

PEPFAR's Evolving HIV Prevention Approaches for Key Populations—People Who Inject Drugs, Men Who Have Sex With Men, and Sex Workers: Progress, Challenges, and Opportunities

Richard Needle, PhD, MPH,* Joe Fu, BS,* Chris Beyrer, MD, MPH,† Virginia Loo, PhD,‡
Abu S. Abdul-Quader,§ James A. McIntyre, MBChB, FRCOG,|| Zhijun Li, MD,¶
Jessie K. K. Mbwambo, MD,# Mercy Muthui,** and Billy Pick, JD††

Abstract: In most countries, the burden of HIV among people who inject drugs, men who have sex with men, and sex workers is disproportionately high compared with that in the general population. Meanwhile, coverage rates of effective interventions among those key populations (KPs) are extremely low, despite a strong evidence base about the effectiveness of currently available interventions. In its first decade, President's Emergency Plan for AIDS Relief (PEPFAR) is making progress in responding to HIV/AIDS, its risk factors, and the needs of KPs. Recent surveillance, surveys, and size estimation activities are helping PEPFAR country programs better estimate the HIV disease burden, understand risk behavior trends, and determine coverage and resources required for appropriate scale-up of services for KPs. To expand country planning of programs to further reduce HIV burden and increase coverage among KPs, PEPFAR has developed a strategy consisting of technical documents on the prevention of HIV among people who inject drugs (July 2010) and prevention of HIV among men who have sex with men (May 2011), linked with regional meetings and assistance visits to guide the adoption and scale-up of comprehensive packages

of evidence-based prevention services for KPs. The implementation and scaling up of available and targeted interventions adapted for KPs are important steps in gaining better control over the spread and impact of HIV/AIDS among these populations.

Key Words: PEPFAR, key populations, HIV prevention

(*J Acquir Immune Defic Syndr* 2012;60:S145–S151)

INTRODUCTION

Substantial evidence indicates that high population coverage of combinations of structural, biological, and behavioral interventions—linked with a supportive social and political environment—can decrease HIV risk and vulnerability among key populations (KPs) such as people who inject drugs (PWID), men who have sex with men (MSM), and sex workers (SWs).^{1–3} Yet, coverage of core interventions for these KPs that have proven to have the greatest impact in preventing the further spread of HIV is limited in most low-income and middle-income countries—including countries receiving support from the President's Emergency Plan for AIDS Relief (PEPFAR).^{3–7}

In this article, we review the progress made by PEPFAR since 2004 in implementing programs for KPs. Specifically, we examine epidemiological patterns, the availability and use of surveillance, surveys, size estimation methods, and scientific findings to plan and implement evidence-based HIV prevention interventions for KPs. Also included in this review are PEPFAR-specific and illustrative case studies, which reflect best program practices for each of the KPs. We also examine the challenges ahead for PEPFAR's programming and make recommendations for KPs to ensure that efforts to introduce and scale-up evidence-based combination intervention packages for PWID, MSM, and SWs are implemented in all affected countries.

Progress and Challenges in Implementing Surveillance, Surveys, and Size Estimation Activities for KPs

During PEPFAR's early years, limited data on hard-to-reach, hidden, and stigmatized populations made it difficult to target resources and plan and implement programs to

From the *Office of the US Global AIDS Coordinator, Department of State, Washington, DC; †Center for Public Health and Human Rights, Johns Hopkins Center for AIDS Research, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD; ‡Partnership for Epidemiological Analysis, Honolulu, HI; §Division of Global HIV/AIDS, Centers for Disease Control and Prevention, Atlanta, GA; ||Anova Health Institute, Johannesburg, South Africa and School of Public Health and family medicine, university of Cape Town, Cape Town, South Africa; ¶Division of Global HIV/AIDS, US CDC Global AIDS Program, China Office, China; #Department of Psychiatry and Mental Health, Muhimbili National Hospital, Dar es Salaam, Tanzania; **Division of Global HIV/AIDS, Centers for Disease Control and Prevention, Kenya; and ††US Agency for International Development.

Various authors have professional relationships with PEPFAR (either as employees of PEPFAR-supported US Government agencies or as grantees/contractors) as outlined in the Copyright Transfer Agreement forms.

The findings and conclusions in this article are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention, the US Government, or the World Health Organization.

CB serves on the PEPFAR Scientific Advisory Board (unpaid). The authors have no other funding or conflicts of interest to disclose.

Correspondence to: Richard Needle, PhD, MD, Office of the Global AIDS Coordinator, SA-29, 2nd floor 2201 C. Street NW, Washington, DC 20522–2920.

