

Research Paper

Design, implementation, and monitoring of HIV service packages for people who inject drugs: An assessment of programs supported by the global fund in 46 countries



Dave Burrows^a, Haley Falkenberry^a, Lou McCallum^a, Danielle Parsons^a, Ed Ngoksin^b, Jinkou Zhao^{b,c,d,*}, Osamu Kunii^b

^a APMG Health Inc. New York, United States

^b The Global Fund to fight AIDS, Tuberculosis and Malaria, Geneva, Switzerland

^c Center for Global Health, Nanjing Medical University, Nanjing, China

^d Jiangsu Provincial Center for Disease Control and Prevention, Nanjing, China

ARTICLE INFO

Keywords:

People who inject drugs
HIV prevention
HIV treatment
Public policy

ABSTRACT

Background: People who inject drugs (PWID) are at higher risk of acquiring and transmitting HIV, accounting for an estimated 10% of HIV new infections globally. The World Health Organization (WHO) and other international agencies have clearly outlined the comprehensive package of services that should be available for PWID.

Methods: This paper summarizes the data and findings from the PWID service packages assessed in 15 countries across different regions. It also provides data on the design of PWID programs in a further 30 countries that identified PWID as a key population in their national HIV strategic documents. A mixed-method approach was used, including desk reviews, key informant interviews, site observations and group interviews with implementers and PWID focus groups.

Results: Design of service packages varied considerably between countries while many matched the WHO Comprehensive Package. Only 85% countries (39/46) included needle-syringe exchange programs (NSEP) and 76% included opioid agonist therapy (OAT). Only 17% countries included overdose management in their package design. Across the 46 countries assessed, the average coverage with defined prevention package was 40% among countries for which coverage figures could be derived.

Conclusions: Despite some examples of client-based, high-quality services in challenging environments, few countries, which rely primarily on external donor support, are reaching the necessary coverage levels across the full range of PWID HIV prevention, testing and care services. Transition from donor to domestic funding to fund this element of the HIV responses in many countries presents a compelling case to prevent PWID from being further left behind.

Background

In 2019, key populations (KP) and their sexual partners accounted for approximately 62% of new HIV infections globally (UNAIDS, 2020). The five key populations (KP) affected by HIV were here identified as: men who have sex with men (MSM), people who inject drugs (PWID), sex workers (SW), transgender people (TG), and people in prisons and other closed settings. The World Health Organization (WHO) and other international agencies have clearly outlined the comprehensive package of services that should be available to KP (UNDP/IRGT/UNFPA/UCSF

Center of Excellence for Transgender Health Johns Hopkins Bloomberg School of Public Health/WHO/UNAIDS/USAID, 2016; UNFPA/Global Forum on MSM & HIV/UNDP/WHO/USAID/World Bank, 2015; UNODC/ILO/UNDP/WHO/UNAIDS, 2013; UNODC/UNAIDS/UNDP/UNFPA/WHO/USAID, 2017; WHO, 2016a; WHO/UNFPA/UNAIDS/Global Network of Sex Work Projects/World Bank, 2013).

Available data suggested that the risk of acquiring HIV for PWID is 22 times higher than for people who do not inject drugs, and people who inject drugs accounted for an estimated 10% of global infections, including 48% of new HIV infections in eastern Europe and Central Asia,

* Corresponding author at: Technical Advice and Partnerships Department, the Global Fund to fight AIDS, Tuberculosis and Malaria, Chemin du Pommier 40, 1218 Grand-Saconnex, Geneva, Switzerland.

E-mail address: jinkou.zhao@theglobalfund.org (J. Zhao).

<https://doi.org/10.1016/j.drugpo.2020.103036>

Received 29 March 2020; Received in revised form 2 November 2020; Accepted 3 November 2020

Available online 17 November 2020

0955-3959/© 2020 Published by Elsevier B.V.

and 43% of new infections in the Middle East and North Africa in 2019 (UNAIDS, 2020). The United Nations General Assembly's 2016 Political Declaration on Ending AIDS called on countries to ensure that 90% of those at risk of HIV infection, including PWID, are reached by comprehensive prevention services by 2020. Yet, needle-syringe distribution and opioid agonist therapy coverage remained low in most of the 53 countries that have reported data to UNAIDS in recent years (UNAIDS 2019a). For PWID and for all other KP, UNAIDS and WHO recommended that a package of services be provided.

