



Commentary

Towards “evidence-making intervention” approaches in the social science of implementation science: The making of methadone in East Africa

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ARTICLE INFO

Article history:

Received 22 October 2015

Received in revised form 10 December 2015

Accepted 5 January 2016

Keywords:

Evidence-based intervention

Global health

Methadone

Kenya

Sociology of knowledge

ABSTRACT

In this commentary, we take the recent introduction of methadone treatment in response to emerging problems of HIV linked to heroin addiction in Kenya as a case for reflecting on the social science of implementation science. We offer a framework of ‘evidence-making intervention’ which we hold as distinct from mainstream ‘evidence-based intervention’ approaches. Whilst accepting that interventions are shaped in their contexts, evidence-based intervention approaches tend to imagine a stable intervention object with universal effect potential. By contrast, an evidence-making intervention approach investigates how an intervention, and the knowledge which constitutes it, is *made locally*, through its processes of implementation. Drawing on qualitative research generated in Kenya prior to (2012–2013) and during (2014–2015) the implementation of methadone treatment, we explore the making of ‘methadone promise’ as a case of evidence-making intervention. We show how enactments of methadone promise make multiple methadones, through which a binary is negotiated between the narratives of methadone as hope for addiction recovery and methadone as hope for HIV prevention. Addiction recovery narratives predominate, despite methadone’s incorporation into policy via its globally supported HIV prevention evidence-base. Key practices in the making of methadone promise in Kenya include its *medicalization*, and renaming, as ‘medically assisted treatment’ – or simply ‘MAT’ – which distance it from prior constitutions elsewhere as a drug of substitution, and the *visualisation* of its effects wherein unhealthy people can be seen and shown to have become well. We also show how actors seek to protect the story of methadone promise from counter narratives, including through mass media projects. We conclude that there is no single biomedical object of methadone intervening on a single biological body across contexts, and no single universe of evidence. By giving weight to local rather than outside expert knowledge, and by tracing how the meaning of intervention is made locally through its implementation, we can make visible the multiple enactments of an intervention and how these shape local ecologies of care, including in ways beyond those foreseen by an intervention’s evidencing elsewhere.

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In his book *After Method*, John Law (2004) cites the example of Bruno Latour’s ethnographic work on how science was made in the mid-1970s at the Salk Institute in San Diego, California, to illustrate that scientific knowledge, often fixed as objective and true, is *constructed* out of its various methods. Latour and Woolgar (1986)

observed how the apparatus and machines of the laboratory act as ‘inscription devices’, enabling scientists to move from something *material* (for instance, a rat, from which extracts go into test tubes) to something inscribed (a figure, a text, a graphic, produced via a machine, said to relate directly to the original substance). This perspective treats the object being described not as a fixed entity ‘out there’ waiting to be discovered or held constant by the ‘correct’ knowledge of it, but envisions it as *being made* through the implementation practices of the science which describes it. Latour and Woolgar, for instance, cite the example of the bioassay, which

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they indicate is “not merely a means of obtaining some independently given entity, but constitutes the construction of the substance” (Latour & Woolgar, 1986: 64). Material substances and realities are thus made through the methods, equipment, machines and decision-making practices of the knowledges which describe them.

A key observation made by Latour and Woolgar was that because so much experimental data in the laboratory is inconclusive – for instance, how to read or judge a curve or graphic produced by an equipment reading this way or that – scientists constantly make *subjective decisions* about what data was right and worth keeping, and what data was wrong and should be discarded. This ‘making-up’ of scientific facts does not make them false, rather it produces them as true, but made up nonetheless (Law, 2004).

What can we take from this? Is this only relevant for facts constructed in a laboratory in the literal sense? Extrapolating, we can state that an intervention – for instance, a pharmaceutical treatment such as opioid substitution therapy delivered through methadone – and knowledge about it – for instance, how such an intervention is evidenced in relation to its HIV prevention effects – is the product of certain ‘inscriptions’. These inscriptions are produced by an actor-network, which may include the discourses of evidence-based medicine and implementation science, the material tools of intervention science and delivery, as well as surrounding media and policy discourses, and those of various stakeholders engaged locally with the intervention (including those targeted by the intervention). What constitutes an intervention, and knowledge about it, is not given but made. A social science of implementation science thus considers the processes and practices through which ‘material’ interventions or substances (for instance, methadone) are turned into representations or meanings (that is, inscriptions) through the enactments of their implementation (of which scientific practices are a part).

In this commentary, we take the recent introduction of methadone treatment (MT) as a biomedical solution to managing the emerging problems of HIV linked to heroin addiction in Kenya as a case example for reflecting on the social science of implementation science in HIV prevention, and for proffering a conceptual framework of ‘evidence-making intervention’ which we hold as distinct from mainstream ‘evidence-based intervention’ approaches.

HIV, addiction, and East Africa

The East African countries of Kenya and Tanzania are witnessing growing HIV incidence linked to drug injecting. In Kenya, for example, estimates of HIV prevalence among people who inject drugs (PWID) are as high as 50% in Nairobi and 20% in Coast Province (NASCOP, 2012). Prior to the introduction of MT (December 2014 in Kenya, and March 2011 in Tanzania), treatment for heroin addiction largely comprised private-only short-term residential detoxification and rehabilitation, affordable to few, and characterised by high relapse (Ratliff et al., 2013; Rhodes, Guise, et al., 2015). With international support, and following a cascade of policy development, the national Governments of Kenya and Tanzania have endorsed the incorporation of harm reduction interventions for HIV prevention among PWID, including MT and needle and syringe programs (NSP).

