



Editorial

Drug harms and drug policies in Sub-Saharan Africa: Implementation science and HIV epidemics



With opiate use documented in over half of the countries of Africa, injecting drug use reported in most of these, and linked emerging concentrated epidemics of HIV and hepatitis C infection among people who inject drugs (PWID), there is increasing attention on the incorporation of harm reduction interventions as part of national drug policy responses in African countries (Abdool, 2016; Ratliff et al., 2013; Rhodes, Guise et al., 2015, Rhodes, Ndimbii, Guise, Cullen, & Ayon, 2015). The focus of interest in relation to implementing HIV and hepatitis C prevention is contextualised by longer-standing and broader concerns linked to indicators of growing drug markets, especially of heroin in the East African countries of Kenya and Tanzania (Beckerleg & Hundt, 2004; Carrier & Klantschnig, 2012; International Narcotics Control Board, 2014; Mbwambo et al., 2012; UNODC, 2013a, 2013b). There is a growing body of epidemiological research linking the diffusion of injecting drug use with concentrated outbreaks of HIV and hepatitis C in the region (Kurth et al., 2015; Matiko et al., 2014; Nyandindi et al., 2014). HIV prevalence estimates among PWID in Nairobi, Kenya, for example, have ranged between 14.5% and 50% (Kurth et al., 2015; NASCOP, 2014), and in Dar es Salaam, Tanzania, between 35% and 50% (Dutta, Barker, & Makyao, 2014; Nyandindi et al., 2014). While data is limited, estimates of hepatitis C prevalence among PWID in these settings appear higher still (Muasya et al., 2008; Nyandindi et al., 2014). There are few robust prevalence estimates of HIV, hepatitis C or tuberculosis among people who use drugs in West African and other Sub-Saharan African countries (Bouscalliou et al., 2016; Eluwa, Strathdee, Adebayo, Ahonsi, & Adebajo, 2013; Lancaster et al., 2016; Lepretres et al., 2015; Scheibe et al., 2016).

In a number of East African countries – notably Mauritius, Kenya and Tanzania – drug policies have recently been characterised by a state of adaptation, wherein multiple stakeholders – including global, international as well as local actors – have negotiated the relative merits and evidence in support of harm reduction as a measure of HIV and hepatitis C prevention. In Mauritius, the endorsement of needle and syringe programmes (NSP) and opioid substitution treatment (OST) as cornerstone HIV prevention interventions as part of national policy since 2006 has reportedly enabled these services to be considerably expanded since their introduction, including OST within prisons, to the extent that over 50% of PWID are said to be receiving OST and around 50% NSP (Republic of Mauritius, 2012). In Tanzania, NSP was introduced in 2010 and methadone-assisted drug treatment in 2011 (Ratliff et al., 2013), while in Kenya, NSP was introduced in

2013, and methadone treatment in late 2014 (Rhodes, Guise et al., 2015). The estimated coverage of these interventions, however, is generally below optimum. For instance, assuming the numbers of PWID in Nairobi, Kenya, range between 5031 and 10,937 (0.2–0.5% of the adult population), NSP reaches between 10% and 20% of PWID (Okal et al., 2013), while OST in Nairobi was reaching an estimated 400 PWID by September 2015 (Rhodes, Closson, Paparini, Guise, & Strathdee, 2016).

Implementation science: What is it, and what should it become?

Driven by the public health emergency of HIV and viral hepatitis among concentrated populations of PWID, and shaped by a complex of global and international health interest, the introduction of harm reduction interventions may constitute something of a living experiment in drug policy adaptation in the Sub-Saharan African context. An important role for implementation science is reflecting on the delivery, efficiency and effects of intervention and policy innovations in new settings (Odeny et al., 2015). This is how implementation science in HIV prevention is generally cast. Within a mainstream framework of evidence-based intervention, it generally seeks to establish how interventions evidenced elsewhere might be implemented or replicated into new settings and at what potential cost and effect (Cunningham & Card, 2014; Odeny et al., 2015).

