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Programmatic Strategies to Maximize Service Utilization in Dar es Salaam, Tanzania

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Providing Medication Assisted Treatment (MAT) as an HIV Prevention Intervention:
Programmatic Strategies to Maximize Service Utilization in Dar es Salaam, Tanzania

By

Sophia Alexandra Zamudio-Haas

A dissertation submitted in partial satisfaction of the
requirements for the degree of
Doctor of Public Health
in the
Graduate Division
of the
University of California, Berkeley

Committee in Charge:

Professor Malcolm Potts, Chair

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Abstract

Providing Medication Assisted Treatment (MAT) as an HIV Prevention Intervention:
Programmatic Strategies to Maximize Service Utilization in Dar es Salaam, Tanzania

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Sophia Alexandra Zamudio-Haas

Doctor of Public Health

University of California, Berkeley

Over the past decade, myriad social and economic factors have fueled a burgeoning population of people who inject heroin in sub-Saharan Africa, creating an urgent need for HIV prevention and treatment services tailored to this marginalized group. While the epidemic in the region remains largely driven through heterosexual risk behavior, a higher probability of disease acquisition per exposure can lead to rapid transmission among people who inject drugs (PWID). Stigma and discrimination isolates PWID from accessing available HIV care services designed for the general population and has contributed to HIV prevalence in PWID up to four times greater than country averages. To address this crisis, a few trailblazing governments with support from international HIV/AIDS funders have begun to develop and in the case of Tanzania, implement, comprehensive national harm reduction services for people who use and inject drugs. This dissertation contributes to the growing body of implementation science literature on medication assisted treatment programs (MAT) for PWID in sub-Saharan Africa.

This dissertation takes a three-paper model to identify programmatic and policy strategies to enroll, retain and support patients in MAT programs, focusing on Tanzania. The first paper, a systematic review of the literature on methadone as an HIV prevention intervention, describes evidence-based best practices and applies key findings to make recommendations about service delivery in a limited resource setting. Results suggest that enhanced outreach and increased dosing can help maximize service utilization. The second and third papers delve into the experiences of the first MAT program on mainland sub-Saharan Africa, located at Muhimbili National Hospital in Dar es Salaam, Tanzania. The program has successfully implemented a continuum of harm reduction care, culminating in methadone treatment for PWID. However, monitoring and evaluation data highlight a gender disparity in service utilization, with women comprising less than 10% of clients. Relying on in-depth interviews and observational data collected over three field visits from July 2011 to February 2013, the last two articles look at ongoing service needs for women in treatment and identify strategies to bring more women into care. Results suggest that women face distinct hardship in treatment, needing increased psychosocial support services and economic development interventions to help them heal histories of sexual trauma and regain custody of their children. Additionally, outreach tailored to women can help increase treatment enrollment. Findings from this dissertation have implications for MAT programs in Tanzania and in other areas in the region with similar epidemiological and cultural environments.

This dissertation is dedicated to my family, in particular to my mother, who taught me through her own endless love and support the most important lesson I have learned in life: the boundless capacity of the heart.

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Introduction

Over the past decade, myriad social and economic factors have fueled a burgeoning population of people who inject heroin in sub-Saharan Africa, creating an urgent need for HIV prevention and treatment services tailored to this marginalized group. While the epidemic in the region remains largely driven through heterosexual risk behavior, a higher probability of disease acquisition per exposure can lead to rapid transmission among people who inject drugs (PWID). Stigma and discrimination isolates PWID from accessing available care services designed for the general population. In a global assessment of coverage of HIV prevention, treatment and care services for people who inject drugs, Mathers et al found coverage generally low, with considerable variation among and within regions (Mathers et al, 2010). Service coverage was lowest in sub-Saharan Africa, with an estimated 0.1 needle-syringe exchanged per PWID per year, as compared to a high of 202 needle-syringe exchanged per PWID per year in Australia. This low-coverage translates directly into higher HIV incidence in PWID. Despite global declines in HIV incidence, the UNAIDS Report on the Global AIDS Epidemic shows that new infections continue to rise in PWID in Eastern Europe, Central Asia, and sub-Saharan Africa (UNAIDS, 2012).