In Kenya, NSP was introduced in 2013. After two years of planning, MT was introduced in December 2014 as a primary element of HIV prevention and drug treatment strategy. Under the coordination of the Ministry of Health, MT is being implemented via specifically tailored clinics in Nairobi and in Malindi (Coast Province). The programme is sponsored by The U.S. President’s Emergency Plan for AIDS Relief (PEPFAR), via funding from the

Center for Disease Control and USAID. Implementation support is provided by the University of Maryland (USA) based in Nairobi and by the United Nations Office of Drugs and Crime (UNODC). Potential patients are recruited, assessed and referred to clinics via local community service organisations that are also involved in delivering NSP. At the time of writing, there are approximately 400 patients receiving MT in Nairobi and 140 in Malindi.

The introduction of MT alongside the incorporation of harm reduction constitutes a significant departure in national drug policies in Kenya, and likewise in Tanzania, as well as a potential turning point in personal and institutional narratives of addiction and its recovery (Ratliff & McCurdy, 2016; Rhodes, Ndimbii, Guise, Cullen, & Ayon, 2015). Legitimised by the emergency of HIV outbreaks among concentrated populations of PWID, the introduction of MT can be seen to represent an *experiment* in the East African context (Nguyen, 2009). It is not simply an evidence-based intervention translated into a new setting, but enacts an *evidence-making practice*.

Evidence-based intervention

The introduction of MT into East Africa is primarily cast as an instance in the translation of evidence-based biomedical interventions in global health into new settings, of which a key element is expanding the international evidence-base in its support across different contexts of high and low income, within and beyond the West. There are parallels here with the building of global discourses of evidence-based harm reduction more broadly, which accentuate the potential positive effects of a combination of harm reduction interventions – principally NSP, MT, antiretroviral HIV treatment (ART) – for PWID in non-Western settings (Degenhardt et al., 2010). The discourse of evidence-based harm reduction emphasises the potential for a ‘universe’ of HIV prevention effect through the promise of reductions in HIV risk, incidence or prevalence, albeit with such potential moderated according to epidemiological and social context (Degenhardt et al., 2010; Schackman, 2010). This discourse also carves out a linear narrative of progress in the global uptake of evidenced-based intervention, measured by indicators of global diffusion and coverage (Mathers et al., 2010). As the diffusion, and evidencing, of evidenced-based harm reduction intervention expands, the case for its transportation into new regions becomes increasingly robust.

There is major global investment, through the World Health Organization (WHO), UNODC, UNAIDS, Global Fund to Fight AIDS, Tuberculosis and Malaria, and other international agencies, in promoting MT as an ‘essential medicine’ of evidence-based intervention for treating heroin addiction and preventing HIV among PWID. MT is presented as one of the best evidenced interventions for HIV prevention and addiction treatment (Macarthur, Minozzi, & Martin, 2012; Metzger & Zhang, 2010). It is linked with reductions (as high as 60%) in the prevalence and incidence of drug injecting, and in syringe sharing (as high as 80%), as well as reductions in overdose and acquisitive crime. Meta-analyses in high-income countries associate MT with a 54% reduction in HIV among PWID (Macarthur et al., 2012).

Discourses of evidence-based intervention foster an evidence-based hope. A key element here, for example, is how mathematical modelling evidences promise through practices of projection. Modelling suggests that in mid (20–40%) to high (>40%) HIV prevalence epidemics among PWID, introducing MT at a population coverage equivalent to that in Western Europe (around 40% of PWID) could reduce HIV incidence by 50% in five years (Vickerman et al., 2014). The recently modelled impact of introducing MT in Kenya shows relatively slight reductions in HIV incidence (5–10%) and prevalence (2–4%) over 5 years at coverage levels of around 10%, but coverage at 40% promises a 20% reduction in HIV

incidence, even when accounting for high sexual transmissions (Rhodes, Ndimbii, et al., 2015). These effects may be enhanced further with concomitant access to other biomedical interventions, especially antiretroviral HIV treatment (ART) (Bruce et al., 2014; Degenhardt et al., 2010; Strathdee et al., 2010; Van Den Berg, Smit, Van Brussel, Coutinho, & Prins, 2007).

Mathematical modelling, alongside other evidence-making practices, are resources for policy and knowledge negotiations in relation to the represented value and certainty of intervention promises, and whether these might be advocated, tolerated or contested. The discourse of modelling is but one means of inscription in the evidencing of promise, albeit a potent one. It is critical that all researchers and knowledge producers remain reflexive in relation to their role in the production of evidence regarding intervention promises and their apparent potential for transportability across (often largely unknown) contexts.

Following Latour's inspiration, we believe that an important role for a social science of implementation science is to consider scientific and other knowledge-producing practices for how they make a 'fact', and not simply whether or not these presentations are 'correct'. This shifts us towards a different kind of implementation science. Beyond an approach which accepts the need for social science research to explore how the implementation of a priori evidenced interventions is in some way shaped by the social environments in which they are delivered, we can envisage an approach which investigates how evidence and intervention, as well as their knowledge and implementation contexts, are made locally through the processes of intervention translation and implementation. This is a much stronger and more critical use of social science in harm reduction and HIV prevention, for it takes the processes of intervention implementation, and the scientific and other knowledge this generates, as a site for study, accepting that the evidencing of global intervention is never fixed but always in friction, inevitably a negotiation (Adams, 2008; Nielsen & Jensen, 2013).