Copyright © 2012 by Lippincott Williams & Wilkins

reduce HIV burdens among KPs. PEPFAR concentrated most of its resources during the first five years in building country-level infrastructure and capacity, preventing mother-to-child transmission, supporting antiretroviral therapy (ART), and preventing heterosexually transmitted HIV in sub-Saharan African and Caribbean countries. However, PEPFAR's 2008 reauthorization led to an increase in use of methods to provide reliable estimates of the numbers and characteristics of KPs, an expansion of evidence-based and rights-based policies and programs for KPs and greater attention to KP programming in countries with generalized and concentrated HIV epidemics. In several countries, national behavioral surveillance and/or surveys have included all 3 KPs. Data collected among KP using behavioral surveillance and surveys and size estimation approaches are increasingly helping to estimate disease burdens, better understand risk behavior trends, and identify coverage and resource requirements for scale-up of services.

A number of PEPFAR training efforts are now under way to assist countries to better define the size and characteristics of the specific KP and to use the data generated to plan and implement appropriate intervention programs. For example, in 2010–2011, PEPFAR brought together about 350 participants from 65 countries in 3 workshops in Africa, 1 in central Asia and 1 in the Caribbean, to help build national and local capacity for using population size estimation methods and behavioral surveillance and surveys for KP. These data will become increasingly available in the future; at this time, many countries are in the protocol stage and/or implementing their studies. However, although these and other activities encouraged the collection of reliable data, a number of ongoing challenges remain for PEPFAR, including (1) convincing more countries to undertake these size estimation studies, (2) improving the over-

all quality of collected data, and finally (3) convincing countries to actually use the resulting data for KP policy, program planning and implementation, and resource allocation. While many PEPFAR countries have undertaken various surveys, size estimation activities, the challenges to collecting data continue to remain. As in most countries these populations are either hidden, face severe stigma or discrimination, collecting data can be very challenging. This also minimizes quality of data collected.

POPULATIONS OF PWID

HIV/AIDS Epidemiology and Burden Among PWID

Globally, an estimated 3.0 million of the nearly 16 million PWID worldwide are HIV-infected. The PWID population accounts for nearly 10% of all HIV-infected people in the world.⁸ The reuse or sharing of HIV-contaminated syringes and needles is the major route of HIV transmission among PWID, although sexual transmission between PWID and their noninjecting sexual partners accounts for an increasing proportion of HIV burdens in many countries.^{9,10}

US-supported surveillance and surveys among PWID have been conducted in Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan), Vietnam, Tanzania, Kenya, Russia, Thailand, and Ukraine. There is considerable regional, country-level, and within-country variation in the estimated size and HIV prevalence among PWID. In Central Asia and Eastern European countries with PEPFAR programs, HIV prevalence ranges from a low of 1.43 in Georgia to a high of 37.15 in Russia and of 32.4 in Ukraine among PWID. In South and Southeast Asian countries with PEPFAR programs, HIV prevalence is lowest in the Philippines (0.43) and highest

TABLE 1. PEPFAR's Evidence-Based Interventions for KPs

KPs	PWID	PWID	SWs	MSM
Guidance issued	2006	2011†	Prevention guidance 2011‡	2011*
Interventions outlined by PEPFAR guidance	Community-based outreach§; no USG funds for NSPs; HCT; Abstinence, Be Faithful, Condom programs; ART for injection drug users (IDUs) living with HIV; opioid substitution therapy for HIV-positive IDUs but only on a pilot basis for HIV-negative IDUs; prevention and treatment of STIs	Community-based outreach§; NSPs; opioid substitution therapy and other drug dependence treatment; HCT; ART for IDUs living with HIV; prevention and treatment of STIs; condom programs for IDUs and their sexual partners; targeted IEC for IDUs and their sexual partners; vaccination, diagnosis, and treatment of viral hepatitis ; prevention, diagnosis, and treatment of tuberculosis	Community-based outreach; access to condoms; targeted IEC for SWs and their sexual partners; increased access to ART; prevention and treatment of STIs; HCT	Community-based outreach; distribution of condoms and condom-compatible lubricants; HIV counseling and testing (HCT); active linkage to health care and ART; targeted information, education, and communication (IEC); STI prevention, screening, and treatment
New advances under consideration		ART TasP	PrEP, microbicides, ART TasP; WHO SW guidance in 2012	PrEP, microbicides, ART TasP

PrEP, Pre-Exposure Prophylaxis; TasP, Treatment as Prevention.

*<http://www.pepfar.gov/guidance/combinationprevention/combprevmsm/index.htm>.

†<http://www.pepfar.gov/guidance/combinationprevention/combprevidu/index.htm>.

‡<http://www.pepfar.gov/guidance/171094.htm>.