Growing attention to the role of injection drug use in HIV epidemics in sub-Saharan Africa has contributed to a shift in policy and service provision, with increasing support for prevention and treatment services to meet the needs of hidden populations of PWID. Recent changes in US guidance around HIV prevention for PWID encourages stronger response to stem transmission in PWID in countries receiving funding through the President's Emergency Fund for AIDS Relief (PEPFAR) (US Department of State, 2011). While a majority of countries in sub-Saharan Africa lack data and any services for PWID, a few countries have taken the lead to document and address HIV in this key population (Mathers et al, 2009). In particular, Kenya, South Africa and Tanzania have quickly stepped up response to prevent and treat HIV in PWID (Dewing et al, 2006; Nieburg et al, 2011).

In Dar es Salaam, Tanzania, initial monitoring of urban injecting drug use highlighted a public health crisis in people who use and inject drugs, particularly women. Studies estimate HIV prevalence in PWID reaching fifty-percent, while prevalence estimates for the general urban population are about 8% (McCurdy et al, 2005; Williams et al, 2009; DHS, 2013). Gender inequities contribute to complex vulnerabilities for women PWI, driving greater sexual and drug risk taking behavior. As a result, HIV prevalence among women who inject is almost three times as high as among their male peers. Participation in sex work to fund drug use raises the possibility of PWI as a bridge population, potentially contributing to a reversal of a downward trend in incidence. Reaching people who use and inject drugs with comprehensive care, and providing a policy and legal environment that promotes service utilization, is essential to stemming transmission and promoting the health of a marginalized population (Strathdee et al, 2010)

In 2010 the Tanzania Drug Control Commission (TDCC) partnered with the Tanzanian Ministry of Health and Welfare, with technical support from Muhimbili University and Hospital of Allied Sciences (MUHAS) and Pangaea Global AIDS Foundation (PGAF) to develop a national framework to provide prevention and treatment services to people who use and inject drugs (TDCC, 2010). As part of these efforts, the consortium introduced the first medication assisted treatment (MAT) program for opiate dependence in sub-Saharan Africa, based in the mental health services section of Muhimbili National Hospital. The World Health Organization, along with many other medical guiding bodies, considers MAT, also

known as opiate replacement therapy (ORT), best medical practice for people with opiate dependence (UNODC, 2004). Yet considerable political and economic challenges have prevented adoption of a comprehensive risk reduction approach in most parts of the Global South (Wolfe et al, 2010; Strathdee et al; 2010; Nsimba, 2009; Mcurdy, 2010).The MAT program in Tanzania provides a precedent setting opportunity to lead the way for other counties in the region considering supporting similar prevention and treatment programs for PWI.

Beginning its third year of service delivery, the MAT program at Muhimbili National Hospital demonstrates success enrolling and retaining PWID in treatment, yet engaging women in services remains a challenge. Weighted modeling estimates show that women make up about a third of the injecting population. However 8% of enrolled MAT participants are women (Lambdin et al, 2011). Inequities in utilization occur throughout the methadone service cascade, from outreach to enrollment. Difficulty initiating and retaining women in drug treatment are not unique to Tanzania. Evidence from a variety of contexts shows that women with alcohol and other drug dependence tend to face distinct barriers to service as compared to men (Greenfield et al, 2007) Additionally, once in treatment, histories of past trauma and higher prevalence of comorbidities can raise challenges to successful recovery unique to women.

This dissertation seeks to contribute to a growing body of knowledge on providing medication-assisted treatment as a long-term intervention to prevent the spread of HIV in PWID in sub-Saharan Africa. Taking a three-paper model, this dissertation adds to the implementation science literature for best practices in MAT program service delivery. The first paper presents results from a systematic literature review to enroll and retain people who inject in treatment. Implications for the sub-Saharan context are discussed, suggesting that enhanced outreach and higher dosing can help maximize utilization of services. The second and third papers rely on original qualitative research conducted with the MAT program at Muhimbili National Hospital. Direct observation of program activities and 25 in-depth interviews with providers and clients were conducted from November 2012- February of 2013. The second dissertation paper documents experiences of women PWID before entering treatment, relating past trauma and greater stigma to ongoing challenges to their recovery, and identifying continuing service needs. The third paper presents barriers to service utilization among women and suggests programmatic strategies to enroll and retain more women in care.

