

Review

What has been achieved in HIV prevention, treatment and care for people who inject drugs, 2010–2012? A review of the six highest burden countries



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ARTICLE INFO

Article history:

Received 26 January 2013

Received in revised form 19 August 2013

Accepted 23 August 2013

Keywords:

Injecting drug use, HIV, Needle and syringe programme
Opioid substitution therapy, Antiretroviral therapy, Prevention

ABSTRACT

Objective: In 2010 the international HIV/AIDS community called on countries to take action to prevent HIV transmission among people who inject drugs (PWID). To set a baseline we proposed an “accountability matrix”, focusing upon six countries accounting for half of the global population of PWID: China, Malaysia, Russia, Ukraine, Vietnam and the USA. Two years on, we review progress.

Design: We searched peer-reviewed literature, conducted online searches, and contacted experts for ‘grey’ literature. We limited searches to documents published since December 2009 and used decision rules endorsed in earlier reviews.

Results: Policy shifts are increasing coverage of key interventions for PWID in China, Malaysia, Vietnam and Ukraine. Increases in PWID receiving antiretroviral treatment (ART) and opioid substitution treatment (OST) in both Vietnam and China, and a shift in Malaysia from a punitive law enforcement approach to evidence-based treatment are promising developments. The USA and Russia have had no advances on PWID access to needle and syringe programmes (NSP), OST or ART. There have also been policy setbacks in these countries, with Russia reaffirming its stance against OST and closing down access to information on methadone, and the USA reinstating its Congressional ban on Federal funding for NSPs.

Conclusions: Prevention of HIV infection and access to HIV treatment for PWID is possible. Whether countries with concentrated epidemics among PWID will meet goals of achieving universal access and eliminating new HIV infections remains unknown. As long as law enforcement responses counter public health responses, health-seeking behaviour and health service delivery will be limited.

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Introduction

In *The Lancet's* 2010 issue ‘HIV in people who use drugs’, there was a call for urgent action to prevent HIV transmission among people who inject drugs (PWID), and to ensure essential treatment and care be provided for drug dependence and HIV (Beyrer et al., 2010). To set a baseline for assessing progress, we proposed an “accountability matrix” to measure the response to HIV among PWID (Beyrer et al., 2010) in six countries that account for half

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of the global population of PWID (B. Mathers et al., 2008): China, Malaysia, Russia, Ukraine, Vietnam and the USA. It used core indicators, compiled through systematic reviews (B. Mathers et al., 2008; B. M. Mathers et al., 2010), of the epidemiology of injecting drug use (IDU) and of HIV among PWID, and coverage of PWID with three interventions with evidence of effectiveness (Degenhardt et al., 2010; MacArthur et al., 2012; B. M. Mathers et al., 2010; Ni, Fu, Chen, Hu, & Wheeler, 2012; Wolfe, Carrieri, & Shepard, 2010) and cost-effectiveness (Ni et al., 2012; Yen et al., 2012) in preventing and treating HIV: opioid substitution therapy (OST), antiretroviral therapy (ART) and needle and syringe programmes (NSP). We also called for an end to forced labour camps and other forms of detention as a response to drug use which have no evidence of efficacy in reducing HIV risks (Beyrer et al., 2010; Jürgens, Csete, Amon, Baral, & Beyrer, 2010; Wolfe et al., 2010).

Recent commitments aiming for “zero new HIV infections among people who use drugs” (UNAIDS, 2011, <http://www.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2010/JC2034.UNAIDS.Strategy.en.pdf>, accessed on February 15th 2012) and “an AIDS-free generation” (Obama, 2011) demand that progress accelerates. There have been strong calls from international and supranational bodies urging action in this sphere, including the Global Commission on drug policy and the Commission on HIV and the law. But will that happen? In light of the recently held XIX International AIDS Conference in Washington, DC, we consider progress of these six countries. In this paper we update the accountability matrix for the six countries.

Method

To update epidemiological data and indicators estimating intervention coverage, we followed the search strategy used in the 2010 review of epidemiology coverage indicators undertaken by Mathers et al. (B. Mathers et al., 2008; B. M. Mathers et al., 2010). We searched for peer-reviewed and grey literature published since December 2009. Data were selected, and estimates calculated, as per decision rules used in previous reviews. This process is summarised in Panel 1 below (see also web appendix 1, 2 and 3). We contacted, via email, key experts and organisations to request relevant material.