Evidence-making intervention

Rather than evidencing known interventions as responses to given policy problems, we advocate a critical social science approach which asks how such evidence, intervention and problem came to be. This perspective draws first, on the study of 'problematisations', which investigates policy, science and other texts for what they represent and how they construct a problem which they purport to address (Bacchi, 2009, 2012), and second, on 'actor-network' theories, which investigate how intervention and other effects are made in the specific moment of the coming together of various actants, human and non-human, surrounding an intervention (Latour, 2005; Law & Hassard, 2005). By focusing on the relationships between problems and interventions as *things in the making*, we can explore how the promise of globally promoted biomedical solutions in HIV prevention are negotiated, and made meaningful, in local social relations.

We emphasise two primary strands in an evidence-making intervention approach. First, the aim is to understand what and how intervention is constituted through the frictions between the various forms of knowledge which make it. Second, the aim is to understand the lived health and other effects of such intervention in relation to local economies of capital and care. The first of these aims can make visible the variable and multiple enactments of an intervention which can be generated other than those presumed to be stable 'in translation'. The second of these aims can make visible the variable and multiple lived effects of globally supported health interventions in how they might shape local bio-social subjectivities as well as ecologies of care, including in

ways beyond those foreseen or fixed by an intervention's evidencing a priori. These two effects – of intervention knowledge and experience – are obviously not distinct from one another but equally 'reality-making' in how an intervention is constituted (Biehl & Moran-Thomas, 2009; Fraser & Valentine, 2008; Nguyen, 2004). This highlights a focus of implementation science research on the entwined aspects of the discursive production of evidence and intervention knowledge (for instance, what intervention is represented to be) and the embodiment of this into experience (for instance, how intervention subjects are made) (Valentine, 2007). Moreover, interventions are evidence-making in a recursive fashion, with intervention meanings and experiences negotiated locally on account of context at the same time as transforming and making these contexts of knowledge production.

In an evidence-based intervention approach, implementation science is usually presented as concentrating on the evidencing of interventions beyond reasonable doubt and how a given intervention of known effect might be best implemented in different contexts or scenarios. Key concerns include preserving the *fidelity* of an intervention in the controlled empirical demonstration of its impact across contexts (Adams, 2008). In the fields of global health and HIV prevention, implementation science has thus been defined in relation to its capacity for generating empirical knowledge which is useful for guiding evidenced-based intervention implementation, through better understanding an intervention's feasibility, acceptability, and effect (Cunningham & Card, 2014; Schackman, 2010). In an evidence-making intervention approach an implementation social science *also* concentrates on how knowledge in relation to an intervention, and thus what constitutes the intervention, is being made (and possibly made differently) according to the circumstances of its implementation. Intervention evidence-making includes the implementation sciences produced in relation to it, such as public health and evaluation research, alongside other knowledge forms, including the 'non-empirical', such as policy texts, biographical narratives and lived experiences.

From this perspective, there is no single biomedical object of methadone intervening on a single biological body across a fixed context, and no single universe of evidence (Duff, 2013; Law, 2004; Mol, 2002, 2005). Rather, *there are multiple methadones* produced locally through a *multiverse of knowledges* (Fraser, Moore, & Keane, 2014). The object of MT, and the representation of its promise, is not as fixed as discourses of biomedical evidence imply, for it is interpreted, and re-interpreted, in fact made, locally. Evidence-based intervention approaches imagine a stable intervention object which interacts, largely through its biological effects, on a stable population (also fixed as such by the evidence produced about it) in a stable context, presumed to moderate these intervention – population interactions. In evidence-making intervention approaches none of these – interventions, populations, contexts – are held constant, since all are transformative effects of their interaction. Just as evidence and intervention is always in the making and multiple, so too are 'target populations', whose biological body is fluid and transformed in relation to how biomedical interventions take effect, and 'social contexts', which are at once shaping yet shaped by the evidence, intervention and populations with which they interplay. Whereas evidence-based intervention emphasises determinism (isolating a cause of effect), evidence-making intervention accepts contingency (revealing networks of effect).

Context-made methadone meaning

The basic idea that methadone, as with any intervention, is somehow shaped by its context is a familiar one (Bourgeois, 2000;

Fraser & Valentine, 2008), and this is part of the mainstream rationale underpinning the need for an implementation science in the translation of evidence-based interventions (Duke & Thom, 2014). For instance, we can refer to the example of Russia, or that of the UK and U.S.A. Each demonstrate variable constitutions of methadone in context and time; that is, *different context-made methadones*.

Russia's policy resistance to opioid substitution therapy over the past decade has been characterised by a vociferous "Say No To Methadone" campaign in direct opposition to efforts made by global agencies, including WHO, to transport such evidence-based intervention into the East of Europe where the HIV epidemics among PWID are among the fastest growing. In so doing, methadone was constituted a 'toxic drug' and 'failed intervention' of the West; a cause of addiction and associated criminality rather than a medical solution to it (Latypov, 2010; Rhodes, Ndimbii, et al., 2015). Methadone becomes a resource, a form of capital and performance, in international policy negotiations in the politics and values of the East and West, in which negotiating a dualism between public health and criminal justice approaches, freedom and coercion, care and constraint, and HIV prevention and addiction recovery is core. Russia's policy discourses in relation to methadone construct it very differently to those of the global health movement seeking to promote its expansion into a region cast as having out-of-control HIV and heroin addiction problems. We see that the object of methadone is made differently in its context and at the same time as making its context. Here, methadone is a symbolic site and resource of negotiation in the making of a particular policy – and political – context in public health as well as global relations. Just as the evidenced-based intervention approaches of the global health movement fix a particular deterministic account of context in relation to Russia and the harmful consequences of its methadone resistance (uncontrolled HIV and harmful drug policy), an alternative methadone seeks to challenge this position constructing the West as colonising in its policy ambitions.