To date, there have been few attempts to assess how these packages of services have been designed and implemented in countries (WHO, 2018). In 2017, the Global Fund to fight AIDS, Tuberculosis and Malaria (The Global Fund) contracted APMG Health to conduct assessments of the design, implementation and monitoring of national HIV service packages for KP in 65 countries, across six regions, where the Global Fund had active HIV grants. The assessments were completed in late 2018 with reports published in early 2019 (Burrows, McCallum, Parsons & Falkenberg, 2019; Burrows, Parsons, Falkenberg & McCallum, 2019; Burrows, Parsons, McCallum, & Falkenberg, 2019; Parsons, Burrows, Falkenberg & McCallum, 2019; McCallum, Perez, Burrows, Parsons & Falkenberg, 2019; Falkenberg, Parsons, Burrows & McCallum, 2019; Perez, Burrows, Parsons, McCallum & Falkenberg, 2019). This paper summarizes the data and findings from the PWID service packages assessed in 16 countries: Afghanistan, Armenia, Belarus, Georgia, Kenya, Kosovo, Kyrgyz Republic, Moldova, Morocco, Nepal, Pakistan, Sierra Leone, Tunisia, Ukraine and Uzbekistan. Desk reviews were done in an additional 30 countries that identified PWID as a KP in their HIV National Strategic Plans (NSP) or equivalent documents.

Methods

A mixed methods approach was applied to answer the following questions:

- Are HIV service packages, as designed in the national guidelines or supported by Global Fund programs, in line with international standards and guidelines? Are they appropriate to epidemiological context, available, accessible and utilized by relevant key population groups?
- Is the implementation of HIV service packages reaching intended target groups, taking into account specific needs and vulnerabilities within sub-groups of key populations (e.g. age, sex)? What are the coverage and reported quality of these programs?
- Are the monitoring framework, tools and other mechanisms set up by implementation partners appropriate to local contexts, and used effectively to regularly report on programmatic coverage?
- What structural factors facilitate or inhibit the availability, accessibility and utility of intervention services?

Country selection

Countries were selected by the Global Fund, based on the following criteria, a) inclusion of PWID program in the Global Fund grant in country, b) on the list of countries where the Global Fund requires to report on its key performance indicator for key populations, c) regional representation. As a result, 46 countries were selected for this assessment (Table 1). Out of 46 countries, 15 (Table 2) were further selected to conduct in-country visits, based on maturity of grant implementation, lack of evaluations of PWID programs within the previous 3 years, a mix of high and low HIV prevalence countries, and a mix of regions

Desk reviews

The assessment began with 46 country-specific desk reviews to provide findings related to the design, implementation and monitoring

Table 1

Full list of countries with PWID identified as a key population.

Afghanistan*	Indonesia*	Pakistan*
Armenia*	Iran	Paraguay
Azerbaijan	Jordan	Philippines
Bangladesh	Kazakhstan	Seychelles
Belarus*	Kenya*	Sierra Leone*
Benin	Kosovo*	South Africa*
Bosnia	Kyrgyz Republic*	Sri Lanka
Burundi	Lebanon	Tajikistan
Cambodia	Madagascar	Tanzania
Cameroon	Mauritius	Thailand
Cape Verde	Moldova	Togo
Côte d'Ivoire	Mongolia	Tunisia*
Egypt	Morocco*	Ukraine*
Georgia*	Nepal*	Uzbekistan*
Ghana	Nigeria	Viet Nam
India		

* represents countries visited for in-country assessment.

Table 2

Countries where PWID service packages were assessed in country (with sites identified).

Country	Sites Selected
Afghanistan	Kabul
Armenia	Yerevan & Vanadzor
Belarus	Minsk & Vitebsk
Georgia	Tbilisi & Batumi
Kenya	Nairobi & Mombasa
Kosovo	Pristina & Prizren
Kyrgyz Republic	Bishkek & Osh
Moldova	Chisinau & Balti
Morocco	Rabat, Casablanca, Marrakech, Tangiers, & Tetouan
Nepal	Kathmandu & Bhaktapur
Pakistan	Islamabad, Rawalpindi, & Peshawar
Sierra Leone	Freetown, Makeni, Lakka
Tunisia	Tunis & Sfax
Ukraine	Kiev, Lvov, Odessa, & Dnepr
Uzbekistan	Tashkent city & Bukhara

of HIV service packages for PWID.

The main data sources provided for the desk reviews were: Global Fund grant Performance Frameworks; Integrated Bio-behavioral Surveillance Survey Reports (IBBS Reports); National HIV Strategic Plans; National Monitoring and Evaluation (M&E) Plans; Global Fund Funding Requests or Concept Notes; UNAIDS Global AIDS Monitoring (GAM) Reports; Global Fund grant Progress Update data; and Global Fund Programmatic Spot Checks and Reviews. The date ranges for each country's dataset varied based on availability. Only data from the five years preceding the assessment were reviewed.