Panel 1: Literature search and calculation of estimates

We searched the peer-reviewed literature databases PubMed and BioMed Central using search terms listed in web appendix 1. Articles in any language were included. We selected articles that were published since December 2009; no other restrictions were applied. In November and December 2011 we undertook web searches to obtain grey literature. Websites previously identified as sources of information related to HIV and injecting drug use were searched, these included, but were not limited to, websites of national ministries of health, national AIDS committees, UN agencies and relevant NGOs. Websites were searched for keywords using by use of their own search functions, if these existed, or with Google advanced search. Websites in languages other than English were searched and read by means of Google translate; non-English documents were also retrieved. Websites searched and strategies used to search each site are detailed in web appendix 2.

Documents retrieved were reviewed by a team of six researchers and data extracted following decision rules used in previous reviews (B. Mathers et al., 2008; B. M. Mathers et al., 2010) and entered into a Microsoft Excel database. This database was reviewed by BM and LD and data selected to calculate coverage estimates. More recent data were taken in preference to earlier data; national data were taken in preference to sub-national data. Data selected for inclusion in

estimates were checked in source documents by BM and LD. IDU and HIV prevalence estimates, and estimates for intervention coverage indicators were calculated by BM and LD; data were adjusted to allow for comparison between countries against common parameters. Coverage estimates were derived using the most recently available estimates of IDU and HIV prevalence. If service provision data referred to a period of less than or more than 12 months, a constant rate of access or distribution was assumed, and estimates made for 12 months accordingly. Since the number of opioid dependent IDUs was not available for each country the ratio of the number of people receiving OST per 100 IDUs were determined, irrespective of the type of substance injected. Similarly, the ratio of the number of IDUs receiving ARV per 100 HIV positive IDUs was calculated. Data selected and calculations made are detailed for each country in web appendices 3 and 4.

Results

The systematic search is summarised in Fig. 1.

Changes in epidemiology

New eligible estimates of the prevalence of injecting drug use were located for Viet Nam (Khuat, Jardine, Moore, Bui, & Crofts, 2012; Ministry of Public Security, 2011) and Ukraine only (Berleva et al., 2010). In the case of Ukraine the total number of PWID was estimated to be lower than earlier estimates, possibly due to different methodology used (Table 1; see web appendix 4 for full details of all data for each country).

New estimates of HIV prevalence among PWID were obtained for Malaysia, China, Ukraine, Viet Nam and the USA (Table 1). In Malaysia, new data suggested a significant increase in prevalence (HIV/STI SECTION, 2012). New estimates in China (10.1%, 6.1–16.4%) (Ministry of Health of the People's Republic of China, UNAIDS, and WHO, 2010), Vietnam (28.5%, 0.9–56.0%) (Nguyen & Nadol, 2011), Ukraine (21.5%, 2.5–43.8%) (Ministry of Health of Ukraine, 2012b) and USA 9%, (8–11%) (Centers for Disease Control

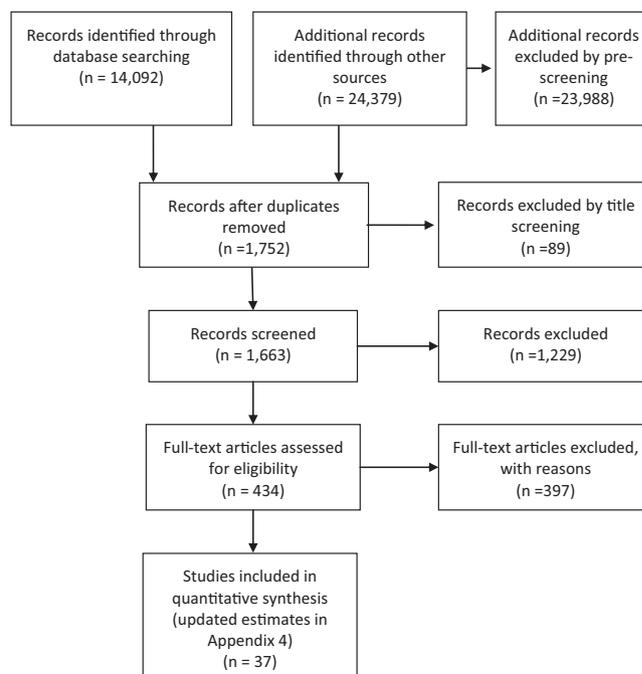


Fig. 1. Results of systematic review.