Drug policy adaptations occurring in the light of HIV and hepatitis epidemics in Sub-Saharan Africa focus our attention on what an implementation science can, and should, be doing. Focused primarily on the translation of evidenced interventions, most implementation science may undermine an appreciation of how evidence and intervention are open to multiple interpretations in different times, settings and contexts. The focus is exploring how an assumed-to-be stable and proven-to-be-effective intervention object – such as NSP or OST – can be made to work, with similar effect, under different social conditions. It means that the narrowing of implementation science around existing evidence-based and objectivist frameworks of knowledge production limits understanding of how the meaning, use and evidencing of interventions and policies might be done differently in different knowledge producing contexts. This amounts to a tendency to reproduce what is known rather than learn what is there; a focus on using science to aid the *translation* of an intervention object from one place to another, rather than on

evidencing the *transformation* of an intervention subject in its context.

This narrowing of attention away from more constructionist approaches to exploring intervention and policy-making is in part a methodological concern (Adams, 2008). As is well known, the public health sciences give primacy to quantitative methods of data generation and analysis, and in particular the ideal of the controlled intervention trial given its claims to objectivity via its minimisation of bias, and in so doing, tend to obscure investigations, through qualitative or ethnographic methods, of how meaning, evidence and knowledge is *constructed* locally (Colvin, 2015). But it is also a political concern, especially in the context of global health interventions (Adams, 2008). In our view, how globalised evidence and intervention promise is negotiated locally should be a critical element of implementation science (Rhodes et al., 2016). Understanding alternative and competing forms of knowledge in relation to intervention is fundamental to appreciating why ostensibly the same or similar intervention – such as OST – might be deployed differently in a different context, with potentially different effects, or possibly resisted and not implemented at all. How can implementation science enable different meanings and evidencing of purportedly the same evidence-based intervention? What does it imply when interventions evidenced globally are not simply translated through adaptation into new settings but transformed into something altogether different? Can implementation science, which valorises generalisability, be open to the idea that any given intervention is, in fact, open to multiple interpretation? If, for example, the effects of methadone treatment are evidenced or cast as addiction recovery in one setting but HIV prevention in another, does this not mean that multiple forms of methadone intervention and effect co-exist? And if such intervention knowledges differ on account of context, what is going on in the negotiation between ‘global’ versions of what constitutes objective intervention knowledge and alternative local versions? There is an obvious *politics of knowledge* being negotiated through the discourses of drug policy and HIV prevention, arguably especially in settings under the weight of international influence (Adams, 2008; Nguyen, 2004). This means that drug policy discourses themselves, especially in moments of adaptation or change, are an untapped resource for developing a more critical approach to implementation science (Fraser & Moore, 2011; Stevens, 2011).

In our view, implementation science as currently advocated tends to bracket itself from these concerns. Let us take the example of Russia, and its vociferous policy resistance to endorsing global evidence and recommendation regarding the public health benefits of implementing OST. This tends to be interpreted as an example of grave policy failure that produced harm given the missed opportunity for averting HIV infections had OST been implemented as in Western Europe (Rhodes, Sarang, Vickerman, & Hickman, 2010). Additionally, the case of Russia’s resistance to OST might be seen as an example of advocacy failure, where the combined weight of global scientific evidence with international agency investment and inter-government diplomacy failed to enact a policy change. Our point here is that the kind of implementation science generally promoted may be of little help to understanding why or how these ‘failures’ came about, or how to navigate them. Implementation science must of course orientate to the operation and effects of implementing otherwise evidenced interventions and policies (Cunningham & Card, 2014). But more fundamentally, it must also focus on how evidence and intervention is not a given but constituted locally. A science exploring how different contexts shape the translation, transformation or resistance of policy adaptations must at the outset be open to grounding its knowledge *within that local context*. In our view, this also invites a critical gaze upon the practices of global health intervention and implementation science itself.