Background and Significance

Overview of Heroin Use in sub-Saharan Africa

While little is known about the use of intravenous drugs in sub-Saharan Africa, a growing body of literature by a handful of authors begins to explore the origins and impacts of heroin trade in the region (Affinnih, 2002; Beckerledge et al, 2005; Beckerledge et al, 2006; Nsimba, 2010; McCurdy et al, 2005). Port cities on both the East and West coasts of Africa seem to be central points in what one author calls the “global narcoscape” of drug trafficking, linking narcotics produced in the Middle East and South East Asia to consumer markets in Europe and North America (Affinnih, 2002). Research suggests the increasing availability of heroin, combined with rapid urbanization, high unemployment, and a burgeoning youth culture led to the development of local drug use (Beckerleg et al, 2005; Lugalla, 1995; McCurdy et al, 2005). However, this assessment lacks engagement with evidence from other contexts linking adverse childhood experiences and addiction (Dube et al, 2003). Histories of physical and sexual abuse, combined with lack of support systems, could play into the rise of heroin use among youth in East African contexts, particularly given the number of AIDS related deaths that have eroded traditional kinship networks of support (Lalor, 2004).

In Tanzania, heroin use seems to have begun around 1990, initially localized in Dar es Salaam, and spreading from there into other areas of the county (Ross et al, 2008). While it is difficult to track the number of heroin users given the secretive nature of the behavior, it seems that heroin use has been rapidly increasing since around 2000. An estimated 150,000- 250,000 heroin users reside in Dar es Salaam, about 50,000 of who are estimated to inject, in a city with a population of about three million (Nsimba, 2010; McCurdy et al, 2006). Smoking heroin in combination with marijuana and cocaine, a *'koktail'* is the most popular means of ingestion. Injection drug use has grown

Over the past 5 years, public attention to drug use and drug trade has grown, with heroin now a common topic in media (Kilonzo et al, 2007). Media attention has contributed to a scaled up police response to heroin. Research suggests that aggressive policing policies have fueled entrepreneurship among small-scale drug pushers, with the unintended consequence of spreading distribution from one area to various neighborhoods in the city (McCurdy et al, 2006). At the same time, media attention has contributed to growing stigma around drug use. Combined with a lack of services to help heroin users detoxify their bodies and rebuild their lives, an opinion editorial in the International Journal of Drug Policy (Kilonzo et al, 2007) wisely declares an urgent need for multi-sectorial intervention in Tanzania.

HIV Among IDUs in Dar es Salaam

HIV prevalence in the general population in Tanzania stands comparatively low for the region at 5.6% [5.3% - 6.1%] (UNAIDS, 2009), yet rates are disturbingly high among intravenous drug users and commercial sex workers. In Dar es Salaam, research studies estimate HIV prevalence among intravenous drug users (IDU) ranging from 42% to 57% (Williams et al, 2009; McCurdy et al, 2005). Among women IDU, the majority of whom engage in commercial sex work (CSW), prevalence is estimated at 64% (Williams et al, 2009; Williams et al, 2007). Clearly a crisis in its own merit, the HIV epidemic among IDUs and CSWs additionally threatens to raise HIV prevalence among the general population. Lessons from HIV prevention in South Asia and Eastern Europe teach the importance of harm reduction for IDU and CSW subpopulations, not only to protect the health of vulnerable

groups, but also to prevent a rise in overall prevalence (McCurdy, 2007; Metzger et al, 2010; Sullivan et al, 2004; Strathdee et al, 2010).

Intravenous drug use in Dar es Salaam, like in cities in other parts of the world, concentrates in impoverished areas and among segments of the population with histories of adverse experiences (McCurdy et al 2006; Roberts et al 2010; Lalor et al, 2004). People living in urban slums or informal settlements are more likely to use illicit substances, more likely to suffer from infectious disease and chronic illness, and more likely to lack access to health services than people of similar means living in other areas of the city or in a rural environment (Riley et al, 2007; Sheya et al, 2008). Larger sociopolitical forces that shape social inequities drive these disparities in health outcomes and exposure to risk factors (Harpham et al, 2009; Lugalla et al, 1995). One study exploring differences in patterns of injecting drug use and HIV prevalence by neighborhood in Dar es Salaam found striking variation based on place (McCurdy et al, 2006). Collecting used needles by neighborhood and then testing blood residue for HIV, investigators identified prevalence rates of HIV in used syringes as high as ninety-percent in Msasani and as low as zero percent in Mbezi, Mwananyamala, and Sinza (McCurdy et al, 2006). Results suggest that slum/informal settlement neighborhoods in Dar es Salaam shoulder the highest rates of HIV and IDU.