Not dissimilarly, we can see the recent re-fashioning of methadone as a medicine for addiction recovery in 'post-AIDS' drug policies of the UK and US which de-emphasise harm reduction (Berridge, 2012; Duke & Thom, 2014). Here, methadone is being reconstituted differently to how it once was; now performed as a medicine for addiction recovery rather than as a low threshold tool for preventing HIV and reducing drug harm as was the case twenty years ago in a time of intervention experimentation and HIV emergency. Different time contexts make different methadones, where again a balance is struck in negotiating the space between the dualism of HIV prevention and addiction recovery.

In these examples, methadone meaning and effect is mediated through its context of implementation rather than through evidence universally accepted and applied. This leads us to consider how a multiplicity of context-based meaning is made in relation to methadone, with MT potentially constructed differently by different knowledge-making disciplines (epidemiology, sociology, psychology, criminology, journalism), as by different actors (international donors, policy officials, religious leaders, researchers, clinicians, journalists, people who use drugs, people who sell drugs). The object of methadone takes on contested and situated meaning: a medical treatment, a harm reduction strategy, a crime reduction strategy, a public health intervention, a social welfare intervention, a resource for addiction recovery, a dangerous drug of dependence, a threat to illicit drug sales. Each enactment of methadone – from its discursive portrayals in science, policy, or media to its negotiations materialised in practice – is *itself* an evidence-making intervention.

Multiple methadones

The idea that a given substance – like methadone – is subject to different interpretations on account of its context is the primary thrust in applied public health discourses for incorporating social science methods as part of implementation science approaches. In this theorisation, the substance itself remains the same, and it is the interpretations which differ. This is a kind of weak form of social constructionism which does not trouble the idea of the substance of methadone as an inanimate object existing separately from its field of human interaction. But if we accept that methadone is mutable, multiple, specific and located, constituted differently according to time, space and the inscription practices of implementation which make it, we might entertain the more provocative idea that there is *no such thing as a stable object called methadone*, always the same but shaped by interpretations. Rather, methadone is what comes to be known as methadone on account of the actor networks producing it. This is why we cannot privilege or fix any one particular knowledge of methadone, such as that promoted by a global movement of evidence-based intervention, or that constituting methadone as essentially either addiction recovery or HIV prevention, over any other when thinking how interventions are made in their local contexts. Rather, the focus becomes investigating how particular objects of methadone are made and why particular meanings of methadone stick or become undone.

The seminal work of Emilie Gomart illustrates this point (2002). She explores the multiple meanings ascribed to methadone in different methadone trials, one in the USA in 1965 and one in France in 1975. These trials characterise methadone and its effects in diametrically opposing ways: Dole and Nyswander found methadone to be different to heroin, whereas the French trial found it similar. Like Latour and Woolgar (1986), Gomart finds that the properties of methadone, and the substance itself, are *produced through the trials*. It is not that the substance of methadone can be taken-for-granted as pre-existing in the same way prior to the trials, but rather, the trials 'make' what the drug becomes. Gomart departs from both essentialist and social constructionist understandings of objects to argue that methadone (as any pharmaceutical) should not be conceived as having an inherent essence which is variously interpreted but that its "sheer multiplicity" of meaning makes it "impossible to hold that the substance is constant" (2002).

Moreover, this perspective does not merely see the multiplicity of methadone as a discursive production – constructed by the scientific, policy, or community narratives which represent it – but also envisions this as materially made, through a coming together of a pharmaceutical object and biological body. The effects of multiple methadone, as with any pharmaceutical in health care, are *embodied* among its human subjects, and thus materialised into being in variable ways (Biehl & Moran-Thomas, 2009). There is neither a single methadone nor single biological body, for both are contingent on, and instances of, the knowledge producing capacity and other 'looping effects' of an intervention's implementation (Hacking, 2000).

We can extend this way of thinking to studies of implementation science in HIV prevention. Rather than taking methadone as given but variously interpreted, we can seek to understand what methadone is locally, how such knowledge is produced through its discursive and material implementations, and how science in negotiation with other knowledges inscribes this intervention into evidence.

The making of methadone in Kenya

We have begun to document methadone's implementation in Kenya through qualitative research. This has included

longitudinal research, led by TR and AG, with 110 PWID in Nairobi ($n = 30$), Malindi on the North Coast ($n = 50$) and Ukunda on the South Coast ($n = 30$) undertaken in the two years prior to methadone's implementation (Rhodes, Guise, et al., 2015). Participants in this study had a mean age of 31 years (19–49) and were predominately male (70%; 76). All but two had injected in the last four weeks, with almost all (97%; 106) injecting daily. Roughly a quarter (29%; 32) reported previous experience of residential drug treatment, and a similar proportion (28%; 31) reported themselves to be HIV positive, with this being highest in Nairobi (53%; 16). As part of this study, 43 interviews were also undertaken with key stakeholders in the fields of HIV prevention and drug treatment, including representatives of: national policy; international development; drug treatment; HIV prevention; law enforcement; and community outreach. In addition to this study, we are developing qualitative and ethnographic research to coincide with methadone's implementation. Focused on Nairobi, and led by RC, this work is ongoing, and at the time of writing has included 22 interviews with stakeholders engaged in public or professional dialogue about methadone and/or addiction, alongside observations in sites of methadone dialogue (such as stakeholder interactions, meetings, workshops, and national policy or media events).