The example of Russia’s resistance to OST then, is also an instance of failure of implementation science to ask the right questions and deploy the most appropriate methods. There are important lessons here for any setting of policy adaptation or HIV prevention need, including the region of Sub-Saharan Africa. The encouraging policy developments being made towards HIV prevention linked to drug use, especially in East Africa, focus attention on the kind of implementation science that is needed. Of immediate concern is why, in the face of emerging evidence of HIV risk and concentrated epidemics, have policy adaptations been so slow to incorporate an emphasis on harm reduction? Evidence of the diffusion of injecting drug use in the Sub-Saharan African region, and its potential implications for drug harm, began to circulate twenty years ago (Stimson, Adelekan, & Rhodes, 1996), and in East Africa a decade later (Beckerleg & Hundt, 2004). In Kenya, the introduction of NSP began a decade after this (in 2013), and through small pilot projects delivered by local community organisations reliant upon unpredictable and short-term international funding. The internationally supported project to deliver NSP was publicly risk-managed among policy-makers so as to minimise any adverse reactions to its implementation (Rhodes, Guise et al., 2015). A similar story of fragile implementation emerged with OST. This has been piloted in two Kenyan sites since late 2014, but was at least two years in the planning, during which time the promise of its delivery shifted, generating a mix of hope and rationed expectation for people who had grown tired of alternative ineffective drug treatment options (Rhodes, Ndimbii et al., 2015). What kind of implementation science is needed to understand these structural, systemic and political conditions which shape the potential for policy adaptation and new intervention delivery? Importantly, what kind of implementation science can produce the knowledge required to advocate for the systemic and policy changes required to realise new intervention opportunities?

Implementation science tends to proffer a reactive research intervention connected to a pre-existing package of evidenced interventions. In the field of harm reduction, the focus is assessing the delivery potential of translating the combination package of NSP, OST and antiretroviral HIV treatment into new settings. But with a greater emphasis on using social science methods to understand drug policy adaptations as social systems shaped by their contexts, evidence can better orientate to developing a science of implementation driven by local knowledge and need. Implementation science seeks generalizable knowledge to close the gap between evidence and practice (Odeny et al., 2015), and yet, to some extent, accepts that intervention effects are not free of their contexts (WHO, 2011). In fact, implementation science does not go far enough in troubling the idea of there being a stable single body of intervention evidence that can be translated through a different context into similar practice. A locally grounded and context-based implementation science accepts that a package of pre-existing interventions promoted globally is re-negotiated, even transformed, into something new at a local level.

This lack of primary contextual focus of implementation science is perhaps most acute in settings of resource constraint. The focus of implementation science on exploring intervention reach and coverage is clear, especially given how woefully under-powered (and under-resourced) the pilot harm reduction interventions in the region tend to be. This inevitably means that new intervention opportunities occur in a context of rationing, and in consequence, rationed expectation. A necessary focus of implementation science then, is understanding the political-moral economy of access to care, that is, the systems of social triage and other forms of rationing which may sort the ‘deserving’ from the less so. Related to this, an understanding of how new intervention opportunities in relation to drug use are situated alongside competing, and often

more immediate, everyday concerns, such as food security, family responsibility, employment or housing, are critical. Most obvious is cost. An implementation science of policy adaptation towards HIV prevention needs to assess the relative costs and benefits of such drug policy change, including relative to health and welfare concerns more broadly. A key challenge is whether and how globally promoted intervention innovations can be supported and sustained locally.

In this themed issue of the journal we bring together papers focused on drug use and drug policy in Sub-Saharan Africa. These papers pay attention to drug policy adaptations occurring in light of HIV prevention developments among PWID, but also consider the formation and focus of drug policies more generally. Two of the papers contained here were first presented at a special conference session organised by the International Society for the Study of Drug Policy in collaboration with the journal (Klantschnig, 2016; Ratliff, Kaduri, Masao, Mbawambo, & McCurdy, 2016). Concentrating on research in the countries of Kenya, Tanzania and South Africa, with contributions also focusing on Abidjan and Ethiopia, three themes frame the content of this collection: How is evidence and knowledge in relation to drug policy and harm reduction made locally?; How do local contexts shape the delivery and experience of drug policy and harm reduction interventions?; and How can research help evidence drug harms and intervention need?

