measures of HIV prevalence and related factors among the partners of KPs are rare globally, and particularly in the MENA region.⁴¹

3. Other factors that contribute to the epidemic

3.1. Young people and HIV

The youth population aged 15–24 years in the MENA region increased from 45 million in 1985 to around 90 million in 2010, becoming the largest cohort in the history of the region.⁴² This population is characterized by considerable diversity. While overall prevalence rates for the young population are generally low, young people who are members of KPs – like young PWID, those who are sexually violated, who are in the sex trade, on the street, young males who have sex with males, and young people who are caught in armed conflict – are at especially high risk.^{43,44} The number of new HIV infections among young people aged 15–24 years in the region was estimated to vary between 3000 and 11 000.⁴¹

3.2. HIV testing

Outreach to sex workers, MSM, and PWID is critical, because they are most at risk of acquiring HIV and they are thought to contribute to a significant proportion of new infections in the region. However, reaching these populations is challenging, because their behaviors are usually considered illicit and very often illegal. For example, between 1989 and 2007, less than 5% of

HIV tests performed in this region included these populations and more than 90% involved migrants screened for entry and residence in the country.⁴⁰ The low number of testing of pregnant women also should be noted. Major challenges for access to testing are the high levels of stigma and discrimination associated with testing for HIV and confidentiality issues, and the lack of HIV testing and counseling officers, especially those trained in caring for stigmatized populations across the region.⁴⁵

3.3. Access to antiretroviral treatment

Recent reports indicate that antiretroviral treatment (ART) reduces the HIV transmission risk,⁴⁶ and as the ART coverage rate increases, HIV incidence decreases; this is described as ‘treatment as prevention’.^{47–49} The rate of ART coverage has increased significantly in the region within the last decade. However, by the end of 2013, the ART coverage level in the region was still the lowest throughout the world at 11%. While the efforts made so far by all countries in the region have contributed to an increase in the number of people receiving treatment, the rapidly growing number of new HIV infections seems to be a major obstacle to closing the gap. In 2013, less than one out of eight PLWH eligible for ART received it in Djibouti, Iran, Egypt, Somalia, Sudan, and Yemen. As a result, the region has experienced a significant increase in mortality from AIDS reaching 17% in 2012.⁵⁰

3.4. Women and the prevention of mother-to-child transmission

Although the number of males infected with HIV in the MENA region is greater than the number of infected females, the increasing trend among women is remarkable. As an example, the incidence of infection among women in Morocco and Yemen between the years 2001 and 2012 increased significantly, from an estimated 4400 to 11 000 per year and from 1300 to 7700 per year, respectively.⁵⁰ About half of Morocco’s new HIV infections are among women, nearly three-quarters of whom have acquired the infection from their husbands.⁴⁰ Similarly in Iran, three-quarters of HIV-infected women had acquired the virus from their husbands, who were mostly PWID.⁵¹ Women are particularly vulnerable to HIV infection through their infected husbands. Cultural, economic, and social factors combined with transactional sex, lack of comprehensive sexual and reproductive health services, including HIV testing, and very low access to treatment also seem to contribute to the vulnerability of women.⁵²

As the number of women living with HIV grows in the region, so does mother-to-child transmission, in the absence of adequate preventive measures. The highest recorded HIV prevalence among pregnant women was in South Sudan (3.4% in 2007 decreasing to 3.0% in 2009), followed by Djibouti (2.1% in 2007 to 1.6% in 2009).¹³

Although the governments of MENA countries have adopted the global targets of reducing the number of new HIV infections among children by 90% and the number of AIDS-related maternal deaths by 50% between 2011 and 2015, in 2012 fewer than 10% of pregnant women living with HIV in the MENA region received ART, which is the lowest among world regions; by comparison, rates for North America, Europe, and the Caribbean are above 95%.⁴⁰

3.5. Stigma and discrimination

Stigma and discrimination of PLWH is a major factor in creating a hidden population that is extremely difficult to reach. Strong moral views on HIV in many Muslim countries prevalent both in the community and among healthcare workers create deeply rooted stigma and discrimination against PLWH and those perceived to be at high risk of infection.⁵³ This prejudice is a

major obstacle for the people most in need of HIV prevention and treatment programs to seek support and care.¹¹ In a study from Egypt including 153 PLWH, nearly half (51.6%) of interviewed individuals reported feeling stigmatized by others and 43.1% reported changes in people's views towards them. Nearly two thirds of PLWH (66.7%) isolated themselves from their community because of fear of stigma and 44.4% reported changes in the behavior of their relatives. More than half (53.6%) of PLWH felt useless to their community. Reported self-stigma was much greater than stigma by others.⁵⁴