Desk reviews followed a protocol which allowed for the compilation of a database of key aspects of the service package design. These data included, a) country statistics summary; b) summary of KP and what is known about them, including population size estimates (PSE), HIV prevalence, behavior and social data; c) documentation and endorsement of packages for PWID, in National Strategy, National Action plan, GAM Report or the Global Fund proposal; d) comparison of defined package with the WHO Consolidated Guidelines, with references to age, gender and particular sub-populations; e) ways the designed package is being implemented and by whom; f) the official coverage figure and how this was calculated. In addition, where possible, additional questions were asked about monitoring of PWID service package coverage and financing of delivery of these packages.

In-country visits

In-country visits were carried out to verify and expand upon data collected during the initial desk review related to PWID service packages. In most cases, one international consultant and one local

consultant carried out each in-country visit. In addition to the questions in the desk review, site visits assessed, participation of PWID networks/groups in the design of service packages, variations in implementation of the packages between sites and by different implementers, the quality of the services and products provided as stated by PWID, and methods are used to monitor coverage with the service packages.

Methods used in site visits included key informant interviews with Ministry of Health staff and staff of Global Fund Principal Recipients and Sub-Recipients as well as other relevant national stakeholders such as staff of UNAIDS. They also included visits to organizations that implemented PWID packages, together with observations of their work and group interviews with their staff; and focus groups with clients of PWID services.

Focus group participants were recruited from clients of harm reduction programs on a voluntary basis, with generally 8–10 participants in each focus group and 2–3 focus groups per country. Notes were taken by hand with no audio or video recordings and findings were triangulated with data from key informant interviews and coverage data to determine gaps for design and implementation, and barriers to access to services.

Monitoring systems were assessed in relation to unique identification codes (UIC), which here refers to a system, usually developed at the national or programmatic level, to provide an anonymous way of tracking service use by individuals. It usually does not incorporate national identification or health insurance or other formal numbers and is usually either alphanumeric (comprising several characters) or biometric (delinked fingerprints, iris scans). Assessments were against a four-point scale: The lowest rating was ‘no data or no evidence of UIC’. Second was ‘monitoring contacts’ if the system counts contacts and does not allow for de-duplicated reporting. Third, ‘partially UIC’ described partial UIC systems, which disallow de-duplicated reporting, including scenarios where UIC are used in some regions of the country or different UIC are used in the country but not harmonized. The highest level, ‘national UIC’ was for countries using the UIC nationally, allowing de-duplicated reporting and including the scenario where different UICs are used but harmonized.

Analysis

Design of national KP service packages in formal documents was compared with those in global guidance documents (Fig. 1). Coverage levels (Table 3) were collected from the key documents described above and, where possible, triangulated to determine an acceptable estimate of coverage. The coverage figures cited are national, using either an estimate of PWID regularly reached with a defined package of services or actually reached, as shown by programmatic monitoring, as a percentage of the total estimated population of PWID in the country. Qualitative data in the form of notes from key informants’ interviews and focus group discussions were transcribed, coded and analyzed for emerging themes organized by design, implementation and monitoring.

The assessment protocol was reviewed by the Global Fund. Desk reviews are secondary analysis of existing data or documents. Focus groups are clients of the Global Fund supported programs. Prior to the interviews or discussions, oral consent was obtained from key

Table 3
National coverage with defined package of services.

Country	National Coverage
Afghanistan	27.6%
Armenia	27.6%
Belarus	56.8%
Georgia	61%
Kenya	106%*
Kosovo	57.4%
Kyrgyz Republic	58.7%
Madagascar	101.3%*
Moldova	50.1%
Morocco	33%
Nepal	67.8%
Pakistan	21.2%
Sierra Leone	28%
Tunisia	29.3%
Ukraine	65%
Uzbekistan	63%

* Figures above 100% are the result of either or both an underestimate of the PWID population size or a lack of de-duplication of coverage data.