Evidence-making in context

Knowledge and evidence in relation to drug use and related policy intervention is made in a particular local context, and is thus best appreciated as an effect of particular actor-network relations (Duke & Thom, 2014; Lancaster, 2014; Stevens, 2011). Such is the approach developed by the contributions by Rhodes et al. (2016), Ratliff et al. (2016), Pienaar and Savic (2016), and Klantschnig (2016). Taking the recent introduction of methadone substitution treatment in Kenya as its case example, Rhodes and colleagues advocate a framework of ‘evidence-making intervention’ as distinct from ‘evidence-based intervention’ to emphasise that the multiple meanings and evidence constructions made in relation to methadone are locally produced moments of evidence-making intervention. Rather than envisaging methadone substitution treatment, or any intervention, as a stable object fixed by its global evidence-base, and thus assumed as transferable across contexts, this approach envisages knowledge and evidence about interventions to be in negotiation through various claims and counter claims made among local actor networks. In Kenya, one discourse surrounding the implementation of methadone substitution treatment is its hope for addiction recovery (Rhodes, Guise et al., 2015; Rhodes, Ndimbii et al., 2015), as also noted in Tanzania (Ratliff et al., 2016), which distinguishes it in ways that are different to its globalisation as evidenced HIV prevention and incorporation into national policy on this basis.

That evidence is a matter of making accentuates the role of critical social science approaches in the field of implementation science. Ratliff et al. (2016) explore how the making of drug policy is less directly an effect of rational evidence-based argument than it is of how complex systems adapt and evolve in relation to multiple forms of knowledge over time. Drawing on an historical ethnography of the emergence of harm reduction in Tanzania, they show that harm reduction policy is made possible through the coming together of various integrating effects in an actor network, such as shifts in stakeholder and community perspectives and values alongside political and economic transitions in addition to evolving scientific evidence. Harm reduction policy is not simply an effect of evidence-based intervention but is a “complex adaptive system”. Their ethnographic case study delineates a framework for

understanding how multiple factors interact systemically to enable, as well as maintain, transitions in drug policy over time.

In an analysis which shares interest in exploring how drug policies are instances of evidence-making intervention, Pienaar and Savic (2016) examine drug policy discourses for how they make the drug problems they purport to address. Following Bacchi (2009, 2012), policies are not treated here as if they emerge in direct response to pre-existing policy problems, but as resources through which certain social problems or risks are constructed as such. Analyses of drug policy texts therefore illuminate the ways in which a society or context both makes and responds to its drugs problems as practices deemed out of place or worthy of surveillance and disciplinary attention. Bacchi’s approach to the study of ‘problematisations’, which has affinity with Foucauldian ideas of governmentality, has been recently eagerly embraced within the drugs and addictions fields (Fraser & Moore, 2011; Lancaster & Ritter, 2014; Lancaster, Duke, & Ritter, 2015). Taking South Africa’s National Drug Master Plan as the focus, Pienaar and Savic show how national policies serve to problematize drugs and construct evidence in particular ways so as to frame, and uphold, a particular (in this case punitive) drug policy approach. Crucially, this process involves the valorisation of globalised evidence, produced out of local context, in the pursuit of local policy solutions.