Table 1
Data on the number of people who inject drugs, and of HIV prevalence among PWID.

	Estimated IDU prevalence		Estimated number of PWID		Prevalence of HIV among PWID	
	Old	New	Old	New	Old	New
China	0.25% (0.19–0.31)	–	2,350,000 ^h (1,800,000–2,900,000)	–	12.3% (8.0–19.2) ^h	10.1% (6.1–16.4) ^d
Malaysia	1.33% (1.11–1.56)	–	205,000 ^k (170,000–240,000)	–	10.3% ^k	22.1% ^d
Russia	1.78% (1.31–2.33)	–	1,825,000 ^f	–	37.2% (0.3–74.0) ^l	–
Ukraine	1.16% (1.00–1.31) ^g	0.90% (0.71–1.12) ^{**d}	325,000–425,000 ^g	290,000 (230,000–360,000) ^{**d}	32% ^e	21.5% (2.5–43.8) ^b
Viet Nam	0.25% (0.18–0.32)	0.22 ^b	135,000 ^h	134,500 ^b	33.9% (1.9–65.8) ^g	28.5% (0.9–56.0) ^d
USA	0.96% (0.67–1.34)	–	1,857,000 ^k	–	15.6 (8.7–22.4) ^l	9% (8–11) ^d

^a2012; ^b2011; ^c2010; ^d2009; ^e2008; ^f2007; ^g2006; ^h2005; ⁱ2004; ^j2003; ^k2002.

^{**} Different methodology used for the new estimate compared to the earlier estimate.

and Prevention, 2012) suggested a decrease in HIV prevalence over time. Newer HIV data were typically obtained via different methods from the older data (B. Mathers et al., 2008), meaning the estimates were not strictly comparable.

Coverage of PWID with NSP, OST and ART

China

New data on coverage of NSP in China (Table 2), suggested a decrease in the volume of injecting equipment distributed (China CDC, 2011). Available data on OST provision in China suggest a near 30% increase in numbers of OST recipients between 2009 and 2011, and expansion of the number of sites providing OST (Table 3) (China CDC, 2011). Access to methadone maintenance treatment is voluntary but eligible individuals must be registered and approved by the police. Although police referred approximately 10% of patients currently receiving OST, arrests in and around services providing OST are not uncommon and contribute to high rates of OST patient dropout.

Methadone dosages for maintenance remain too low to be effective with only a modest recent increase in mean daily methadone dose (from 47.2 mg in 2004 to 58.6 mg in 2011) (Li et al., 2013). It is worth noting that in a study based on 306 786 individuals enrolled in China's MMT program from 24 March 2004 to 30 April 2011, average methadone doses to >75 mg/day has been found to be independently associated with a 24% reduction in mortality (Liu et al., 2013).

The number of PWID receiving ART increased significantly, however overall it is estimated that only 5 in every 100 HIV-positive PWID might be receiving ART (China CDC, 2011).

Malaysia

The number of OST provision sites has also expanded substantially (National Anti-Drug Agency, 2011) driven by a government shift from compulsory detention to a treatment focus (Table 3; see below). Voluntary drug treatment services are now provided at 36 drop-in centres operated by the National Anti-Drug Agency (NADA) throughout the country, with OST delivered to 1473 clients (National Anti-Drug Agency, 2011). By 2010 it was estimated that 13,471 clients had received OST at public clinics, with a further 20,000 in private treatment (WHO & Ministry of Health Malaysia, 2011). Reports suggest an estimated 2500 PWID living with HIV received ART in 2009 (WHO & Ministry of Health Malaysia, 2011), an increase from 2050 in 2008 (Beyrer et al., 2010) though in light of the more recent estimates of the much greater number of PWID possibly living with HIV, coverage now looks to be much lower: only 5 (2–10) in every 100 HIV-positive PWID receiving ART.