Gender, Sexuality and HIV among Women IDU

Norms around gender and sexuality contribute to the higher HIV prevalence among women who inject in complex ways (McCurdy et al, 2010; Ross et al, 2008; Zieler et al, 1997). Women with chemical dependence often engage in sex work to fund drug use, yet stigma around sex work isolates them from family and community support networks, increasing vulnerability to assault and decreasing power to negotiate safer sex. Stigma around sex work and drug use can pose a barrier to accessing health services, including reproductive health services. About 90% of women injectors also engage in sex work, another possible source of the higher HIV prevalence among women, while only about 2% of male injectors report sex work (Williams et al, 2007). However, research from Tanzania as well as other contexts highlights that sex workers tend to use condoms with clients, having unprotected sex with love partners who might inject, complicating assumptions linking sex work practices to higher HIV prevalence in women (Outwater et al, 2000; Williams et al 2007).

Gendered differences in injecting behavior might contribute to the higher HIV prevalence among women injectors. Evidence suggests that while women IDU are less likely to share needles or inject in male dominated shooting galleries, they are more likely to engage in the high risk practice of 'flashblood' sharing, where blood from the body of a woman who just injected is injected into another to prevent symptoms of heroin withdrawal (McCurdy et al, 2010). In interviews, women employ norms around gender to explain the practice of flashblood among women, noting women's communal values, desire to help friends and loved ones in need, and generosity contributes to the frequency of the practice (ibid).

Sexual violence against women related to injecting behavior might also contribute to higher HIV prevalence. A study looking at differences by sex and gender among IDUs shows increased risk of sexual violence for women injecting drug users as compared to men and non-injectors (McCurdy et al, 2005). Injecting often takes place in rented apartments or *majetos*, ideally offering a haven for people incapacitated from the high of heroin, away from police and perpetrators. *Magetos*, generally rented and run by men, often require

women injectors to have intercourse with the proprietor to gain entry (ibid). Interview data suggests that women in *magetos* are considered sexually available to all men in the shooting den, even when without the ability to consent due to intoxication. Women report avoiding *magetos* because of the risk of sexual assault, pushing them to inject in the street or other risky public locations (ibid).

Evidence from Kenya documents the high prevalence of sexual and physical violence against sex workers in urban slums, which might be exacerbated for PWI when addiction creates urgency around earning money or compromises judgment when under the influence (Okal et al, 2011). One study exploring experiences of violence among sex workers highlights the importance of intuition and negotiation to help reduce experiences of violence. More experienced sex workers report avoiding certain areas or types of clients who they feel might harm them. In the context of addiction, the ability to walk away from threatening clients or avoid threatening situations is compromised by the drive to procure substances and avoid painful withdrawal symptoms (Outwater et al,). Sex workers note that when appearance has been affected by long-term drug use, women who inject can have difficulty competing for clients, creating incentive to work with clients who otherwise seem risky.

As sex workers, women injecting drug users face reproductive health concerns that differ from male counterparts. Access to contraception and abortion services stand out as key family planning concerns for sex workers in similar contexts, although few studies explore the reproductive health needs of sex workers within Tanzania outside of the context of HIV risk (Maganja et al; 2007; Sutherland et al, 2011; Wamoyl et al, 2011). Research tends to focus on HIV prevalence and risk behavior, falling short of looking at female sex workers as mothers or sexual beings with multiple concerns around services aside from those related to their profession (Outwater et al, 2000; Maganja et al; 2007).

The large proportion of women injecting drug users in Dar es Salaam that identify as homeless suggests a social isolation unique to women as compared to male injectors (Williams et al, 2007). Looking at differences in risk behavior and health outcomes among men and women IDU, Williams et al found much higher reported earnings among women as compared to men IDU, attributed to women's income as sex workers. Preliminary dissertation research conducted with a key informant woman IDU in August 2011 suggests women face double stigma in their families and communities, as IDU and as sex workers (authors notes). Yet at the same time, the key informant reports that women IDU/CSW have children who often live with extended family. The majority of the women's income goes back to their families to care for their children, contributing to a situation where women IDU earn more than male counterparts, take on greater sexual behavior related risks to support their families, and yet are more likely than men to face rejection and social isolation (Ross et al, 2008).