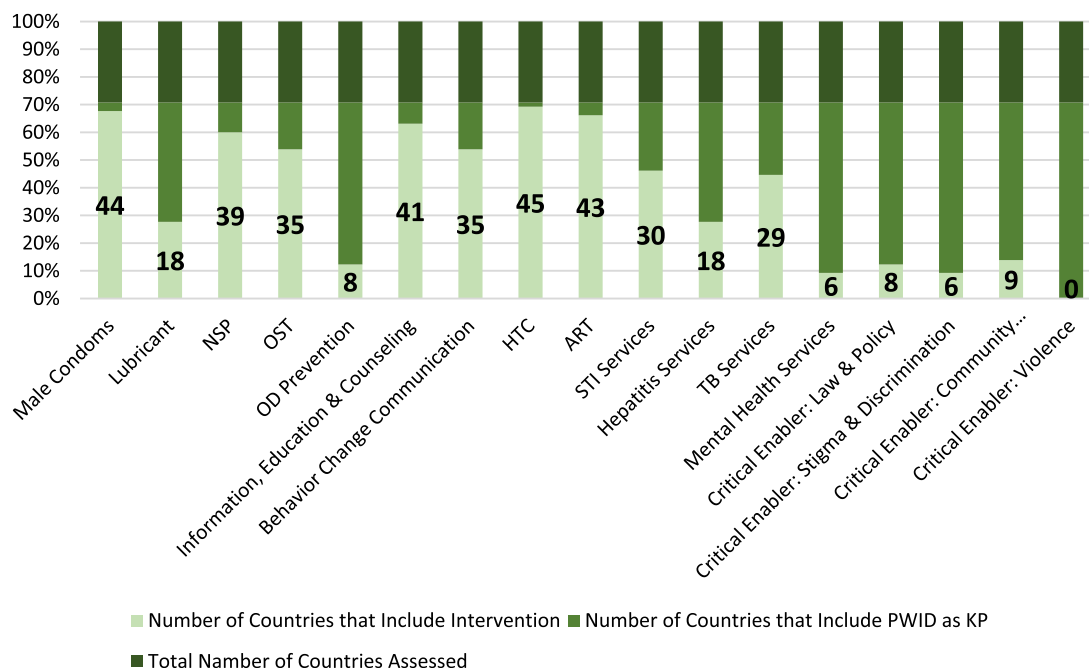


Fig. 1. Elements included in national PWID service package designs in 46 countries.

informants and focus groups. No personal information was collected. The Global Fund explicitly stated that ethics review was not needed for these assessments.

Results

Overall, countries in most regions identified PWID as a key population and had specific service packages set out for this population. All 46 countries listed PWID as a KP in their national HIV strategic documents. These documents vary by names in different countries and were sometimes referred to in relation to other diseases or conditions such as infectious diseases or sexually transmitted infections. In this paper, 'national HIV strategies and plans' refers to either the National HIV Strategic Plan (NSP), the National HIV Strategy (NHS), or their equivalent in that country.

Strategic information on PWID

In the Eastern Europe and Central Asia (EECA) and Asia-Pacific (AP) regions, many countries have been estimating PWID population size for a decade or more and there was general agreement on PSE by in-country stakeholders. In many African countries and the few LAC countries, however, where PWID PSE were available, the numbers were often very small, and the PSE were based on anecdotes or small studies. Estimates of PWID ranged from 22 in Uganda and 53 in Timor-Leste to 200,000 in Iran and 346,900 in Ukraine. In most countries there was no disaggregation of PWID numbers by sex.

No PWID PSE were available for several of the countries in Eastern and Southern Africa (ESA) which identified PWID as a KP, including Angola, Malawi, Botswana and Lesotho. In West and Central Africa (WCA), PWID were sometimes captured in a broader group - people who use drugs (PWUD). Very limited data were found in the countries assessed in LAC about the PWID population in that region. Population sizes for PWID have not been estimated in most countries in LAC due to the widespread belief that injection of cocaine and heroin is uncommon in the region.

HIV prevalence among PWID in the assessed countries varied from 0.2–0.3% in Lebanon and in Bosnia and Herzegovina, and 2% in Benin, up to 25% in Cambodia, 25% in Belarus and 44% in Mauritius.

The maturity of PWID programming also varied significantly across the countries assessed. A robust history of harm reduction and other PWID-focused programming was found in EECA and some countries in Asia and the Pacific (AP), and emerging programs in most of the African countries assessed, with the exceptions of Kenya, Morocco and Mauritius.

Design

Design of service packages varied considerably between countries. In many, the design matched the WHO Comprehensive Package, with some deficiencies. In others, however, even standard harm reduction elements were missing. For example, only 39 of the 46 countries (85%) included needle-syringe exchange programs (NSEP) and 35 of 46 (76%) included opioid agonist therapy (OAT). Most OAT programs remain focused on methadone, with only a few countries making buprenorphine available. Eight (17%) of 46 countries included overdose management in their package design.

While 43 (94%) out of the 46 countries had specifically outlined the distribution of condoms for PWID populations in their national plans and strategies, only 18 countries (39%) specified the inclusion of lubricants for PWID. Exceptions to this were the assessed countries in WCA, which generally outlined lubricant distribution with condom provision. Two countries in ESA (Mauritius and Uganda) were the only examples globally where female condoms were included in the PWID packages.