§WHO does not include community-based outreach as a separate intervention in the comprehensive package; however, it is recommended as an extraordinarily effective method of overcoming challenges related to accessing PWID populations.

||To date, there has been only limited programmatic attention to screening, diagnosis and treatment for viral hepatitis in partner countries with PEPFAR support.

Number of KPs Reached through PEPFAR Preventive Interventions in 2011

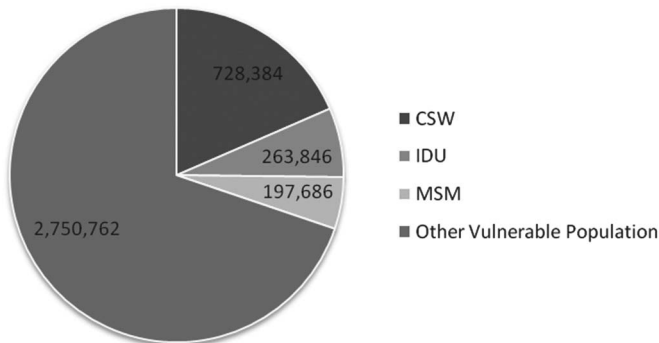


FIGURE 1. Number of KPs reached through PEPFAR Preventive Interventions in 2011. Source: Office of the US Global AIDS Coordinator.

in Indonesia (42.5). Vietnam reports an HIV prevalence of 33.85 among PWID.¹¹

Recently, some east African countries, specifically Tanzania and Kenya, began reporting HIV epidemics

BOX 1.

An Exemplary Program: Scale-Up of MAT Programs in China

In 2006, PEPFAR supported the first mobile MAT clinic in China. The mobile clinic concept has now been expanded from a single mobile clinic in a single province to cover 9 provinces with 28 mobile clinics. PEPFAR also helped China evaluate its MAT programs by helping revise the MAT monitoring and evaluation protocol and by sending experts to help with the actual evaluation.

Because many PWID are also HIV-infected, PEPFAR supported a pilot program integrating MAT and antiretroviral treatment. PWID treated with this model have had improved adherence and treatment outcomes to both interventions. This technical assistance model represents an innovative use of PEPFAR support for countries with concentrated epidemics where PEPFAR resources are minimal.

MAT has reduced the risk for HIV transmission by reducing heroin use and frequency of injection. At baseline, 77% of clients had injected drugs in the past month. This dropped to 17%, 14%, and 13% at 1-year, 2-year, and 3-year evaluations. HIV incidence among drug users receiving MAT fell from 1.00/100 person-years in 2005 to 0.38/100 person-years in 2010. However, HIV incidence among registered drug users who are not undergoing MAT stands between 2.07 and 9.96 per 100 person-years. In 2009 alone, an estimated heroin use reduction of 22.4 tons was attributed to MAT programs in China, resulting in cost savings of nearly 1.28 billion US dollars.

BOX 2.

An Exemplary Program: Scale-Up of MAT Programs in Tanzania

Tanzania is the first PEPFAR country in Africa to establish an MAT program as part of its comprehensive HIV prevention response for PWID. A national framework for the provision of comprehensive HIV prevention and risk reduction interventions for PWID was established in October 2010.

In February 2011, the first public MAT clinic offering methadone was launched at Muhimbili National Hospital in Dar es Salaam. As of March 2012, 400 clients had been enrolled. Out of the 218 PWID who received HIV testing and counseling between February and December 2011 through the MAT clinic, 81 (37%) were HIV-positive, whereas those who had received HIV testing and counseling services through the clinic's mobile caravan had a 23% HIV prevalence over that period. It is expected that 2 additional clinics in Dar es Salaam and 1 in Zanzibar will be functional in the next year. Tanzania's MAT program also provides opportunities for other African countries to study its program and develop plans for implementing MAT in their own countries.

among PWID. A January–March 2011 integrated behavioral and biological surveillance survey in Nairobi found an HIV prevalence of 30.2% among PWID sharing syringes and 5.4% among nonsharing PWID.¹² Studies in Tanzania have estimated an overall HIV prevalence of 42% among PWID, compared with an estimated prevalence of 6% in the general population.^{13–15}

Evidence Base for Intervention Program Access and Effectiveness

There have been many systematic reviews of effectiveness of the core components of a comprehensive HIV prevention program for PWID.^{16,17} A number of PWID interventions, including needle and syringe programs (NSPs), medication-assisted treatment (MAT), and ART, have been shown to reduce HIV incidence when used individually. Findings from recent mathematical modeling studies reveal that high coverage of MAT and NSP among HIV-infected PWID could lead to a 29% reduction in HIV incidence within 5 years, depending on the setting.¹ However, many countries exhibit ongoing resistance to implementation and scaling up of NSPs and/or MAT that will potentially limit the impact on HIV incidence.