Medication Assisted Treatment: Improves Health Outcomes and Reduces Risk Behavior

Ample evidence from research and practice supports the use of Medication Assisted Treatment (MAT) to help people with opiate dependence stop heroin use. Considered a key component of a harm reduction approach to treat chemical dependence, MAT is standard of care throughout North America and Europe, with methadone the most common form of medication used in treatment. Methadone, a slow release narcotic, prevents the physical withdrawal symptoms associated with ending heroin ingestion (Joseph et al, 2000; Connock et al, 2007). When taken orally every 24 hours at the appropriate dose, methadone

saturates dopamine receptors in the brain and prevents a high from heroin, taking away the incentive to use heroin in addition to methadone, as the patient will not experience a greater feeling of euphoria even if they were to ingest it (ibid).

Evidence suggests that MAT works through two central pathways to reduce HIV risk behavior and improve HIV related health outcomes. The first pathway, attributed to the direct biological effect of methadone treatment on the brain, reduces the urge to use heroin and eliminates the high from heroin use. This causes participants to reduce or eliminate heroin injecting practices and other types of heroin ingestion, such as smoking and/or inhaling. The reduction or elimination of injecting reduces or eliminates the risk of transmitting HIV through sharing needles and works. For participants with HIV, this also reduces or eliminates the risk of new infection with another strain of HIV, a contributing factor to increased viral load and reduced CD4 count (CITE). Additionally, heroin abuse taxes the immune system, thus it is hypothesized that reducing or eliminating heroin ingestion will directly improve HIV clinical outcomes (Sacerdote et al, 2008). Furthermore, heroin has been shown to increase HIV viral replication, thus reducing exposure to heroin should directly reduce HIV viral load (Donahoe, 1993).

The second pathway via which MAT reduces HIV risk behavior and improves related health outcomes arises from the indirect effects of ending heroin dependence. In the absence of heroin dependence, participants are more likely to respond to the counseling and health education components of treatment. Research shows that former injectors in treatment reduce their sex partners and increase condom use as compared to non-methadone patients (Avants et al, 2004; Lollis et al, 2000). Additionally, without the constant need for money to purchase drugs, participants have less incentive to engage in sex work, and are more likely to use condoms thus reducing risk through sex work (ibid). Studies suggest that sex workers who are not using substances are more likely to take precautions with their health, increasing condom use and decreasing risk of sexual assault (Okal, 2011). For people living with HIV and in MAT, adherence to HIV medication increases. Improved sleep and eating patterns contribute to rapid improvements in general health, as compared to peers who continue with heroin use.

Consortium in Support of MAT: A Program Overview

To respond to the HIV epidemic among IDUs in Dar es Salaam, the Tanzanian Drug Control Commission (TDCC) established a consortium to enhance efforts to reduce HIV transmission in 2009, introducing the first MAT program to sub-Saharan Africa as part of a national framework for the provision of comprehensive HIV prevention and risk reduction interventions. In partnership with Muhimbili University of Health and Allied Sciences (MUHAS), the Tanzanian Ministry of Health and Pangaea Global AIDS Foundation (PGAF), and with support from the United States Center for Disease Control funded through the President's Emergency Plan for AIDS Relief (PEPFAR), the consortium began providing methadone to eligible IDU through a clinic established at Muhimbili National Hospital in 2010 (Lambdin et al, 2012 & 2013). In partnership with four community-based organizations (CBOs), the program coordinates a treatment cascade, beginning with street based outreach and concluding with MAT for eligible participants.

The treatment cascade provides education and outreach services to all interested participants, while connecting IDU interested in treatment to eligibility screening for MAT. Two mobile outreach units provide HIV counseling and testing on the street, working in partnership with four storefront drop-in centers to coordinate service provision. The drop-in

centers provide information, education and communication for HIV risk reduction, syringe-cleaning kits, counseling services for individuals, groups and families and a venue for 12-step programs to meet (Lambdin et al, 2012 & 2013). To be eligible for participation in MAT, interested participants attend three counseling sessions at storefront CBOS and an in-take session at the MAT clinic at MUHAS to gauge readiness for treatment and record health status and history of risk behaviors. Participants must demonstrate commitment to treatment, some form of outside support, and physical evidence of recent and long term injecting. Given the scope of the trial program, MAT is not available at this time for people who smoke or sniff heroin. Limited resources constrain services to only those most at risk for HIV transmission and those likely to benefit from treatment. Once enrolled in the program, participants receive psychosocial support services through the CBOs and present every 24-hours for oral methadone at the MAT clinic.