We draw selectively upon these two studies to offer preliminary illustration of methadone as an evidence-making intervention. First, we emphasise how the making of methadone promise and expectation is shaped in its local social relations, including in ways other than those proffered by the global evidence-based discourses driving its translation. Second, we emphasise how a critical focus on the processes of intervention implementation can help reveal how local practices of knowledge-making surrounding an intervention 'work', including in the making and protecting of certain locally mediated meanings or evidence. Our case study below gives greater emphasis on how methadone-meaning-making is discursively produced than it does on how the embodiment and experience of methadone enacts an evidence and knowledge making effect, but this is not to imply a privileging of discursive analyses in evidence-making intervention social science.

The making of methadone promise

A core theme of interview accounts in our qualitative longitudinal research among PWID was a poverty of drug treatment opportunity, framed by an overarching narrative of *rationed expectation* in relation to realising access to health care (Rhodes, Guise, et al., 2015). A desire for addiction recovery was voiced despite major constraints on drug treatment access. The primary form of drug treatment available locally was private residential rehabilitation, offering detoxification with counselling, usually over 3–6 months, at a monthly cost which averaged around 10,000 KSh (~114 USD). Such treatment was prohibitively expensive for most. In response, people invested their hope of recovery on the slim chances of securing sponsorship from local benefactors, and failing these, on their self-recovery efforts. People made considerable effort to perform themselves as deserving of a place at rehab, and negotiated hard with local community projects to champion their cause. We found that the narration of addiction recovery hope was almost exclusively invested in the hope of rehab access, and the various strategies people deployed to get there, and yet at the same time, a normative culture of rationed expectation overwhelmed, casting access to drug treatment opportunity as extremely rare and inherently fragile. This rationing of treatment expectation was further accentuated given a sense of strong *treatment doubt* linked to a norm of relapse said to follow time spent in rehab. Moreover, rehab was often used as a "garage of

repair" rather than as a means of sustained recovery, embodied as a form of respite and harm reduction and less as a means of securing abstinence.

Taken together, our analyses show that narratives of addiction recovery desire, and generalised hope for drug treatment or recovery opportunity, coexist alongside those of everyday rationed expectation. A narrative of generalised hope for a better drug treatment and health future was protected in the light of a 'discounted present'. This collision in time horizon – between maintaining recovery hopes for the future whilst managing rationed expectations in the present – was most keenly felt among those living with HIV and among those fearing their chances of acquiring it. Here, there was a sense of time running out, which acted as a spur to realising recovery desire as soon as possible through the pursuance of alternative recovery strategies to those offered by the State, largely through *self-treatment* when rehab opportunities repeatedly failed to materialise.

This then, is the local context-making of methadone promise and expectation. Methadone's introduction enters (and shapes) an environment in which there is a common narrative of addiction recovery desire apparently accentuated rather than displaced by a sense of HIV prevention and care emergency, and where access to recovery opportunity is extremely limited. This context, and the 'promise of methadone' in relation to it, is made in particular ways. While for national policy-makers the primary framing of methadone is in relation to *HIV prevention hope* (Fig. 1), with the official representation of methadone at the programme's national launch carefully constructed as a 'medically assisted therapy to reduce new HIV infections', it also offers – especially for would-be patients and community stakeholders – *hope of addiction recovery* (Fig. 1). Given the norm of relapse linked with rehab, methadone engenders hope as a better recovery alternative. Rehab is presented as failing to prevent relapse through its incapacity to stave off withdrawals, whereas methadone promises sustained recovery through its management of these. An emerging narrative envisions recovery made easier by methadone (Fig. 1). Significantly, a key feature of the methadone as addiction recovery narrative is that it is not cast as having ongoing presence or as a form of maintenance, but is constituted as a temporary state of transition. Methadone is a transitory state towards a normalcy restored, embraced by some as a magic medicine, and even articulated in some meetings that we have observed in religious and spiritual terms as "Jesus" and "Savour", offering hope, redemption and "new life" (Fig. 1).

Our ongoing ethnographic and qualitative research highlights two key features in the making of the methadone as addiction recovery narrative. This first is an appeal to *medicalisation*; the second, is an appeal to *visualisation*. The relative acceptability of methadone's introduction links to its capital as a medicalised solution. That methadone is a pharmaceutical technology appears fundamentally important to enabling its legitimacy as a 'scientific' intervention (Fig. 2). It's re-naming in the Kenyan context as "medically assisted therapy" – rather than "methadone" or "substitution treatment" – distinguishes it as a substance other than a 'drug' and separates it from other forms of 'harm reduction' social intervention (Fig. 2). At the national launch of the methadone programme in August 2015, we can see how the t-shirts worn by programme advocates and patients promote "MAT" (medically-assisted therapy) embodying the colours of the packaging of the medicine itself (Fig. 3). This new language of 'medically-assisted therapy' serves to shield talk or promotion of methadone specifically, and any prior associations of its construction as a 'drug' of 'substitution'. The acronym "MAT" has become the most commonly used term to describe this intervention, abstracting the substance of the intervention

Hope for HIV prevention

The reality of zero infection may not simply be a myth or a dream, it can become a reality. [global health agency representative]