Existing Data on Prevention, Care, and Treatment Program Coverages

Global estimates among PWID suggest that only 5% of injections use sterile equipment provided by an NSP; only 8 of every 100 PWID were receiving opioid substitution therapy and only 4% of HIV-infected PWID were receiving ART.¹ For PWID, data from Central Asia/Eastern Europe and Asia

indicate that in 10 of the 12 PEPFAR-supported countries, fewer than 50% of PWID accessed voluntary testing and counseling and, with the exception of China, no country has provided MAT for >20% of its PWID population.¹⁸ PWID receiving opioid substitution therapy totaled 4786, an almost 80% increase from 2010 in Central Asia, Vietnam, Ukraine, and Tanzania.¹⁹ Of the PWID reached in 2011, >4300 were reported to have accessed MAT in Vietnam. Figure 1 illustrates the data reported on PEPFAR key populations (KPs) indicators in the annual progress report from 2010 to 2011. In 2011, PEPFAR programs reached >4 million KPs. Specifically, PEPFAR countries reported reaching 297,846 PWID with individual-level and/or small group-level evidence-based interventions. There is regional variation, with Eastern Europe and Central Asia reaching 146,000 PWID, or 70% of the total KPs and Southeast and South Asia reaching about 88,000 PWID, but only 7% of the total KPs were reached with individual and/or small group interventions.

Some countries, notably Vietnam and Ukraine, reach large numbers of PWID with NSP services. The Global Fund to Fight AIDS, Tuberculosis, and Malaria is the major donor supporting MAT and NSP in low-income and middle-income countries.²⁰

PEPFAR's Approach to HIV/AIDS Among PWID

PEPFAR had issued guidance to address programs for PWID in 2006 that supported elements other than NSPs and that made MAT available only on a pilot basis for HIV-negative drug users. Interventions for other KPs are also included in Table 1. Table 1 shows the evidence-based PWID interventions included in these guidance documents. PEPFAR has encouraged countries and the US Government (USG) to provide assistance that would lead to the adoption of a comprehensive package of prevention services. These documents build on evidence-based public health interventions and policies, and support laws, regulations, and policies linked with a human rights approach. An updated PEPFAR guidance, released in July 2010, highlighted the importance of a comprehensive HIV prevention program and, for the first time, allowed funds to be used for NSPs and for MAT for all PWID independent of their HIV status. This policy shift followed Congressional lifting of the domestic ban on NSPs as part of the Consolidated Appropriations Act of 2010, and aligned PEPFAR programming with guidance from Joint United Nations Programme on HIV/AIDS (UNAIDS), World Health Organization (WHO), and United Nations Office on Drugs and Crime. Congress in 2011 again reestablished the ban on direct USG support for NSP.²¹ Boxes 1 and 2 highlight exemplary PEPFAR programs in China and Tanzania.

POPULATIONS OF MSM

HIV/AIDS Epidemiology and Burden Among MSM

A recently proposed framework for characterizing HIV epidemics among MSM in wider epidemiological contexts has described 4 different regional-level patterns of MSM epidemics

in low-income and middle-income countries taking into account the epidemic patterns across KPs and general populations.²² The first pattern, primarily seen in South America, is characterized by MSM predominance, that is, MSM are the largest contributors to HIV prevalence within a general population with very low overall rates of HIV infection. In these countries, HIV prevalence is typically >10% and much higher than in the general population. PWID prevalence rates are well below 1%. A second scenario, in which MSM epidemics are occurring within HIV epidemics primarily driven by injection drug use, is found in Eastern Europe, Russia, and Central Asia. HIV among MSM is generally >10% and much higher than in the general population. Third, MSM epidemics occurring within widespread heterosexual epidemics are generally seen in Southern and Eastern Africa, and here men had substantial HIV acquisition risks from female and male sexual partners. HIV rates among MSM were highest in this epidemic scenario, reflecting the overall very high burden of HIV disease in African populations. Finally, epidemic contexts where heterosexual spread, sex work, MSM risks, and injection drug use are each contributing to local HIV epidemiology are seen in the complex epidemics of South and Southeast Asia. Among MSM, HIV risk is highly correlated with having unprotected receptive anal sex, likely because of the very high per-act transmission probability associated with this route of exposure.^{23,24}

When PEPFAR began in 2004, little information was available on HIV among gay, bisexual, or other MSM in 14 PEPFAR focus countries. From 2006 to 2008, as African MSM communities began to emerge, a series of reports from several African nations reported consistent findings: there were, indeed, MSM in Africa; HIV rates were high in these populations wherever assessments were made; and these populations were markedly underserved by effective care, treatment, and/or prevention programs.²⁵

After the implementation of PEPFAR, however, a number of these countries began to either include questions on male-to-male sexual behaviors in surveillance and/or survey activities that would reach MSM. The first MSM survey in sub-Saharan Africa was conducted in Senegal in 2005.²⁶ To date, 17 countries have either implemented or plan to implement surveillance and surveys focusing on MSM.