Conceptual Frameworks

Feminist Framework

A feminist framework of analysis underlies the approach to this dissertation research. For this project, a feminist framework assumes that norms around gender and sexuality, based on inequitable power dynamics that privilege men, shape women's health in complex ways. Additionally, a feminist framework assumes conventions and practices around gender, rather than biology, determine women's positions and experiences in society (Zierler, 1997). The definition of gender used for this research comes from Nancy Krieger's seminal article, "Genders, Sexes, and Health: What are the connections- and why does it matter?" where gender is defined as a "*social construct regarding culture-bound conventions, roles and behaviors for, as well as relations between and among, women and men and girls and boys* (Krieger, 2003)." This research will use the definition of sexuality from the same article, where sexuality refers to, "*culture-bound conventions, roles, and behaviors involving expression of sexual desire, power and diverse emotions, mediated by gender and other aspects of social position (e.g., class, race/ethnicity, etc.)*" (Krieger, 2003). Moving beyond a focus on individual behavior and comparisons between men and women, a feminist approach to this research calls for interrelation analysis looking at the influence of larger social, political, and economic forces, as shaped by conventions and assumptions regarding gender.

A feminist framework and the underlying assumptions itemized above have particular applications in this context in regards to risk of HIV transmission, reproductive autonomy, and experiences of stigma and discrimination among women study participants. Gender disparities in sexual risk taking, gender based patterns of injecting and drug sharing, and sexual and physical violence against women are key determinates of the higher HIV prevalence observed among women IDU in Dar es Salaam as compared to men (McCurdy, 2005; McCurdy 2010, Ross, 2008; Wamoyi, 2011, Williams, 2007). Yet understanding how these factors influence experiences in drug treatment remains a research gap; taking a feminist approach to the case study will help understand these connections. A feminist framework for analysis also calls for exploring the ways socially sanctioned expressions of sexuality, which foster stigma and discrimination against sex workers or women who exercise sexuality outside of procreation goals, shape access to and utilization of health services.

Human Rights Framework

For this dissertation, a human rights framework of analysis introduces the concept of dignity and non-discrimination as central to health, linking histories of oppression to observed conditions. This framework assumes that rights are interconnected and interrelated, and that people experiencing rights violations tend to experience them in multiple spheres of their lives (Gruskin, 2005). Perhaps most importantly, a human rights framework of analysis calls for attention to government duties and responsibilities to protect and promote the rights of all citizens equally. In the context of this study, a human rights framework draws analysis away from the individual level, calling for critical study of political and economic factors that might constitute rights violations and shape increased vulnerability to HIV (Zierler, 1997). A rights framework brings to the forefront the importance of treatment and medical care for most at risk populations for their own protection and health, contrasting with a utilitarian approach while calls for treatment services to protect the good of the general population.

Applying a human rights framework of analysis to this research helps to understand differential service utilization among women and men as a product of rights violations. Services that might be quality, acceptable, affordable, and efficient for men may not be for women (Gostin, 1994). Discriminatory enforcement of laws around drug use, parenting, or sex work might play distinct roles in daily realities for IDU depending on gender (Zierler, 1997). A rights framework for this research will help determine courses of action pursued with findings, funneling action to influence policy and practice that best promotes conditions to foster the exercise of human rights.

Paper 1. Evidence Based Best Practices for Medication Assisted Treatment as an HIV-Prevention Intervention: Implications for Sub-Saharan Africa