The only way we can stabilize them [PWID] is through methadone so if we have strong methadone programmes we will have effective HIV programmes. [national policy representative]

Hope for addiction recovery

Many people don't want to go to rehab. It is like time wasting... Six months you are locked somewhere and after that you come out you don't have the skills, you cannot be employed, you are just idle. That will take you back to using drugs. But with methadone, if you are working you don't have to go to the rehab, you can control, you can substitute the heroin with the methadone. [person who injects drugs]

They've gone to rehabilitation, they've tried addiction counselling several times, some have been in jail several times and they thought, 'When I leave jail I will stop using drugs'. But what you find with heroin is that it is a very addictive drug and what happens when you give someone methadone is that it stops that craving. So that makes methadone, a more, an even more effective and desirable treatment for these clients. [addiction treatment specialist, Ministry of Health documentary "Breaking the Chains", 2015]

I have heard that if you take it, you will not have pain. There is no way that you will have desire for the drugs, so now if you take this thing [methadone] you will be OK. / If I don't feel withdrawals, isn't that an easy way of staying away from addiction? [people who inject drugs]

Aspirational talk

It is the only hope that we have. So we are selling it to them [people who use drugs]. Like, every time I meet them I tell them, that there is hope. Methadone is coming! [community organisation representative]

We give methadone to the people and the problem is over. They come, they take the dose, and they don't need to take drugs, they don't need to inject themselves, they don't need to steal, they can go to work, yeah, that's what we want! [community organisation representative]

I see methadone as the biblical David that would slay Goliath (drug barons). The Government only need to arm David with a sling and stones. [national policy representative]

This is a story of the glorified first drops of methadone in the dry throat of the junkie, the thirty minute wait, the finality, the confirmation, and the new dawn of tomorrow. [poem performed by client of MT at the national launch of methadone's implementation]

Fig. 1. Narratives of methadone promise.

from its object of methadone. We can see how the invention of MAT opens up a new working, a new meaning, for this treatment locally.

Equally crucial, in terms of how the story of evidence in relation to methadone is made, is that this state of medicalised transition is *visible* (Fig. 2). With a transition towards normalcy witnessed, it can be believed. The visibility of 'positive impact' is a strong feature of accounts of methadone promise, for such evidence is embodied,

materialised, collectivised, not simply a matter of competing spoken word. Methadone is telling its own story of success; and the methadone treated client becomes, a resource, a text, a kind of inscription device, for making and communicating this. The methadone subject becomes something to be desired, a state-of-being others imagine themselves in relation to and wish to emulate (Fig. 2). Methadone is evidencing its own success, and this creates demand (Fig. 2).

Medicalisation

I'm just going to give you an overview of the medically assisted therapy—that is why we are calling it 'MAT'. In Kenya, people like calling it the "methadone programme" but it's just because we are using that drug, there are so many other drugs available globally. We have had some people reporting that it's like substituting one drug for another one. But the difference between heroin and methadone is that it is possible to taper off methadone when someone is ready to stop using it; for heroin you cannot do that. [national policy stakeholder, addressing journalists]

We don't need needles here, don't bring needles here. But what's this other one? Methadone. What is it? This is the kind of medicine they [drug users] will need, yes, bring it, bring it, that's what we want! [community organisation representative]

Visualisation

I saw the addicts who were given methadone, they have completely changed. They have become different people. Sober minded people. When they didn't have methadone they wouldn't come to the mosque, but now they can come [community representative]

Then there's others who actually come to the clinic and they tell you, "Oh you see so and so, I want to be just like them. Yeah I've seen them, they're getting methadone, they look better, they look healthier, they look happier, and I want to be like them". [Social worker]

The reason why we have such [high] demand is because of the physical changes that the community, the parents, plus ourselves, are seeing with methadone... The very, very unkempt drug users we knew are now clean, sane people who can go on with their life and are acceptable in their families. So, methadone fits in very well in this problem of heroin eradication. The only intervention that we have seen any positive change in a drug user's life is methadone. [community organisation representative]

Fig. 2. Making the methadone addiction recovery narrative.



Fig. 3. Representing “MAT” (medically assisted treatment).

The protecting of methadone promise

The object of an intervention does not sit still, fixed in its meaning, but evolves according to its moments of construction and shifting inscription practices in time. Our work illustrates how methadone is in flux through its process of implementation. In the

two year period prior to its material delivery in Kenya, the accounts of would-be patients emphasised a situation of relentless waiting (Fig. 4). In the absence of certainty, and in the presence of repeated revisions to promised delivery dates and organisational arrangements, this fostered for some an erosion of trust in the promise (Fig. 4). Even before its materialisation, a

Rationed expectation prior to delivery

We don't even talk about methadone anymore. Every time we ask [community projects] we are told maybe next month... And now for two years they have been telling us that it is “soon”. It has come to a point where we don't believe there is going to be any methadone programme... We were supposed to start last year in February, and now it's been two years... People were eager at first. They thought this is our chance to get out of this shit, but because nothing has happened, people no longer think about it. When you talk about it, they think ‘Ah, you are wasting your time telling us about methadone’, because we don't believe it will happen. [person who injects drugs]

Practically, we haven't heard anything about it on the ground again. We are waiting for this to be a reality... They [people who inject drugs] are very disappointed because it is not coming as fast as it could be. [community organisation representative]

Just imagine. They [people who inject drugs] wanted to start methadone. But the problem was the Government... The Government was delaying it. Today “we'll start next week”. That next week, we arrange the clients, they come here, we wait for them, it's [methadone] not there! More than a year, we were bringing clients here, giving them education, yeah, “you'll go to methadone soon, it will be started”. It's [methadone] not there. [community organisation representative]