Evidence Base for Intervention Program Access and Effectiveness

In recent years, a wave of opposition—cultural, political, and religious—has been rising as MSM communities emerge across Africa. Opposition to equality of MSM and other groups, with the potential for impact on health services for MSM, was intense in Senegal, Uganda, Malawi, and Kenya. In Senegal in 2008, health care workers were arrested by the government and emerging health services were closed down there.²⁷ Ugandan activists, who demonstrated peacefully at the PEPFAR implementers' meeting in Kampala for inclusion of MSM in Uganda's HIV program, were subsequently detained, beaten, and harassed. PEPFAR and the US Department of State have followed a community-led approach of promoting services for MSM where safety could be assured, and where community groups are strong and cohesive enough to meaningfully engage in programs.

BOX 3.**An Exemplary Program: PEPFAR MSM Service Support in South Africa**

South Africa has a legal and policy environment unique for Africa; homosexuality is decriminalized, same-sex marriage is legal, and there is government commitment to nondiscrimination. Despite this environment, HIV prevention messages and provision of care have focused almost exclusively on the heterosexual epidemic, with few targeted services for MSM. Reported HIV prevalence rates among South African MSM range from 9% to 34%, and there have been several reports of stigmatization and inadequate treatment for MSM by health service staff.

The Health4Men program was established by the Anova Health Institute with PEPFAR support in August 2008. This program resulted in the first MSM-targeted HIV-related service in a South African government facility. Shortly thereafter, the program was expanded to a second facility. These services provide comprehensive sexual health, HIV prevention, diagnosis, care and treatment, and mental health services that address the health care and prevention needs of MSM.

PEPFAR's direct support for the establishment of a limited dedicated MSM program has raised awareness and catalyzed thinking and action in South Africa and beyond. The services have reached >5000 MSM, and trained almost 1000 health workers in MSM sensitivity and appropriate care. The South African Department of Health has acknowledged the value of the program, and the new 2012–2016 National Strategic Plan explicitly recognizes MSM as a KP for prevention and care.

President Obama and Secretary of State Clinton have made presentations and proposed action focusing on ensuring human rights and protections for MSM from punitive laws and actions to monitor these situations.^{28,29}

Meanwhile, a number of systematic reviews have suggested the effectiveness of the core components of a comprehensive HIV prevention program for MSM.^{22,30} Elements of an effective combination package for HIV prevention for MSM include condom and appropriate lubricant promotion and distribution; access to HIV testing, counseling, and risk reduction education where sexual risks and practices can be safely disclosed; sexually transmitted infection (STI) care, including screening and care for oropharyngeal and anorectal STI; and provision of antiretrovirals for HIV-positive MSM who meet treatment criteria. Structural interventions, including health care worker sensitization and training in culturally competent care for MSM, would likely be required in many settings before this basic package could be implemented.

The most important recent development in HIV prevention for MSM has been the iPrEX (Preexposure *Prophylaxis* Initiative) trial of oral chemoprophylaxis. This 2010 trial was the first phase III efficacy trial to include an African MSM population (in South Africa) and demonstrated an overall 41% protective efficacy with daily ART for the prevention of HIV among MSM.³¹

Among men with detectable intracellular drug levels of drug, the protective effect was >90%, suggesting the great potential of this intervention to reduce HIV acquisition in anorectal intercourse—the first such biomedical finding of this kind.

Existing Data on Prevention, Care, and Treatment Program Coverages

Current UNAIDS global estimates of prevention program coverage indicate that only between 10% and 20% of MSM receive even the most basic package of preventive interventions.⁵ MSM programmatic coverage data for specific evidence-based interventions are not available. On the PEPFAR programmatic indicator on individual and/or small group evidence-based interventions, countries report that 197,686 MSM were reached in 2011. In South Africa, where constitutional protections provide a universal right to health care equity, PEPFAR has been able to support 2 landmark clinics that provide comprehensive HIV care to MSM in safe and supportive environments (Box 3).