Since 2010, funding from the Global Fund to Fight AIDS, TB and Malaria (the Global Fund) and the International AIDS Alliance has facilitated a three-fold increase in the number of NSPs nationally (National Anti-Drug Agency, 2011), supplementing funding that had been primarily provided by the Government of Malaysia. NSPs previously implemented by non-government organisations (NGOs) have also been expanded to include provision of NSP services by Ministry of Health clinics. These promising steps have only begun to show a very modest increase in overall coverage of needles-syringe distribution (National Anti-Drug Agency, 2011).

Russian Federation

In the Russian Federation, NSP coverage remains poor (Table 2). Loss of Global Fund support (see below) and the government's refusal to meet its commitment to finance NSPs at the end of the Global Fund investment led to the closure of many NSPs in 2011; since our last review (B. M. Mathers et al., 2010) the number of PWID accessing NSPs has reportedly decreased by nearly sixty per cent, from around 123,000 (2010) to 49,090 (2011). The Global Fund's recent decision to consider Russian NGOs eligible for emergency continuation of services may facilitate reopening of some services, though if awarded this will last only two years.

Russia continues to prohibit OST. Russian authorities have recently taken action to stop the exchange of information about methadone, applying pressure on advocacy groups, and appear to be hardening their opposition to even the discussion of OST in Russia (Cohen et al., 2011). No new data on ART provision were located for this review; coverage as of 2010 was extremely low (perhaps 1 PWID per 100 HIV-positive PWID accessing ART) (B. M. Mathers et al., 2010).

Ukraine

Ukraine data suggest that the proportion of PWID accessing NSPs has increased (Table 2). However, PWID continue to report major barriers to accessing prevention and treatment services due to fear of police; HIV-positive PWID are more likely to report negative experiences with police (Booth et al., 2013). The number of OST recipients and sites where OST is available has been scaled up between 2008 and 2012, although national OST coverage remains modest (Table 3). The OST program receives very limited government financial support, is hampered by police harassment of methadone patients and providers, by the reluctance of prescribers to allow take-home doses and by the expulsion of clients for relatively minor offenses such as jaywalking. OST patients in pre-trial detention are able to continue treatment, but a prison OST programme remains absent, as does NSP in prisons. The number of

Table 2
Availability and coverage of needle and syringe programmes (NSP).

	Needles-syringes distributed from NSPs per year		Needles-syringes distributed from NSPs per IDU per year		Number of NSP sites		Number of PWID accessing NSP in 12-month period		Percentage of PWID accessing NSP in 12-month period	
	Old	New	Old	New	Old	New	Old	New	Old	New
China	1,173,764–152,715,768 ^e	11,681,903 ^b	32 (1–84)	5 (4–6)	897–901 ^e	913 ^b	>38,000 ^e	41,777 ^b	2% (1–2)	2% (1–2)
Malaysia	1,903,174–2,560,400 ^e	1,800,000–2,500,000 ^d	9 (7–13)	9 (6–13)	117 ^e –130 ^d	352 ^c	5571 ^c	-	2% (2–3)	-
Russia	6,904,460 ^e	5,951,572 ^b	4 (3–5)	3 (3–4)	70 ^d	60 ^b	122,997 ^e	49,090 ^b	7% (5–9)	3% (2–4)
Ukraine	8,356,842–10,015,312 ^e	-	32 (23–43)	-	985–1323 ^c	1667 ^b	94,583–32,361 ^e	170,081–197,516 ^{c,b}	39%(26–57)	64%(47–86)
Viet Nam	20,588,830 ^d –34,845,528 ^e	-	189 (107–323)	-	382 ^d –2023 ^e	3300 ^b	140,254 ^d	-	95% (73– ^f)	-
USA	42,200,000 ^f	-	22 (15–31)	15 (11–21)	186 ^f	184 ^e	-	-	-	-

^a2012; ^b2011; ^c2010; ^d2009; ^e2008; ^f2007; ^g2006; ^h2005; ⁱ2004; ^j2003; ^k2002. ([¶]) greater than parity.

PWID receiving ART increased from 1860 in 2006 (B. M. Mathers et al., 2010) to 3143 by 2011 (Ministry of Health of Ukraine, 2012a).

USA

Updated national-level data on NSP in the US were not found. Sub-national data suggest that coverage has not changed significantly. Compared to the other five countries, the US had the oldest and least comprehensive data for these basic indicators, precluding accurate estimates of national coverage and progress.