Background

Increasingly, injecting drug use has emerged as a critical concern in HIV-epidemics in sub-Saharan Africa. Egypt, Kenya, Mauritius, Nigeria, South Africa and Tanzania have all documented and begun to address emerging epidemics of injection drug use (Dewing et al, 2006; Aceijas et al, 2004; Nieburg et al, 2011). A recent surge in drug trade in coastal cities supplies cheap, strong heroin to urban populations (Affinnih, 2002). Easy access to heroin combines with myriad social and economic forces, such as rapid urban migration, lack of employment for youth, and limited mental health care, to fuel growing populations of people who use and inject drugs (Acuda et al, 2011). While HIV transmission in the region continues to occur primarily through heterosexual intercourse, transmission via shared injecting equipment carries much higher risk per exposure, making it imperative to reach people who inject drugs (PWID) with prevention and treatment services (Metzger et al, 2010; Sullivan et al, 2005). Research from Tanzania suggests that HIV prevalence among people who inject drugs in Dar es Salaam is four to five times greater than prevalence in the general population, while research from Kenya estimates that about half of PWID in Nairobi are living with HIV (Williams et al, 2009; Odek-Ogunde et al, 2009). Participation in sex work to fund drug use raises the chance of PWI as a bridge population, potentially reversing downward trends in HIV incidence and fueling new infections (Bruce, 2010).

In response to this growing crisis, multi-lateral agencies in collaboration with national governments and have scaled up recommendations for a full range of HIV prevention and treatment options for people who inject drugs in sub-Saharan Africa. In 2009, the World Health Organization (WHO) published technical guidelines to help countries set targets for a complete spectrum of care services for PWI (WHO, 2009). Shortly thereafter, the President's Emergency Plan for AIDS Relief (PEPFAR), the largest funding agency for HIV treatment worldwide, published a revised guide for HIV prevention among PWI that supports a broad range of drug treatment and prevention options (OGAC, 2010). While support for comprehensive harm reduction services varies substantially among countries in the diverse region; a number of governments have begun planning for expanded services or have started piloting comprehensive community-based programs. In 2009, Tanzania developed and implemented a national plan for HIV prevention and care among people who use inject drugs, including providing medication assisted treatment (MAT) for opiate dependence through a pilot program (TDCC, 2009). Although MAT, also known as opiate replacement therapy (ORT) remained illegal in Kenya until 2012, the government has begun to plan for future provision of care services for PWID (Nieburg et al, 2011). Modeling estimates suggest that reducing the unmet need for harm reduction and treatment services among PWID in Kenya could reduce 30% of incident HIV infections by 2015 (Strathdee et al, 2010).

As some sub-Saharan countries gain momentum to provide comprehensive prevention and treatment services to people who use and inject drugs, lessons from similar contexts that have rapidly scaled up care can help inform planning and delivery to maximize treatment utilization. In eight years, China expanded care from eight medication assisted treatment clinics to 738 clinics nationwide, encountering persistent challenges retaining clients on methadone (Li et al, 2013). Once out of treatment, heroin relapse rates within the first 90-days can reach 75% (Coviello et al, 2006). A WHO multi-country review with an

emphasis on transitioning and developing countries reported 6-month treatment retention rates ranging from 98% to 55%, mainly due to differences in program design and populations served (Lawrinson et al, 2008). This paper reviews the evidence on programmatic tactics to maximize enrollment and promote retention in MAT programs, focusing on service provision in resource-limited settings. Effective strategies are presented in results, followed by discussion of programmatic implications for the sub-Saharan African context. Findings have relevance for MAT provision as a long term, HIV preventative intervention in resource limited settings to promote the health of all citizens, including people who inject drugs.

Methods

The online data base PubMed and the search engine Google Scholar were used for this review, during the period of March 1- March 31 2013. Search terms included, 'methadone' 'opiate replacement therapy' 'enrollment' 'retention' 'default' 'relapse.' 204 abstracts were reviewed and 35 studies included. Bibliographies were back-checked for relevant resources.

For inclusion in the review, studies had to meet pre-determined criteria. Only experimental and quasi-experimental studies with MAT/ORT enrollment, retention, or dropout as primary outcomes were included from developed country contexts. Inclusion criteria from transitional and developing country contexts were broader, including cohort and cross-sectional studies with enrollment and retention as primary outcomes. Broader inclusion criteria expanded the evidence base, as MAT/ORT is newer and less studied in these contexts and the emphasis of this review is on best practices for MAT implementation in limited-resource settings. Enrollment was operationalized as number of participants who initiated treatment as compared to total people who were offered services. Retention was operationalized, as participants who stayed in treatment over the length of the study, and dropout or default were participants who left treatment before the end of the study period.