Klantschnig’s (2016) analysis of the political economy of Nigerian drug policy shares some affinity with the notion of policy-making as a complex adaptive system (Ratliff et al., 2016). Combining qualitative with ethnographic data, this case study again adds to the weight of caution against an idealisation of policy-making as a reasoned evidence-based response to given drug problems (see also, Stevens, 2011; Stevens & Measham, 2014). Nigeria’s policy-making in relation to drug control is considered as a resource through which State power relations are protected, at the same time disabling opportunities for drug policy reform. This case study tells us that the emergence and maintenance of drug control policies, as with the making of policy generally, have political function and context. Drug policy-making enacts particular forms of capital, in the process protecting certain domestic State interests and values, as well as international relations, even while lacking in evidencing its impact regarding its objectives to reduce drug use or drug trade.

Interventions in context

A cluster of papers in this issue explores the local implementation of harm reduction interventions, especially methadone in OST. Tanzania was among the first of Sub-Saharan African countries, in 2011, to implement methadone-assisted therapy (MAT) as an element of combination intervention in HIV prevention targeting PWID (Ratliff et al., 2013). A key implementation concern is how to maximise the reach of MAT (Lambdin et al., 2014), especially given evidence of gendered inequalities in relation to its access (Lambdin et al., 2013). Zamudio-Haas, Mahenge, Saleem, Mbawambo, and Lambdin (2016) explore how broader dynamics governing trust relationships between PWID and care services shape women’s capacity to access such care, highlighting a key role for peer-driven and social interventions in response. Evidence internationally, but also emerging within Sub-Saharan Africa (Bruce et al., 2014), suggests enhanced access, adherence and health improvements linked to models of integrated care, especially through the co-location or linking-up of MAT with antiretroviral HIV treatments (ART) (Reddon et al., 2014; Spire, Lucas, & Carrieri, 2007; Uhlmann et al., 2010). Saleem et al. (2016) focus on delineating the factors that shape initiation on ART among those in receipt of methadone treatment in Tanzania. As with Zamudio-Haas et al. (2016), among their recommendations is the potential afforded by peer support interventions, including to assist clients of methadone in their

navigation of social and systemic barriers to accessing ART. [Ubuguyu et al. \(2016\)](#) add to the emerging weight of evidence exploring the harm reducing impacts of methadone treatment in Tanzania (see also, [Lambdin et al., 2014](#)). They focus specifically on indicators of health-related quality of life among clients of the methadone programme in Dar es Salaam, observing improvements over 18 months in both physical and mental health. Yet they also note the need for social support interventions to maximise and sustain these effects.

More generally, survey analyses among PWID in Dar es Salaam, Tanzania, estimate that only a quarter of those seek medical care when they perceive themselves to need it, and that the capacity to seek such care is shaped by structural conditions, including related to income and employment ([Mlunde et al., 2016](#)). In keeping with an emerging theme highlighting gendered inequality across a number of the papers in this journal issue, qualitative work by [Myers, Carney, and Wechsberg \(2016\)](#) in South Africa considers how gendered inequalities combine with the emergence of perverse social capital linked to community poverty which impact upon women's capacity to access care. Taken together, these papers highlight that the implementation of biomedical treatments, such as MAT and ART, necessitates concomitant social interventions to enhance their reach and impact.

Mapping patterns of drug use and harm

Three papers draw upon a combination of epidemiological and surveillance methods to evidence the extent of drug harms among people who use drugs, especially in relation to HIV infection. Using respondent-driven sampling survey methods, [Bouscalliou et al. \(2016\)](#) find an overall prevalence of HIV of 9.5% among people who use drugs in Abidjan, Ivory Coast, noting that women are over three times as likely as men to be HIV positive. A survey incorporating rapid HIV testing among PWID in five cities of South Africa suggests HIV prevalence of 14% and the prevalence of recent sexually transmitted infections at 25% ([Scheibe et al., 2016](#)). This study notes that around 50% of women who inject drugs have a history of involvement in sex work, and that being HIV positive is associated with an involvement in sex work as well as with a history of sexually transmitted infections. In a survey among HIV positive female sex workers in Malawi, [Lancaster et al. \(2016\)](#) find low levels of regular HIV testing, with a fifth of sex workers unaware of their HIV positivity, and a dose-response relationship between alcohol use and being unaware of HIV status. These studies concur with evidence suggestive of increased odds of HIV risk for women involved in drug use in the region ([Lambdin et al., 2013](#)), and of links between non-injecting drug use, including alcohol, and HIV risk ([Fisher, Bang, & Kapiga, 2007](#)). A particular feature of the production of HIV risk among people who use drugs in some Sub-Saharan African countries is the interplay of sexual transmission risks with those linked with drug injecting, and of concentrated HIV outbreaks occurring inside more generalised epidemics. Developing interventions specifically oriented towards sexual risk reduction is an important, yet neglected, element of combination harm reduction.