While most countries offered behavioral interventions of some kind,

reference documents typically provided little detail on what was involved. Of the 46 countries, 45 (99%) offered HIV testing and counseling (HTC), but only three (7%) specified the availability of community-based testing and none specified self-testing. Antiretroviral therapy (ART) access was specifically included in 42 (91%) country packages of services.

Only 29 countries (63%) included diagnosis and treatment of tuberculosis (TB) co-infection as part of the PWID package. Hepatitis comorbidity management was only included in 18 countries (39%). While sexually transmitted infection (STI) services were relatively consistently included in PWID service packages, other reproductive health services were not.

As shown in Fig. 1, only a minority of countries included critical enabler activities, such as law reform and addressing stigma and discrimination, in their PWID service package designs. In many of the countries, general critical enabler activities were listed. The role and level of involvement of PWID organizations and networks in designing service packages also varied across countries.

Implementation

Average coverage across the 46 countries studied was 40% for a defined prevention package in countries for which coverage figures could be derived. As data, especially the implementation of service packages, from desk review countries could not be validated by in-country visits, this section and the following section refer only to the 15 countries that received both a desk review and an in-country visit.

In most of these 15 countries, there were disconnects between the packages of services as outlined in national strategic documents and what appeared on the ground in terms of accessible services. There were also significant gaps between the stated packages and available services for some important sub-populations, specifically younger PWID (particularly those under 18 years of age), and women who inject drugs.

While almost all of the 15 countries had some commitment to harm reduction principles and services in their national reference documents, the coverage of these services among PWID was generally low. The main barriers to service access, as described by PWID in focus groups, were criminalization, stigma, discrimination and violence; crackdowns associated with the war on drugs; compulsory registration of drug user status and forced rehabilitation systems. Support for harm reduction remains highly politicized in many countries, with reduction of services common under conservative governments, and most PWID interviewed worried more about treatment by police than their health.

"Police are the biggest problem, not AIDS." (PWID FGD participant, Pakistan)

Coverage rates with a defined package of prevention services varied from high rates (90% in Kazakhstan, 84% in Mauritius, and 68% in Nepal), to lower rates (21% in Pakistan and 28% in Afghanistan and Armenia). The average across 13 countries was 46%: figures above 100% were excluded from this averaging exercise. Coverage rates are listed in Table 3.

Outreach programs for PWID in many of the countries visited were facing funding reductions and an increased focus on the 'test and refer' strategy. Outreach staff in key informant interviews suggested that the low quality of outreach services might be related to the need for each outreach worker to reach high numbers of clients, such as more than 200 clients per month in Armenia; more than 190 per month in Moldova; 60 per month in Ukraine. The average number of needles and syringes routinely provided to clients also varied. No countries reached the 300 needles per PWID per year standard recommended by WHO technical guidance (WHO, 2016b), with only Afghanistan (157) and Ukraine (119) providing substantial numbers per injector per year. Focus group discussions revealed that many clients were satisfied with injection equipment provided:

“The quality of needles and syringes has improved in recent years.” (PWID FGD participant, Belarus).

Opioid agonist therapy coverage was low in most countries where it was available. It was highest in Georgia (32%) and Morocco (29%) and relatively low in other countries (9% in Kenya; 3% in Ukraine; 6% in Kyrgyz Republic; and, 4% in Nepal). Reasons provided by key informants and by PWID for these low figures included restrictive hours and policies, low budgets, low geographic coverage, and stigma and discrimination by service providers.

There were very limited data on linkage of PWID with HIV to clinical care and ART. Some countries still had services that did not consider PWID with HIV as good candidates for ART (Tunisia). Gender issues were also raised in focus groups:

“My friend died of AIDS because her husband wouldn’t let her get help.” (PWID FGD participant, Georgia).

The Kyrgyz Republic reported that 37% of PWID diagnosed with HIV were on ART and Belarus reported 30%. Hepatitis C virus (HCV) testing was increasingly available and accessible in many countries, revealing very high prevalence in most PWID populations. Inexpensive access to HCV treatment was under discussion in many countries.

Despite the lack of explicit inclusion of structural interventions to address critical enablers in package designs, in most countries there was evidence of implementation of some relevant activities. Overall, some positive changes were reported by PWID (through focus groups) in most of the assessed countries but most PWID in most countries continued to experience stigma and discrimination, violence (including gender-based violence), and other human rights barriers to service access. Few initiatives to reduce human rights-related barriers to services had been taken to scale in the countries assessed.

Monitoring

The process of monitoring the implementation of packages of services against their design is multi-faceted. Eight countries (Afghanistan, Armenia, Belarus, Kenya, Kyrgyz Republic, Madagascar, Sierra Leone and Tunisia) were rated as ‘partially UIC’ while 7 countries (Georgia, Kosovo, Moldova, Morocco, Nepal, Pakistan, Ukraine and Uzbekistan) rated as ‘nationally UIC’.