PEPFAR's Approach to HIV/AIDS Among MSM

PEPFAR's 2011 MSM guidance document linked public health to human rights and sought to create safe environments for HIV services among MSM. Table 1 shows the evidence-based MSM interventions included in the technical guidance documents. This document builds on evidence-based public health interventions (described previously) and policies, supports laws, regulations, and policies that allow for MSM to safely and in a timely way access a core package of appropriate and nondiscriminatory HIV prevention, care, and treatment services.

SW POPULATIONS**HIV/AIDS Epidemiology and Burden Among SWs**

Sex work, and particularly unprotected sexual intercourse, was recognized as an early driver of many epidemics in sub-Saharan Africa well before PEPFAR began.³² Many African countries with generalized epidemics have documented HIV prevalence levels 3–10 times higher among populations of SWs, compared with the general population. The UNAIDS and World Bank's Modes of Transmission model has estimated that between 2.7% and 30.9% of all new HIV infections are directly or indirectly related to sex work.³³ Among generalized epidemics in sub-Saharan Africa, Baral et al³ estimate that SWs account for a wide range of all adult female HIV infections in individual countries, ranging from 4.5% (in Nigeria) to 76.7% (in Togo). They also report that regional pooled variation in the HIV burden among female SWs in low-income and middle-income countries is highest in sub-Saharan Africa (36.9%), followed by a HIV prevalence of 10.9% in Eastern Europe, 6.1% in Latin America and the Caribbean, and 5.2% in Asia. Surveys among female SWs, including HIV testing and counseling, have been conducted or planned in a number of PEPFAR countries.

Evidence Base for Intervention Program Access and Effectiveness

The most recent 2011 PEPFAR data indicate that >725,000 SWs received information and/or commodities (eg, condoms) from PEPFAR-supported prevention programs (Fig. 1). Of those, 55% were in sub-Saharan Africa, 23% in South and Southeast Asia, and 17% in Latin America.

Successful models in South Asia (India) and Southeast Asia (Thailand), developed before the existence of PEPFAR, have helped define the package of service for SWs. Guidance developed by WHO and, more recently, by UNAIDS provide a toolkit for SW programming that has incorporated elements of both models into the essential recommended strategies.^{34,35} The UNAIDS guidance identifies the 3 key pillars of an effective evidence-based response to HIV and sex work: (1) ensuring universal access to services, (2) building a supportive environment and partnerships, and (3) reducing vulnerability and addressing structural issues.

Existing Data on Prevention, Care, and Treatment Program Coverages

In fifteen sub-Saharan African countries, the percentages of sex workers who received an HIV test in the last 12 months and who knows the results ranged from 35% to 95%.³⁶ In Latin American and the Caribbean, the range was 185 to 75%. In East, South, and South-East Asia, it ranged from 19% to 98%.³⁶ The results indicate that while in some countries large percentages of sex workers were reached with prevention services (in this case HIV testing), a significant number of countries are yet to expand prevention services among SWs.

PEPFAR's Approach to HIV/AIDS Among SWs

Information on how to program for SWs has been available in PEPFAR's Technical Considerations since 2005. In addition, the 2011 PEPFAR guidance on preventing sexual transmission includes a review of evidence relating to SWs and discusses a package of prevention services appropriate for SWs. However, a technical guidance document specifically developed for SW programming has not been published. A new WHO technical guidance document will be released in 2012, which will further inform PEPFAR programs for SWs. This new document will summarize the research related to the package of interventions for preventing the spread of HIV among SW populations. Box 4 highlights an exemplary PEPFAR SW HIV prevention program in Kenya.

RECOMMENDATIONS AND CHALLENGES FOR MOVING PEPFAR FORWARD

PEPFAR remains in a truly unique position to advance the health of KPs globally and continues to build on its current position by expanding support for a full package of evidence-based, high-coverage, and comprehensive programs to reduce the HIV burdens in these populations. The USG can play a significant role:

BOX 4.

An Exemplary Program: Kenya's Program for Providing Services to SWs

The PEPFAR program in Kenya has supported a government-led SW program. Kenya established national guidelines for delivering services for SWs, who have an average HIV prevalence of 30%, >4 times the prevalence among women in the general population.³⁷ PEPFAR has supported the country's focused approach to increasing SWs' access to a comprehensive package of services. In the past 2 years, the number of service delivery sites in Kenya providing comprehensive services to SWs has risen from 2 to nearly 50; Nairobi province leads with a rapid expansion and scale-up from the initial 1 site to the current 10 sites. The sites have enrolled >40,000 SWs to receive combination prevention services. Prevention education and condom use skills are included, and >85% of SWs enrolling for services opt to have HIV testing and counseling. More importantly, SWs feel that they are served in a safe and caring environment.