Less focused on the direct consequences of drug use, four papers consider the dynamics of local drug markets. Each emphasise drug use initiation and the emergence of drug markets as contingent upon their social conditions. Just as drug policies emerge as an effect of 'adaptive complex systems', so do local drug markets ([Hoffer, Bobashev, & Morris, 2009](#)). In the case of Kenya, Mital et al. illustrate the cascade of effects linked to a disruption to heroin supply, while in South Africa, [Hobkirk, Watt, Myers, Skinner, and Meade \(2016\)](#) characterise initiations

into methamphetamine as shaped by opportunities linked to income generation, employment, and social capital, as well as day-to-day coping. The emergence of local heroin markets and the diffusion of drug injecting in Kenya and Tanzania have been noted as co-evolving inside broader social adaptations and disruptions linked to transitions in market economies and patterns of consumption and migration ([Beckerleg & Hundt, 2004](#); [McCurdy, 2014](#)). Similarly, [Syvertsen et al. \(2016\)](#) draw on a mixed methods study to explore the contingent and dynamic nature of drug markets in Kisumu, Kenya. They investigate user accounts of the emergence of cocaine, but it remains unclear whether the drug described is in fact cocaine rather than adulterated heroin or whether the term cocaine is being used locally as a collective for any powdered drug. Drawing on notions of the social pharmacology of drug use and effects ([Becker, 1967](#)), the study explores the symbolic meanings potentially attached to the object of cocaine, including in relation to how its use might confer identity as a symbol of prestige and modernity (see also, [Fitzgerald, 2005](#); [Rhodes & Bivol, 2012](#)). There is some affinity here with other papers in this journal issue which explore how there is a multiplicity of meaning, evidence and knowledge made locally in relation to the object of drugs and their use or control. Lastly, [Cochrane and O'Regan \(2016\)](#) take the consumption and production of khat in Ethiopia as a case for exploring the political-economic context of drug use and trade, and how this complicates its regulation domestically and internationally. They debate different options for how drug policies in Ethiopia might seek to respond to observed dramatic increases in the production, distribution and use of khat, noting the potential effects, and harms, of such policy options.

Conclusion

There is a complex array of global and local, as well as political and economic, interests shaping the negotiation of drug policies in the Sub-Saharan African region. The incorporation of harm reduction, and how this is evidenced, as part of drug policy shifts framed by HIV prevention is a case in point. Such negotiations in drug policy involve multiple actors, institutions and investments. In Kenya and Tanzania, for instance, these have involved the African Union, the Regional Economic Commission in Africa, the Global Fund to Fight AIDS, Tuberculosis and Malaria, United Nations agencies such as UNODC, UNAIDS and WHO, the United States President Emergency Fund for AIDS Relief (PEPFAR), Agency for International Development (USAID) and Center for Disease Control, and multiple international university and civil society partners, aside from national-level government institutions and non-government, community and faith organisations. Drug policy adaptation, intervention development and evidence-making are processes made through a multiplicity of negotiated perspective in particular political and economic contexts. The task of implementation science is not simply to explore the translation of given evidenced policies and interventions into new settings but to explore how policy, intervention and evidence are locally made.

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Conflicts of interest

All authors have no conflicts of interest to declare related to this work.

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