Stigma in the healthcare setting is another major issue. Nursing students in Saudi Arabia reported substantial negative attitudes toward PLWH despite relatively high levels of knowledge about AIDS.⁵⁵ In another study from Iran, PLWH reported that healthcare providers had a tendency to hold negative perceptions of drug injection, sex work, and faithlessness. With no exception, all participants had experienced denial of care and service by healthcare providers.⁵⁶ Fear of stigma also has negative effects on access and adherence to ART.⁵⁷

4. Successes and challenges

Despite all of the unfavorable conditions, there have been many improvements in the response of MENA countries to HIV, although at a very slow pace. Some countries (Egypt, Iran, and Morocco, for example) have made considerable progress, both in terms of identifying the key characteristics of their epidemics and responding accordingly.⁴¹

As indicated above, four countries – Pakistan, Egypt, Lebanon, and Tunisia – have provided HIV prevalence estimates for FSW, PWID, and MSM with four rounds of surveys available in Pakistan.^{13,20,58} Eleven countries have conducted IBBS or HIV sero-surveys in FSWs.¹³

Egypt identified the key characteristics of the epidemic with BBSS run in 2006 and 2010.^{12,59} Voluntary counseling and testing (VCT) centers – seven mobile and five fixed – were launched in 2005 in Egypt,⁶⁰ and harm reduction interventions targeting PWID were established in 2008, including peer education on safe sex and safe injection, HIV voluntary counseling and testing using rapid test kits, medical services for the management of sexually transmitted infections, and the distribution of behavior-change communication booklets and brochures, needles, and condoms free of charge.⁵⁹ In Morocco, VCT uptake increased significantly between 2010 and 2013.⁶¹ Morocco ran several testing campaigns to scale-up HIV testing throughout the country.^{62,63}

Although there have been serious efforts to increase ART coverage, only two countries – Djibouti and Morocco – provided treatment to 20–40% of adults and children living with HIV. Morocco increased the number receiving ART 20-fold within <10 years; Djibouti enhanced coverage from 19% in 2010 to 36% in 2012.⁶ The number of PLWH receiving ART reached 3400 in Algeria by 2012 compared to 2900 in 2011, and the new target is 80% by 2015.⁴⁰ In the remaining countries in the region, fewer than 20% of PLWH had access to treatment.⁶

Harm reduction programs are implemented in many MENA countries to varying degrees, with needle and syringe exchange programs in Jordan, Egypt, Syria, Lebanon, Morocco, and Tunisia. Bahrain, Iran, Lebanon, Morocco, and UAE provide opioid substitution therapy.^{61,64}

Only two countries in the region managed to reduce their rates of new infections in 2013 from 2005 levels – The Islamic Republic of Iran (4% reduction) and Djibouti.⁶ Similarly, only two countries – Djibouti (by 70%) and Somalia (by 22%) – have reduced the number of new HIV infections among newborns and children in the period 2005–2013.⁶

The first HIV outbreaks among PWID in Iran were reported around 1996. HIV prevalence then increased considerably in the early 2000s, reaching a peak by 2005. Despite some socio-cultural barriers, the implementation of successful harm reduction programs and opioid replacement therapy decreased the prevalence by 16% in 2006 and the stabilization continued in the following years.^{65,66} HIV prevalence in the 2006 and 2010 multi-city IBBS was stable at 15%;¹⁸ sexual transmission of HIV remained relatively stable until 2006, standing at 5–6%, yet has been rising continuously, reaching 20.7% in 2010.⁶⁶ The biannual surveillance of PWID, FSWs, partners of PWID, and prisoners since 2009 has provided insights into the epidemic, and effective measures taken over the past 10 years have successfully slowed the progression of the epidemic among PWID; however, Iran has failed to address the needs of MSM, partners of PWID, and clients of FSWs.⁶⁷

In the past 4 years, Oman has established a strong program to eliminate HIV transmission from mothers to their children, offering HIV testing to all pregnant women with an acceptance rate of 99% and with almost universal antenatal care. Algeria, Iran, Morocco, and Tunisia have similar interventions.^{6,40} In Tunisia, almost 80% of pregnant women living with HIV receive ART.⁴⁰ A pilot program for the prevention of mother-to-child transmission (PMTCT) has been implemented in three regions in Morocco. A plan to eliminate mother-to-child transmission has been developed for the period 2012–2016. This includes efforts to engage private health providers in providing HIV testing and awareness for pregnant women, and one-third of pregnant HIV-positive women receive ART.^{40,68}