Rationed expectation during implementation

There are some who perceive it as a magic potion, like if I start it'll be okay and everything will be fine. People who didn't trust me will start trusting me again and everything will just be perfect once I start the methadone. And then there are those who definitely think that it's almost like a way of the Government to get them to stop using. Like it's the Government's propaganda, so why should we use it if I don't want to use it? It probably won't help me. Remember so and so died. Remember so and so started using it and now they've relapsed. / We keep reminding them of the need to take the methadone and giving themselves time. Because this is someone who's used heroin for 12 years. He expects in a month he should be better, going back to doing things as normal, he won't have the need to be high, he won't have the cravings. So I think really it's about education and then also counselling... Recovery [is] a process. [social worker]

Methadone alone will do nothing. But methadone with education, methadone with counselling, methadone with psycho-social support will offer a whole comprehensive package. But if you're just sending them off to the methadone and expecting everything will work itself, then that's not true... We need a multi approach. [Social worker]

Implementation as a managed ‘secret’

It's not something that we can launch. It's not something that we can show case publicly... The silence [of religious and community leaders] was key, because it was much better than opposition. [national policy representative]

We decided to do it [implement NSP] very cautiously, secretly, so that we don't raise anybody's attention, to the extent that we blow the whole thing before it is even launched, so just to be on the safe side... Secretly, because after all what we are aiming for it not to make everybody know like this is what we are doing. [national policy representative]

Implementation as a public media project

Don't just criticise for the sake of it... You can tell a story where you are criticizing, but in a positive way... / We want you to have empathy. These are also human beings. These are our brothers, these are your sisters... Tell their stories. Be their advocate. Tell their stories so we can have more partners supporting the programme. Tell their stories so that when they are through with treatment, they will have people employing them. Tell their stories so that Government and donors add more money to reach more IDUs. So you are telling your story from that perspective. And when you criticise and analyse from that perspective then the policy makers will know why they should put more money on methadone. [national policy representative, addressing journalists]

Fig. 4. Protecting the narrative of methadone promise.

counter discourse of methadone as a symbol of dashed hope began to emerge, representing a familiar tension between narratives of aspiration and talk of recovery desire on the one hand, and experience of unrealised promise, disappointment and limited recovery opportunity on the other (Fig. 4). The ways in which methadone has since been implemented also fosters some rationing of expectation, primarily because its lived experience is felt to fall short of the high aspirations of impact imagined prior to its arrival (Fig. 4). Methadone may not emerge as the ‘quick fix’ to recovery anticipated, people have been observed to relapse or drop-out of treatment, some may be using heroin at the same time as methadone, there are rumours of overdose.

There is heightened consciousness among stakeholders engaged in methadone’s implementation of the power of ‘rumour’ to tell stories which undo the narrative of methadone promise. Focusing on the knowledge-making of intervention as part of an implementation intervention process, reveals how inscription practices ‘work’ to make a particular representation of intervention *stick*, if only for a time. Our ongoing ethnographic fieldwork shows, for instance, how stakeholders with vested interest in the methadone project devise knowledge-making strategies to protect its narrative of promise, including by counteracting stories of different, less appealing, methadones. One such discursive strategy is to step back from the articulation of methadone as a medicalised panacea. Since its implementation, there is growing emphasis among some stakeholders on methadone being “just one intervention”, and of the need for a combination of interventions, both in HIV prevention alongside ART and NSP, and in addiction recovery alongside social and structural supports, over and above the medication itself. We can see a taming of aspirational narrative, linked to a growing voice among stakeholders beyond the clinic that social change requires more than a medical solution.

Policy makers with an investment in promoting methadone are particularly conscious of how a rationing of expectation threatens the methadone project. National stakeholder accounts accentuate the need to act to protect the story of promise. In the early days of implementation, methadone was piloted as a ‘managed secret’ as a strategy to avoid generating community resistance, as used when implementing syringe exchange a year earlier (Fig. 4). Here, ambiguity is used as a *resource* to protecting the promise prior to methadone’s implementation becoming wider known, by keeping methadone *invisible* until such time as there were ‘positive’ visible effects to self-evidence its success. More recently, there has been considerable energy directed, especially among national stakeholders, in promoting and protecting a ‘positive’ methadone. A key tactic has been working through the television and press media on methadone related stories, developing documentaries and other features (such as a promotional video produced by the Ministry of Health) and in August 2015 (eight months after its introduction) carefully managing a public national launch event of the methadone project.

A key stratagem in the inscribing of positive methadone is showing evidence of its visible positive effects on people, turning them from ‘ill’ to ‘well’, towards ‘cleaner’, more ‘attractive’, and ‘healthier’ looking persons. A particular feature has been the methadone client rolled out as a ‘champion’ and giving testimonial as part of the media knowledge-making cause. Methadone has shifted from an invisible unknown and managed secret, to a managed media project. RC, as part of her ethnographic observation, notes for instance the targeted efforts made by policy stakeholders to encourage journalists to construct “positive” and “progressive” stories about methadone, and even to generate mechanisms whereby government agencies can vet the methadone stories journalists propose (Fig. 4). Again, a key feature of the methadone to be represented, including via the media, is its inscription as a medical treatment. Journalists and others are

reminded that methadone in Kenya is not ‘opioid substitution treatment’ without a recovery goal, but *medically assisted therapy* with heroin’s eradication in mind (Fig. 4).