Although methadone maintenance therapy (MMT) is available only from specialised clinics in the US (1620 in 2009), around 19,000 office based physicians are certified to prescribe buprenorphine for opioid dependence (Substance Abuse & Mental Health Administration, 2012). The number of people on MMT appears to have increased only modestly, from 253,000 in 2007 to 290,000 in 2009. In 2010, an estimated 640,000 patients received at least one script for buprenorphine or buprenorphine-naloxone (Substance Abuse & Mental Health Administration, 2012), but the number of likely injectors amongst this group is uncertain (Clark, 2010), and likely to be a substantial minority of all such clients (perhaps as few as 30–40%, e.g. Barry et al., 2007; Sullivan, Chawarski, O'Connor, Schottenfeld, & Fiellin, 2005).

In December 2011, the U.S. House of Representatives returned the ban on use of federal funds to support NSPs that they had lifted two years before. This appears to have been a concession made to Republican lawmakers to preserve other essential funding in the 2012 budget. The return of the ban ignores eight U.S. federally funded reports and a plethora of international research consistently showing that NSPs can reduce syringe-sharing, HIV prevalence and incidence and are cost-effective (Institute of Medicine Committee on the Prevention of HIV Infection Among Injecting Drug Users in High-Risk Countries & Institute of Medicine Board on Global Health, 2007).

Vietnam

There appears to have been significant scale up of NSP within Vietnam, with more than an additional thousand NSP sites reportedly in operation in 2011 than in 2008 (Table 2) (HIV and AIDS Asia Region Program (HAARP), 2011). Previously reported estimates of needle-syringe coverage were very high (95% of PWID accessing an NSP in a 12-month period, 189 needles-syringes per PWID per year) (B. M. Mathers et al., 2010), but were disputed by some; alternative verifiable data remain unavailable.

There has been a nearly five-fold increase in the number of clients receiving OST in Vietnam (Table 3), reflecting rapid expansion of this program (Mulvey, Nguyen, & Nhu, 2011). Coverage, however, remains low, and OST is available in only 11 of 64 provinces (Mulvey et al., 2011). One promising development has been the development of a protocol by the Ministry of Health to produce 80% of the required methadone by the end of 2015 (National Committee for AIDS, 2012). The Government also aims by 2015 to use exclusively national resources (including user contributions) to fund the programme (National Committee for AIDS, 2012).

Vietnam has made a concerted investment in national ART expansion (Table 4), with 41,547 people in ART nationally in 2010 (Đỗ, 2010). The specific number of PWID receiving ART remains uncertain, though one study found that 62% of ART recipients in 30 clinics had a history of IDU (Đỗ, 2010).

Detention as a response to drug use

Detention of drug users has been a cornerstone of the response to reduce drug demand in many Asian countries, despite routine rights violations and a lack of evidence of the efficacy of this approach (Degenhardt et al., 2010). Policy approaches to drug use and the treatment of drug users are however, becoming more

Table 3
Availability and coverage of opioid substitution therapy (OST).

	Number of OST clients		Number of OST clients per 100 PWID		Number of OST sites	
	Old	New	Old	New	Old	New
China	103,595–104,068 ^e	140,102 ^b	4(3–6)	5(6–8)	696 ^{h,d}	738 ^b
Malaysia	4135 ^f –6538 ^e	–	2(2–3) ^g	–	≥95 ^d	674 ^b
Russia	0	0	0	0	0	0
Ukraine	4634 ^d	7503 ^a	2(1–2)	3(2–3)	79–100 ^d	133 ^b
Viet Nam	1484 ^d	6931 ^b	1(1–1)	4(5–7)	6 ^d	41 ^b
USA	253,475 ^{f,#}	290,316 ^{d,#}	13(9–19)	15(10–21)	1433 ^{f,#}	1620 ^{d,#}

^a2012; ^b2011; ^c2010; ^d2009; ^e2008; ^f2007; ^g2006; ^h2005; ⁱ2004; ^j2003; ^k2002.

^{*} Includes clients on methadone maintenance only; data on the number of clients receiving buprenorphine not available.

[#] Does not include clients receiving buprenorphine or buprenorphine-naloxone, or general practitioners prescribing buprenorphine or buprenorphine-naloxone.