Whether the country had a national UIC in place or not, the most common method for collecting data on clients was the use of a handwritten form, many of which contained a long list of questions about sexual and drug use behavior. Data was then entered into Excel databases, often designed separately by each NGO. Data entry, cleaning and validation were very onerous and at some NGOs, constituted the full workload of an M&E Officer. There were also examples of efficient methods of collecting and reporting data. Alliance for Public Health in Ukraine used an open access software (SyrEx) for monitoring and recording information on clients reached and services provided in community-based HIV prevention programs. The software allows project implementation partners to uniquely register project clients with an agreed-upon UIC, and to record commodities and services provided, as well as other key deliverables such as trainings. Several other countries in the EECA and Asia also use SyrEx or similar systems for monitoring PWID prevention activities.

In Nepal, a “smart card” is issued to PWID clients:

“You have to remember that these people are hiding because they feel left out of society. This card provides a sense of belonging and inclusion which all drug users want.” (PWID peer educator FGD participant, Nepal)

Many countries continued to record the full names and addresses of PWID at the service delivery level – for services provided by both NGOs and governmental agencies. This occurred even alongside a nationally used UIC. In many countries, the data gathered included name, address,

national identification number, telephone number, and sometimes other identifying information. The security of data storage was also assessed. Mostly, data are collected on handwritten notes and forms, which were either entered as separate sheets into binders or entered into a registration book.

For many years, there has been confusion at the implementer level between reach (all clients met) and coverage (all clients receiving a specified set of services) (Sharma, Burrows, & Bluthenthal, 2008). Some countries have developed ways to determine whether a client has received a defined package of services. For example, in Kosovo, PWID were considered ‘reached’ each time they receive their defined package of services, and they were considered ‘covered’ if they receive their defined package of services four times over a six-month period, with the exception of HTC, which is once every six months.

The major gap in every country was between prevention and treatment databases. For almost all countries assessed, there were no disaggregated data for PWID on ART, retention statistics nor viral load suppression results. Georgia appeared to be the closest to resolving the problem of combining UIC and patient databases.

Discussion

In this assessment, it was found that not all countries where evidence was readily available about drug injecting are prioritizing PWID as a key population. These results broadly matched those of other studies which have examined service packages for PWID. The Global State of Harm Reduction 2019 Update (Harm Reduction International, 2019) found that the spread of harm reduction services had stalled globally since 2012. It found that, since 2018, the total number of countries implementing needle and syringe programmes (NSP) increased by just one, from 86 to 87, while no new countries began implementing opioid agonist therapy (OAT) programmes in 2019. A review of the design of KP service packages in Africa by WHO (WHO, 2018) found that 16 of the 45 countries whose strategic plans were reviewed included harm reduction PWID service packages but other countries with evidence of injecting drug use had not identified PWID as a key population nor developed service packages for this population.

Few publications have considered the reasons for this lack of expansion of effective harm reduction methods, with most concentrating on recording the lack of progress (Degenhardt et al., 2017; HRI, 2016, 2018). UNAIDS (2020) stated that criminalization of drug use was a major barrier, and that stigma and discrimination towards PWID remained strong disincentives to access health services.

Strategic information on PWID is improving but many gaps and issues remain. Two countries claimed coverage rates with harm reduction programs over 100%, indicating either a mistake in the estimated size of the PWID population or ongoing problems in deduplicating clients.

In those countries where PWID were identified as a key population, the design of PWID service packages generally matched the WHO Comprehensive Package. However, the extremely low rate of overdose education and naloxone distribution among the countries (8%) was very concerning as overdose was the primary cause of mortality among PWID in most countries (Mathers et al., 2013). Given the relationship between drug injecting and vulnerability to hepatitis C and TB, as well as the significant TB and hepatitis C epidemics in many of the assessed countries, it was particularly concerning that hepatitis co-morbidity management was only included in 18 countries (39%) and only 29 countries (63%) included diagnosis and treatment of tuberculosis co-infection.

While sexually transmitted infection (STI) services were relatively consistently included in PWID service packages, other reproductive health services were not. This was perhaps reflective of the lack of consideration for gender-sensitive services approaches. More encouragingly, two countries in ESA (Mauritius and Uganda) were the only examples globally where female condoms were included in the PWID package – a rare acknowledgement of the specific needs among women who inject drugs.

PWID service packages generally required updating to ensure overdose management with naloxone becomes standard practice (as called for in the 2016 update to the *Comprehensive Guidelines*). Similarly, community-based testing and self-testing needed to be more specifically included in package designs. There was little evidence of effective feedback loops that involve PWID and their networks in improving the range of services set out in national and subnational policy and strategy documents. The shrinking of funding and range of services being experienced by PWID community organizations also impacted on these organizations' ability to advocate for additional service elements.