- By continuing to provide strong and visible leadership;
- By helping to strengthen political will across multiple sectors of government, multilateral agencies, and civil society; and
- By helping to create a safe environment with supportive legislation and policies that facilitate rapid scaling up of comprehensive HIV prevention programs for KP.

In an era of limited resources, it will be even more challenging but essential to:

- Advocate for laws, policies, and regulations supportive of implementing effective prevention, treatment, and care programs for KPs.
- Increase financial and technical resources for KP interventions that follow the epidemiology and match the burden of HIV disease.
- Ensure that reliable and credible data are collected and used in building government-level support, shaping country strategies, and measuring program impact. Data limitations related to the size of populations are not sufficient to delay the implementation of comprehensive evidence-based interventions for KPs.
- Strive to expand a public health and human rights approach globally to reduce stigma and discrimination and enable KPs to access needed services.

While PEPFAR programs have made significant contributions towards prevention, care and treatment of HIV among KPs, other multilateral and bilateral organizations such as WHO, UNAIDS, Global Funds, have also supported the implementation of comprehensive HIV programs to reduce the HIV burden among KPs. Success in this endeavor requires revising and resolving enduring contentious policy issues that limit programs such as NSPs and MAT for PWID; country efforts to criminalize and punish MSM, PWID, and

SWs; and the antiprostitution pledge related to organizations working with SWs.