Table 4
Availability and coverage of antiretroviral treatment (ART) among PWID.

	Number of HIV-positive PWID receiving ART		Number of HIV-positive PWID receiving ART per 100 HIV-positive PWID	
	Old	New	Old	New
China	9300 ^d	23,675	4	10(5–21)
Malaysia	2050 ^e	2500	9	5(2–10)
Russia	1331 ^e	–	1	–
Ukraine	1860 ^g	3143 ^b	2	5(2–55)
Viet Nam	1760 ^d	–	4	–
USA	–	–	–	–

^a2012; ^b2011; ^c2010; ^d2009; ^e2008; ^f2007; ^g2006; ^h2005; ⁱ2004; ^j2003; ^k2002.

evidence-based, with a retreat from widespread detention in the name of “treatment” occurring in the three Asian countries of focus here.

In Malaysia, NADA has adopted a new approach, making some of the previously compulsory programs voluntary. Eight of these former compulsory detention centres now offer OST and psychosocial support (National Anti-Drug Agency, 2011). By 2012, a total of 11,660 drug users had received services from these centres, with 1473 receiving OST (National Anti-Drug Agency, 2011). The number of drug users in compulsory detention centres decreased from 7810 in 2007 to 4876 in 2012 (personal communication, Sangeetha Kaur, NADA, 25th February 2012) (see Table 5).

In China drug control laws includes mandatory registration of drug users or drug testing for suspected drug users. In case of recidivism for drug use or detention, the police rather than judges have the authority to decide whether drug users should undergo mandatory community drug treatment or compulsory detoxification, each for up to three years (Meng & Burris, 2013). In 2006, 300,000 PWID were reportedly held in some form of detention (“boot camps” or compulsory “treatment” centres) (Degenhardt et al., 2010). The government reported that by the end of 2011 there were about 227,000 drug users in compulsory detoxification with another

Table 5
Drug users in detention.

	Number of drug users in detention [*]	
	Old	New
China	300,000 ^g	216,000 ^c
Malaysia	6848 ^d	4876 ^a
Russia	62,200–366,700 ^e	–
Ukraine	57,800 ^g	–
Viet Nam	>60,000 ^e	35,000 ^b
USA	20% of State ^h , 53% of Federal ^f sentenced prisoners (prison population 2,300,000) ^f	–

Types of detention referred to in this table differ for each country. In the case of China, Malaysia and Vietnam these data refer to compulsory detention as a drug use intervention was identified. In the case of Russia, Ukraine and the USA these data refer to imprisonment following arrest and sentencing for a criminal offence.

^a 2012; ^b2011; ^c2010; ^d2009; ^e2008; ^f2007; ^g2006; ^h2005.

36,000 in mandatory treatment in the community and 40,000 in community drug rehabilitation (Office of China National Narcotics Control Commission, 2012) (see Table 5). Vietnam has made moves to reduce numbers held in such facilities, down from more than 60,000 in 2008 to 35,000 in 2011 (Bureau of International Narcotics & Law Enforcement Affairs, 2011); the Deputy Prime Minister has instructed no new compulsory detention centres to be built, with government policy now emphasising a transition to community-based, voluntary treatment (personal communication, Dr. David Jacka, World Health Organization, Vietnam, 11th April 2012).

Incarceration of drug users is also a feature in the other countries considered, albeit through the sentencing of drug users to custodial settings for drug-related crimes, commonly drug possession or use. The US has the largest prison population and the highest incarceration rate in the world with a total of 2,239,751 prisoners in 2011 including those in pre-trial detention, 716 per 100,000 of national population (International Centre for Prison Studies, 2012). While precise data on the number of people who use drugs who are in detention are unavailable for the US, given the size of the incarcerated population and estimates that 20% of State detainees and 53% of Federal detainees were being held on ‘drug-related offences’ (use or trafficking) it is likely that the US has the largest population of PWID incarcerated of all six countries; there have been no updates to these US data since our last review (Degenhardt et al., 2010). Those imprisoned for minor drug offenses account for 10% of total prisoners (and most are non-violent, minor offenders).