Access to services for preventing mother-to-child transmission in Somalia started in late 2010, and 35 health facilities were providing PMTCT at the end of 2012. The rate of HIV testing in 2012 ranged between 23% and 43%, according to the region. Revitalizing PMTCT in Somalia has been a significant achievement. However, the rate is 3% in terms of coverage, with an estimated unmet need of more than 95%.^{69,70}

The Arab Strategic Framework for the Response to HIV and AIDS (2014–2020) endorsed by the Council of Arab Ministers of Health, aims to support Arab States to achieve the goals and targets of the 2011 United Nations General Assembly High Level Meeting on HIV and AIDS.⁷¹ The Arab AIDS Strategy includes 10 goals. It promotes engagement and emerging leadership from countries, and mentions addressing issues including HIV-related restrictions on entry, stay and residence and KPs for HIV, as well as HIV in conflict and post-conflict settings,⁶ yet leaves the definition of KPs to each government to decide.

5. The role of civil society

Civil society's deep involvement in the HIV response has been seen globally since the early days of the HIV epidemic.⁷² This association has become evident in the MENA region in the last decade, with civil society organizations (CSOs) becoming front liners in working for advocacy and prevention, and other efforts being made in lobbying around issues of funding and treatment. Yet perhaps the most important role of civil society in the MENA region has been how it has managed to maintain close contact with members of KPs throughout their different programs of service provision,^{73,74} outreach, and prevention.⁷⁵ This cannot be generalized over the whole region, since a more hostile environment persists in most countries, but progress can clearly be seen in countries like Morocco, Tunisia, Algeria, and Lebanon, where civil society is a main player – in collaboration with national AIDS programs – in the HIV response.

In the past few years, the rise of multiple regional platforms and networks has been evident in the region, such as the Regional/Arab Network Against AIDS (RANAA),⁷⁶ the Middle East and North Africa

Harm Reduction Association (MENAHRRA)⁷⁷ for people who inject drugs, and ITPC MENA for treatment and prevention, alongside other networks targeting specific KPs such as MENARosa for women living with HIV, the Middle East and North Africa Network for People who use Drugs (MENAnpud),⁷⁷ and M-Coalition⁷⁸ for MSM. These networks highlight the successful experiences at the national regional level as a learning opportunity for partnerships and collaborations, but also as a method of lobbying key policy makers. The engagement of civil society by governments has been a turning point in the HIV response, and now donors such as the Global Fund require this for financial support, with a full understanding of the important role that community members and their representatives can play in shaping the next phase of the epidemic.

6. Conclusions and the path forward

In the last few years, many countries in the region have been affected by social and political unrest and conflict, which may be attributed to longstanding dictatorships, human rights violations, political corruption, economic decline, unemployment, and extreme poverty throughout the region. Cumulatively, these have potential serious implications for the region's HIV epidemic, such as disruption in the implementation of prevention and advocacy programs, interference with service delivery, and high levels of mobility and displacement. The latter may cause or be a result of crowding, unhealthy living conditions, high levels of violence, sex work, and alcohol and substance abuse.^{1,2} Combining the above with the very young demographic and high unemployment in the region⁴² could make the current epidemic very volatile and something that needs to be given a high priority by the international agencies.

It is clear that there is an emerging HIV epidemic in the MENA region. Although the number of PLWH is the lowest globally since the emergence of the virus, the HIV burden is increasing rapidly, with rising numbers of AIDS-related deaths.

Despite unfavorable conditions, many countries in the region have put significant effort into the scale-up of their response to this growing epidemic, such as developing national strategies and the implementation of programs for KPs, indicating an increased political will in the region to address the HIV epidemic. Those countries that have learned from the experiences of others that have faced a more devastating epidemic and have translated this into a robust response to HIV have made significant progress. On the other hand, the response to HIV in other countries has been slower due to denial, stigma, and a reluctance to address sensitive issues.

The time for algorithms and establishing models of the epidemic in the region is done. Creating and implementing specific, culturally suitable programs that could address the denial and stigma in the region appropriately is the key to a timely and appropriate response. We need to highlight and document best practices in specific countries in the region and be able to translate these to other countries. In addition, IBBS of KPs, along with size estimations, should be the main approach of surveillance efforts in all countries, followed by the development and implementation of programs addressing the specific needs of the populations surveyed. Moreover, destigmatization of populations most at risk of HIV on a human rights basis is essential for outreach for surveillance and prevention. For this, we need to use all of our national and international resources; the HIV epidemic in the MENA region is still at a controllable level, and this opportunity should not be missed.

The views and opinions expressed in this paper are those of the authors and not of UNAIDS.

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