REFERENCES

- Degenhardt L, Mathers B, Vickerman P, et al. Prevention of HIV infection for people who inject drugs: why individual, structural, and combination approaches are needed. *Lancet*. 2010;376:285–301.
- Beyrer C, Baral SD, Walker D, et al. The expanding epidemics of HIV type 1 among men who have sex with men in low- and middle-income countries: diversity and consistency. *Epidemiol Rev*. 2010;32:137–151.
- Baral S, Beyrer C, Muessig K, et al. Burden of HIV among female sex workers in low-income and middle-income countries: a systematic review and meta-analysis. *Lancet Infect Dis*. 2012. doi:10.1016/S1473-3099(12)70066-X.
- Mathers BM, Degenhardt L, Ali H, et al. HIV prevention, treatment, and care services for people who inject drugs: a systematic review of global, regional, and national coverage. *Lancet*. 2010;375:1014–1028.
- Beyrer C, Baral SD, Kerrigan D, et al. Expanding the space: inclusion of MARPS populations in HIV prevention, treatment, and care services. *J Acquir Immune Defic Syndr*. 2011;57:S96–S99.
- US President's Emergency Plan for AIDS Relief. *PEPFAR Scientific Advisory Board Recommendation for the Office of the U.S. Global AIDS Coordinator to Intensify Programmatic Activity and Implementation Science to Reduce HIV Burden, Increase Coverage and Improve PEPFAR's Impact for Key Populations*. Washington, DC: Office of the US Global AIDS Coordinator; 2011.
- amfAR, Johns Hopkins Bloomberg School of Public Health. *Achieving an AIDS-Free Generation for Gay Men and Other MSM: Financing and Implementation of HIV Programs Targeting MSM*. Washington, DC: amfAR; 2012.
- Mathers BM, Degenhardt L, Phillips B, et al. Global epidemiology of injecting drug use and HIV among people who inject drugs: a systematic review. *Lancet*. 2008;372:1733–1745.
- Joint United Nations Programme on HIV/AIDS. *Report on the Global AIDS Epidemic*. Geneva, Switzerland: UNAIDS; 2010.
- Des Jarlais DC, Arasteh K, Semaan S, et al. HIV among injecting drug users: current epidemiology, biologic markers, respondent-driven sampling, and supervised-injection facilities. *Curr Opin HIV AIDS*. 2009;4:308–313.
- Needle R, Zhao L. *HIV Prevention Among Injection Drug Users: Closing the Coverage GAP*. Washington, DC: Center for Strategic and International Studies Global Health Policy Center; 2010.
- NASCOP. *Behavioral and Biological Surveillance of Most At-Risk Populations in Kenya*. Nairobi, Kenya: NASCOP; 2012.
- Williams ML, McCurdy SA, Bowen AM, et al. HIV seroprevalence in a sample of Tanzanian intravenous drug users. *AIDS Educ Prev*. 2009;21:474–483.
- Msami A. *HIV Infection Among Injecting Drug Users in Kinondoni Municipality*. Dar es Salaam, Tanzania: Muhimbili University of Health and Allied Sciences; 2004.
- Joint United Nations Programme on HIV/AIDS/World Health Organization. *Epidemiological Fact Sheet on HIV and AIDS: Tanzania*. Geneva, Switzerland: UNAIDS; 2009. Available at: <http://www.unaids.org/en/regionscountries/countries/unitedrepublicoftanzania/2009>. Accessed April 19, 2012.
- Institute of Medicine. *Preventing HIV Infection Among Injecting Drug Users in High-Risk Countries*. Washington, DC: National Academies Press; 2007.
- Jurgens R, Csete J, Amon J, et al. HIV in people who use drugs, and human rights. *Lancet*. 2010;376:475–485.
- Needle RH. *PEPFAR Regional Meeting Presentation*. Johannesburg, South Africa: Office of the US Global AIDS Coordinator; 2011.
- Kim E. *FY 2011 APR Review: Prevention of HIV in Persons Engaged in High Risk Behaviors*. Washington, DC: Office of the US Global AIDS Coordinator; 2012.
- Bridge J, Hunter B, Atun R, et al. Global Fund investments in harm reduction from 2002–2009. *Int J Drug Policy*. 2012; Published online ahead of print March 13, 2012.
- amfAR. *amfAR Deeply Critical of Re-Imposition of Ban on Federal Funding for Syringe Exchange*. Press release. Washington, D.C.: amfAR; 2011.
- Beyrer C, Wirtz AL, Walker D, et al. *The Global HIV Epidemics Among Men Who Have Sex With Men*. Washington, DC: World Bank; 2011. Available at: <http://siteresources.worldbank.org/INTHIVAIDS/Resources/375798-1103037153392/MSMReport.pdf>. Accessed March 28, 2012.
- Baggaley RF, White RG, Boily MC. Infectiousness of HIV-infected homosexual men in the era of highly active antiretroviral therapy. *AIDS*. 2010;24:2418–2420.
- Baral S, Sifakis F, Cleghorn F, et al. Elevated risk for HIV infection among men who have sex with men in low- and middle-income countries 2000–2006: a systematic review. *PLoS Med*. 2007;4:e339.
- Beyrer C, Baral S, Trapence G, et al. HIV prevalence, risks for HIV infection, and human rights among men who have sex with men (MSM) in Malawi, Namibia, and Botswana. *PLoS One*. 2009;4:e4997.
- Wade AS, Kane CT, Diallo PA, et al. HIV infection and sexually transmitted infections among men who have sex with men in Senegal. *AIDS*. 2005;19:2133–2140.
- Poteat T, Diouf D, Drame FM, et al. HIV risk among MSM in Senegal: a qualitative rapid assessment of the impact of enforcing laws that criminalize same sex practices. *PLoS One*. 2011;6:e28760.
- Obama BH. *Presidential Memorandum—International Initiatives to Advance the Human Rights of Lesbian, Gay, Bisexual, and Transgender Persons*. Washington, DC: White House; 2011.
- Clinton HR. *Remarks in Recognition of International Human Rights Day*. Geneva, Switzerland: US Department of State; 2011.
- World Health Organization. *Prevention and Treatment of HIV and Other Sexually Transmitted Infection Among Men Who Have Sex With Men and Transgender People. Recommendations for a Public Health Approach*. Geneva, Switzerland: WHO; 2011.
- Grant RM, Lama JR, Anderson PL, et al. Preexposure chemoprophylaxis for HIV prevention in men who have sex with men. *N Engl J Med*. 2010;363:2587–2599.
- World Health Organization. *Preventing HIV Among Sex Workers in sub-Saharan Africa: A Literature Review*. Switzerland: WHO; 2011.
- Joint United Nations Programme on HIV/AIDS. *Analysis of HIV Prevention Response and Modes of HIV Transmission: The UNAIDS-GAMET Supported Synthesis Process*. Geneva, Switzerland: WHO; 2008. Available at: http://www.unaidsrsts.org/sites/default/files/modesoftransmission/analysis_hiv_prevention_response_and_mot.pdf. Accessed April 19, 2012.
- World Health Organization. *Toolkit for Targeted HIV/AIDS Prevention and Care in Sex Work Settings*. Geneva, Switzerland: WHO; 2005.
- Joint United Nations Programme on HIV/AIDS. *UNAIDS Guidance Note on HIV and Sex Work*. 2009. Available at: http://data.unaids.org/pub/basedocument/2009/JC2306_guidance_note_hiv_and_sexwork_en.pdf. Accessed March 28, 2012.
- World Health Organization. *Global HIV/AIDS Response Progress Report 2011*. Geneva: WHO; 2011. Available at: http://www.who.int/hiv/pub/progress_report2011/hiv_full_report_2011.pdf. Accessed June 19, 2012.
- National Guidelines for STI/HIV Programs for Sex Workers. Available at: <http://nascop.or.ke/library/Marps/Sex%20Worker%20Guidelines.pdf>. Accessed July 2, 2012.