Conclusions: friction and flux

In this commentary, we have depicted the object of methadone as multiple, open to negotiation, and crucially, the product of competing inscriptions arising from actor-networks of local effect. We have illustrated this through the specific example of the making of ‘methadone treatment promise’ in Kenya. The making of methadone promise and expectation arises out of a *friction* in conversation between as well as across global and local representations of what constitutes methadone, and specifically, works to navigate a commonly represented duality between methadone as a hope for HIV prevention and methadone as a hope for addiction recovery. In the methadone of Kenya, addiction recovery narratives predominate, despite methadone’s incorporation into policy via its globally supported HIV prevention evidence-base. What this means for what methadone in Kenya becomes is the focus of our ongoing work, and of significant interest to implementation science. Is methadone in Kenya an addiction recovery intervention? Is methadone in Kenya HIV prevention? How is methadone in Kenya multiple things simultaneously? How is the making of methadone shaping methadone experiences and the contexts of its implementation?

The *very substance* of this intervention is *multiple*, more so than implied by a social science which seeks to document methadone as if it were the same substance but variably interpreted (Gomart, 2002). How an intervention is constituted shapes its embodiment and use, and this means that different methadones in different bodies in different contexts can produce different effects. And it also means that methadone is potentially always in *flux*, with its meaning only potentially sticking for a while, subject to the actor-network inscriptions that compete to make or sustain it and its variable materialisations through use. Our ongoing work in Kenya is tracing methadone’s becoming through time, with each enactment event of methadone potentially an instance of methadone transformation.

What does this mean for implementation science? In keeping with an evidence-based intervention approach, implementation science is primarily oriented to evidencing the potential feasibility and impact of interventions into new settings and contexts. The role for social science envisaged here is investigating how the contexts of implementation shape intervention delivery and potential, pointing to strategies to maximise impact through modifying the intervention implementation environment. This is an essential public health role, for biomedical interventions, no matter their theoretical potential, are made in the social world, mediated through a network of social-political-material factors, and thus always on the move (Adams, 2008; Hacking, 2000).

But we believe that this still constitutes a weak use of social science. An evidence-making intervention approach implies the need to study the process of intervention implementation for how intervention evidence and knowledge is made, of which evidence-based sciences are only a part. This implies first, the need to see the *implementation process* not only as a key site of implementation science but as a site of intervention constitution. We have drawn particular attention to the local making of promised global health intervention prior to its piloting or material implementation. As we have seen from the case example of methadone in Kenya, what is said about an intervention even before its delivery constitutes what it is, with what is said potentially shifting in time according to what the intervention next becomes. Implementation science rarely investigates how future intervention promise impacts on the local present (Brown & Michael, 2003), and this is a missed

opportunity for understanding how contexts at once make interventions and are made by them.

Second, there is a need to see *implementation science* as a key site of study itself. Science is a key inscription practice in the making of intervention, and particular sciences narrow the making of interventions, and knowledge about them, in particular ways according to their methods and means of discourse. Qualitative and ethnographic research, as illustrated here, for example, may represent different methadones and narratives of methadone promise than the discourses of mathematical modelling, epidemiology or intervention evaluation. Implementation science comprises a *dialogue* across different versions of science and evidence (Colvin, 2015; Duke & Thom, 2014). A critical social science encourages a reflexivity in how these different sciences make their knowledge. Of course, in an evidence-making intervention approach, we are talking about interventions being constituted through different forms of evidence and knowledge in simultaneous dialogue with one another, including the non-empirical and non-scientific. There is always the tendency for those comfortable with sticking with a particular discourse of evidence-based intervention to discount alternative knowledges, scientific or otherwise, as less worthy or rationally persuasive, according to their own privileged methods of assessment. This relates in large part to the (illusionary yet comforting) sense of certainty and determinacy enabled by the idea of stable objects of evidence-based intervention (Hacking, 2000; Law, 2004). In contrast, by giving particular weight to local rather than expert knowledge generated elsewhere, and by tracing how the meaning of intervention is locally produced, we remain open to better seeing how interventions are materialised through their implementation, how this shapes local experiences and ecologies of care, and ultimately, how different versions of implementation science are made.

So what is methadone intervention? While often held to be so, it is not a single pharmaceutical acting on a single biological body in a stable context, but *multiple*; a product of a multiverse of knowledge-making practices (Fraser et al., 2014), generating contingent interacting methadones, methadone subjects, and implementation contexts. Methadone is an evidence-making intervention at least as much as an evidence-based intervention. In considering how implementation science might better incorporate the study of evidence-making intervention, we see implementation science as not only a resource for intervention improvement but also as a topic of investigation in how science inscribes a certain knowledge about interventions.

Acknowledgements

This commentary was developed through a visiting lecture invitation at the Center for AIDS Research at the University of California in collaboration with the University of California at San Diego. We are grateful to the International AIDS Alliance for supporting our work researching the development of harm reduction in Kenya, and to participating outreach projects who have assisted with our fieldwork (Omari Project, Malindi; Nairobi Outreach Services Eastlands Team, Nairobi; TeensWatch, Ukunda). We acknowledge support for SAS through NIDA R37 DA019829. We would like to acknowledge our ongoing partnership with the National AIDS and Sexually Transmitted Infections Programme (NASCO). We thank our interview participants.

Conflicts of interest: All authors declare no conflicts of interest in relation to this work and its submission. In addition, the paper has not been previously published and neither is it being considered for publication elsewhere.

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