Many design documents served only as a list of service elements. Few countries have set out the frequency of service delivery that would constitute coverage. Conversely, in some countries, specifying very narrowly the number of prevention products to be distributed to each PWID each month led to insufficient availability of needles and syringes to meet demand and a lack of flexibility in service delivery.

In most assessed countries, there were significant gaps between what countries committed to in the design of their service packages and what they provide on the ground. So, whilst the design might have stated that these service elements, set out in the *WHO Consolidated Guidelines*, and of the implementation tools for PWID that have flowed from them (*WHO 2016a*), would be made available, there were significant gaps in reach, coverage and quality of many elements. Whilst there was guidance available for countries about service planning and 'architecture', most countries lacked a participatory mechanism for planning and regularly reviewing the range of elements and the mix of service delivery models to be provided under the package.

Whilst the recent sharper focus of funding for PWID outreach services on 'test and refer' was justified in terms of low achievement of the 'first 90' (PWID who know their HIV status), this had led to significant gaps in the availability and quality of other service elements, particularly linkage to and retention on ART, information and support for PWID living with HIV, and other health, welfare and advocacy services for PWID.

A key finding on monitoring, was that most PWID service delivery agencies were using time consuming and overly complex pen and paper reporting systems that distracted staff and volunteers from the peer support and service delivery that they were providing. Whilst National UIC systems were in use in many countries, some countries with well-designed and executed PWID programs still lacked a UIC, and therefore any ability to properly track volume and patterns of services use by individuals.

Extraneous and identifying data was being simultaneously collected and stored, defeating the purpose of the UIC. The security of data was also a significant problem, with clients' names and contact numbers not being protected. Poorly developed and out-of-date PSE also made it difficult in some countries to accurately track reach of services.

The consistent absence of data on the health outcomes for PWID living with HIV was a particular problem, as it resulted in a lack of information to drive service improvement and change, and to argue for an appropriate allocation of funds to PWID programmes.

The lack of sensitivity to sex and gender across the full range of population size estimation and epidemiological monitoring, design, implementation, and service monitoring related to PWID in most assessed countries was also an important gap. Women were often inadequately included or altogether excluded from PSE and then further excluded from package design and delivery because they remained an invisible population. Where women who inject drugs did access services, their service use patterns were rarely captured because data were not gender-disaggregated. Further, difficulties in identifying women to participate in PWID focus groups pointed to both heavy societal stigma and lack of engagement in services, which appeared in general to be not sensitized to their gender-specific needs

Limitations

There is the possibility of bias in the results due to the processes used to select countries. Country selection criteria emphasized Global Fund preferences thus results may not be generalizable. It is also important to note here that in the 'desk review only' countries APMG Health did not conduct an in-country visit to collect data and information that could verify information provided. Also, desk reviewers were limited to those available data and documents in the fourth quarter of 2017. Also, due to time restrictions of in-country visits, only two to three sites were selected for the in-country visit. Because of this, in-country visits may not be nationally representative, and reports only speak to data available in the regions, districts, and cities that were visited or within other reports reviewed. Also due to time restrictions, only two out of the five key populations were assessed during in-country data collection in most countries. During the in-country data collection, focus group discussion participants were identified by services that were being visited. Therefore, respondents may have been over-representative of PWID already connected to services and not representative of PWID more broadly. Although the list of documents used for conducting these assessments has been considerably expanded for those countries selected for an in-country visit, extrapolation of these results should be treated with caution.

Conclusion

The gains that have been made in establishing evidence-based PWID services across a range of countries and contexts need to be built upon if PWID is to be a population 'not left behind' in the push to eliminate HIV, and hepatitis. Although there are examples of client-based, high-quality services in place in challenging environments, few countries are reaching coverage levels across the full range of PWID HIV prevention, testing and care services necessary. Many governments will need ongoing assistance to close the gap between what is set out in national commitments and what is actually available in reality. Transition from donor to domestic funding presents an additional complication, as many governments have relied on donors to fund what they consider to be this more controversial element of their HIV response. Improving monitoring and evaluation systems so that the impact of investing in quality services for PWID can be clearly demonstrated to governments and citizens will assist in this transition.

Acknowledgements

Authors would like to thank WHO, UNAIDS and USAID/LINKAGES project for their technical involvement, the Global Fund country teams for relevant countries for their coordination with in-country partners.