Discussion

This review updated data on the epidemiology of IDU and HIV, and estimates coverage of injecting populations with core HIV prevention and care services. There have been successes in the past two years. Policy shifts and increases in access to HIV prevention and treatment are increasing coverage of key interventions for PWID in Asia and Ukraine. Increases in the share of PWID receiving ART in Vietnam, and rapidly increasing numbers on OST in China and Vietnam, offer lessons for other countries facing concentrated HIV epidemics whose ART access and adherence support remain undeveloped, and whose OST programmes remain in perpetual pilot.

In Ukraine, increase in coverage of NSPs to reach perhaps two-thirds of PWID represents a major step forward. Malaysia's shift from a punitive law-enforcement approach to one that includes evidence-based interventions, even among law enforcement structures, is ground-breaking. In different ways, each of these advances is suggestive of policy and programmatic shifts required to realise the promise to contain new infections among PWID, and treat those in need. Against these successes there remain many challenges. Programmes are being implemented while existing laws and policies penalise drug use, leading to ongoing tension between the criminal justice system and health practitioners. In China and Vietnam, for example, while recent progress is encouraging, more PWID remain in compulsory detention centres offering no effective treatment and perpetuating rights violations than in voluntary, community-based OST.

Treatment coverage alone is not sufficient; treatment *quality* matters (Strang et al., 2012). For example, although access to ART and OST are increasing in China, low mean dosages of methadone (35 mg/day on average) (Lin & Detels, 2011), along with internment of those found to be using illicit opioids, may contribute to the high drop-out rate observed in the first phase of the MMT programme (Pang et al., 2007), and risks discrediting methadone effectiveness.

ART coverage levels – to the extent that we can estimate them – remain low among PWID in these six countries. The number of PWID receiving ART increased in Malaysia, Vietnam and Ukraine, but coverage changed only slightly. In some countries, notably the USA, treatment numbers are not disaggregated by subpopulations, making estimates of coverage and potential barriers to treatment for PWID difficult to ascertain. Until data on ART access for PWID is analysed and barriers to treatment removed, possible gains in prevention and treatment of PWID will remain out of reach.

In November 2011, the Global Fund – whose cumulative contribution of up to \$430 million to HIV programming targeting PWID made it the world's largest supporter of such interventions (Bridge, Hunter, Atun, & Lazarus, 2012) – announced that shortfalls required cancellation of its next round of funding and cessation of support to governments deemed too wealthy to be eligible. These included Russia and China, both with major programmes for PWID supported by the Fund.

The announcement has forced many other countries and regional coalitions to suspend requests for NSP, OST and advocacy. Although a few countries (and a consortium of Russian NGOs) will be eligible for two-year grants for “continuation of services,” these will not support new clients, and will exclude capacity building and advocacy support that have been critical for effective reach and scale up. Countries with existing Global Fund grants will also be asked to consolidate, a process that may reduce support for NGOs, though it is possible that some will try to relocate their health resources for HIV.

The US President's Emergency Plan for AIDS Relief (PEPFAR), another major source of HIV support in many developing countries, is unlikely to fill the funding gap. The return of the US ban on federal funding for NSPs cripples the potential for expansion of NSP in key countries and regions, such as Ukraine, Vietnam, and East Africa, where US HIV funds are critical, and where PEPFAR had recently held regional consultations to increase commitment to programming for PWID. The policy change may also prevent HIV prevention researchers from meeting their ethical obligation to provide trial participants with the best standard of care, and undermines the call from the Obama Administration for an AIDS-free generation (Obama, 2011).

Greater leadership will be required from key international actors. Russia and the US have both adopted policies that actively deter effective HIV prevention and treatment for PWID since our last review. The US ban on use of federal funds for NSP impedes programming in multiple countries, while the Russian Federal Drug

Control Service has threatened physicians advocating for OST and forced the closure of an NGO website containing information about OST (International AIDS Society, 2012).