References

- Burrows, D., McCallum, L., Parsons, D., & Falkenberry, H. (2019a). *Global summary of findings of an assessment of HIV service packages for key populations in six regions*. Washington, DC: APMG Health. April 2019.
- Burrows, D., Parsons, D., Falkenberry, H., & McCallum, L. (2019b). *Regional summary of findings of an assessment of HIV service packages for key populations in selected countries in Latin America & Caribbean*. Washington, DC: APMG Health. March 2019.
- Burrows, D., Parsons, D., McCallum, L., & Falkenberry, H. (2019c). *Regional summary of findings of an assessment of HIV service packages for key populations in selected countries in East and Southern Africa*. Washington, DC: APMG Health. March 2019.
- Degenhardt, L., Peacock, A., Colledge, S., Leung, J., Grebely, J., Vickerman, P., et al. (2017). Global prevalence of injecting drug use and sociodemographic characteristics and prevalence of HIV, HBV, and HCV in people who inject drugs: A multistage systematic review. *The Lancet Global Health*, 5(12), E1192–E1207.
- Sharma, M., Burrows, D., & Bluthenthal, R. (2008). Improving coverage and scale-up of HIV prevention, treatment and care for injecting drug users: Moving the agenda forward. *Int J Drug Policy*, 19(Suppl 1), 1–4. <https://doi.org/10.1016/j.drugpo.2007.12.008>, 2008.
- Falkenberry, H., Parsons, D., Burrows, D., & McCallum, L. (2019). *Regional summary of findings of an assessment of HIV service packages for key populations in selected countries in Middle East and North Africa*. March 2019. APMG Health, Washington, DC.

- Harm Reduction International Global State of Harm Reduction 2016 Update. London. (2016).
- Harm Reduction International Global State of Harm Reduction 2018 Update. London. (2018).
- Harm Reduction International Global State of Harm Reduction 2019 Update. London. (2019).
- Mathers, B. M., Degenhardt, L., Bucello, C., Lemon, J., Wiessing, L., & Hickman, M. (2013). Mortality among people who inject drugs: A systematic review and meta-analysis. *Bulletin of the World Health Organization*, 91(2), 102–123.
- McCallum, L., Perez, S., Burrows, D., Parsons, D., & Falkenberg, H. (2019). *Regional summary of findings of an assessment of HIV service packages for key populations in selected countries in Asia and the Pacific*. Washington, DC: APMG Health. March 2019.
- Parsons, D., Burrows, D., Falkenberg, H., & McCallum, L. (2019). *Regional summary of findings of an assessment of HIV service packages for key populations in selected countries in Eastern Europe and Central Asia*. Washington, DC: APMG Health. March 2019.
- Perez, S., Burrows, D., Parsons, D., McCallum, L., & Falkenberg, H. (2019). *Regional summary of findings of an assessment of HIV service packages for key populations in selected countries in West and Central Africa*. Washington, DC: APMG Health. March 2019.
- UNAIDS (2019a) Communities at the Centre Geneva https://www.unaids.org/en/20190716_GR2019_communities.
- UNAIDS (2020). Global AIDS Update 2020— Seizing the moment — Tackling entrenched inequalities to end epidemics. Geneva.
- UNDP/ IRGT/ UNFPA/ UCSF Center of Excellence for Transgender Health/ Johns Hopkins Bloomberg School of Public Health/ WHO/ UNAIDS/ USAID. (2016). Implementing comprehensive HIV and STI programmes with transgender people: Practical guidance for collaborative interventions. New York.
- UNFPA/Global Forum on MSM & HIV/ UNDP/ WHO/ USAID/ World Bank. (2015). Implementing comprehensive HIV and STI programmes with men who have sex with men: Practical guidance for collaborative interventions. New York.
- UNODC/ ILO/ UNDP/ WHO/ UNAIDS. (2013). HIV prevention, treatment and care in prisons and other closed settings: A comprehensive package of interventions. Vienna.
- UNODC/ UNAIDS/ UNDP/ United Nations Population Fund/ WHO/ USAID. (2017). Implementing comprehensive HIV and HCV programmes with people who inject drugs: Practical guidance for collaborative interventions. Vienna.
- WHO. (2016.). Global Health Sector Strategy on Viral Hepatitis 2016-2021: Towards ending viral hepatitis. Geneva.
- WHO. (2016.). Consolidated Guidelines on HIV Prevention, Diagnosis, Treatment and Care for Key Populations. Geneva.
- WHO. (2018). Focus on Key Populations in National HIV Strategic Plans in the African Region. Geneva.
- WHO/ UNFPA/ UNAIDS/ Global Network of Sex Work Projects/ World Bank. (2013). Implementing comprehensive HIV/STI programmes with sex workers: Practical approaches from collaborative interventions. Geneva.