Although the International Narcotics Control Board, the quasi-judiciary body previously criticised for its focus on law enforcement and failure to ensure adequate supply of licit opiates for addiction treatment (Csete & Wolfe, 2008) has failed to demonstrate leadership or express public concern, there has been some movement by other UN entities towards affirming an evidence and rights-based approach. In March 2012, 12 UN agencies (International Labour Organisation; Office of the High Commissioner for Human Rights; UN Development Programme; UN Educational, Scientific and Cultural Organisation; UN Population Fund; UN High Commissioner for Refugees; UN Children's Fund; UN Office on Drugs and Crime; UN Entity for Gender Equality and the Empowerment of Women; World Food Programme; World Health Organisation; and Joint United Nations Programme on HIV/AIDS) issued a joint statement calling on member states to “close compulsory drug detention and rehabilitation centres and implement voluntary, evidence-informed and rights-based health and social services in the community” (International Labour Organisation et al., 2012). The high level, UN-sponsored Commission on HIV and the Law published its flagship report in July, 2012 (Global Commission on HIV & the Law, 2012): it sent a clear message about the HIV prevention needs of PWID and the obligations of nations to meet them, for both legal and human rights reasons.

Limitations

This review was subject to limitations similar those that existed for our earlier reviews (B. Mathers et al., 2008; B. M. Mathers et al., 2010). Our search of the peer-reviewed literature was comprehensive, but many of the data we sought are not necessarily available in peer-reviewed publications; this is particularly the case for information describing the situation in low and middle income countries. Other limitations include our inability to search in multiple languages, the inaccessibility of unpublished reports, and reliance upon networks of colleagues to assist us in accessing and translating grey literature. These networks, however, are far-reaching, and data were drawn from documents in languages other than English, including Chinese and Vietnamese.

Limitations in data collection and reporting on PWID continue to hamper accurate assessment. Countries' reporting against the indicators included here is fragmented, including high income countries such as the US, where it is clear that there are significant barriers to national level surveillance. Such barriers will further limit timely understandings of progress (or lack thereof) in the HIV response for PWID.

We have focused upon three core evidence-based interventions to prevent and treat HIV among PWID, but not interventions with emerging evidence of effectiveness. For example, evidence on HIV risk reduction through use of implanted or sustained-release naltrexone remains limited (Australian National Health & Medical Research Council, 2011; Comer et al., 2006). We have not examined coverage of interventions to prevent initiation to injection, for the simple reason that there is little evidence so far amassed of their effectiveness. Notably, however, ecological observations suggest that when access to drug dependence treatment is widespread, with coverage sufficient to saturate demand, drug use and initiation to injection decrease (Nordt & Stohler, 2006; Van Ameijden & Coutinho, 2001).

Finally, we only reviewed access to drug treatment interventions for opioid dependent individuals. The rising issue of stimulant injection demands research on innovative approaches targeting this group, who frequently inject more often than opioid users.

Research is also needed on effective stimulant maintenance pharmacotherapies.

Conclusions

Stopping HIV infections among PWID, and achieving access to ART have largely been achieved in countries such as Australia and Switzerland. Whether countries with concentrated epidemics among PWID will follow through on pledges to achieve universal access or “get to zero” HIV infections remains an open question.

International and national financial commitments must be made and kept. In an era of constrained resources, financial arguments for maximising return on investment, by ensuring funds are allocated for evidence based strategies to effectively address HIV amongst PWID, are even more salient.

However, so long as law enforcement counters health ministries’ work, HIV prevention and treatment are likely to be impeded. International leadership may also serve to hinder, rather than to help: Russia and the US both actively engage with other countries to turn their domestic policies into more global standards, and in both countries policies have negative implications for public health and human rights of PWID. Reckoning the cost of such policies requires scrutiny by the global community and immediate reform.

Role of the funding source

Funding was provided by the Center for Public Health and Human Rights, Johns Hopkins School of Public Health; authors CB and AW are staff members of this faculty. Funding was also provided by Global Drug Policy Program, Open Society Foundations; author KMS is Director of this programme.

Acknowledgements

We wish to acknowledge the Johns Hopkins School of Public Health graduate students who assisted us with the updates of the systematic reviews, namely: Tricia Aung, Erica Layer, Hieu Pham, Ju Nyeong Park, Benjamin A. Williams, and Kelsey Wright. The Center for Public Health and Human Rights, Johns Hopkins School of Public Health, and the Global Drug Policy Program, Open Society Foundation. Louisa Degenhardt is supported by an Australian National Health and Medical Research Council (NHMRC) Principal Research Fellowship. The National Drug and Alcohol Research Centre at the University of NSW is supported by funding from the Australian Government under the Substance Misuse Prevention and Service Improvements Grants Fund.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.drugpo.2013.08.004>.

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