Results

Results from the 32 studies included are summarized and grouped under programmatic strategies to maximize enrollment or programmatic strategies to promote retention and prevent default. An alphabetical literature review matrix with study information, outcomes and discussion is included as Appendix I. Some studies explored the effect of individual level factors, such as history of drug use, mental health status, number of children, on treatment retention and default; however these findings are not presented here, as the focus is on evidence-based practices for MAT service provision.

Overall, enrollment in treatment ranged from 33% to 89% of those offered services (Booth et al, 2004, Jones et al, 2011). All interventions offered some type of outreach counseling or case management; however these services varied widely in scope and were often combined with economic incentives. Strategies that helped enroll eligible PWI in treatment services are categorized as either primarily case management/counseling or economic incentives, such as vouchers and free treatment.

Programs and programmatic studies explored a greater range of strategies to promote retention and prevent default. A total of 22 studies reviewed had treatment retention or default as a primary outcome measure. The amount of time for follow-up ranged from 3 months to 3 years. Participant retention in MAT at one-year follow-up ranged from 41.6% in one study in Taiwan to 74.4% in one study in Israel (Lin et al, 2013; Peles et al, 2006). In general, retention peaked at the end of the first month and dropped off over time.

Strategies that promoted retention and prevented default are broadly categorized as: logistical factors (cost, hours of operation, location), dosing (amount and method of administration), support services (case management and counseling) and economic incentives (free treatment, vouchers, and housing).

Effective Strategies for Enrollment: Case Management and Counseling

A range of case management and counseling strategies proved effective in experimental and quasi-experimental designs at increasing enrollment in MAT among people who inject drugs. Of the nine studies that focused on enrollment as a primary outcome, all intervened with some type of case management or counseling. Counseling and case management strategies varied in their intensity and resource requirements. Three studies had multiple arms, comparing brief motivational counseling alone to motivational counseling in combination with economic incentives (Booth et al, 2003; Kidorf et al, 2009 & 2012). The highest enrollment rate, 89%, came from a study with 62 non-treatment seeking opiate using partners of pregnant women, who received intensive support services as incentive to enroll in treatment (Jones et al, 2011). The intervention involved a combination of therapy, case management, and infant/child development counseling to help study participants motivate for treatment. This package of support services was by far the most intensive type of case management and counseling provided among the studies included in the review. On the other end, street-recruited PWID were randomized to receive either brief motivational interviewing plus vouchers for free treatment or risk reduction counseling and a referral (Booth et al, 2003). 33% overall and 60% of intervention participants enrolled and initiated MAT, suggesting that less intensive motivational interviewing is more effective than outreach alone at facilitating enrollment, however in this design it is difficult to isolate the impact of free treatment on people's decision to enroll in care. Havens et al randomized a group of treatment seeking PWI recruited through a Baltimore needle exchange to receive a brief strengths based case management (SBCM) intervention, finding that PWI with comorbid antisocial personality disorder who received more than 25 minutes of SBCM 3.51 times more likely to enter treatment than those who received less than 5 minutes (Havens et al, 2007). This study suggests that brief case management can greatly influence treatment enrollment among PWID with high comorbidity. In contrast, one study with street based sex workers compared enhanced motivational outreach counseling to standard outreach, finding no significant difference among participants who received the intervention (Nuttbrock et al, 2004). Of total participants, 43.1% of current heroin users offered referral and transport to detoxification and medication assisted treatment services enrolled. The high rate of enrollment among participants suggests that nighttime street based outreach proved sufficiently effective without the enhanced counseling.

Two of the studies included in this review employed a randomized prospective cohort design to target people who had previously dropped- out of treatment programs with services to encourage re-enrollment. In one of these studies, former MAT patients were randomized to receive either a passive referral or six weeks of outreach case management (Coviello et al, 2006). After six months, 29% of the intervention participants had re-enrolled in MAT compared to only eight-percent of control (OR=5.8), suggesting that outreach case management supports people to re-enter treatment following relapse. Another study offered a more intensive combination intervention of outreach, individual and group counseling to people who had dropped-out of MAT within the previous 12-months (Goldstien et al, 2002). This study found that the intervention was significant at

facilitating re-enrollment for those who participated in at least 2-or more counseling sessions, with 72% re-enrolling as compared to 50% of the control group (P=0.03, Chi-square test).

Effective Strategies for Enrollment: Economic Incentives

The literature points to economic incentives as the most effective strategy to enroll eligible people in medication assisted treatment services. Economic incentives include vouchers for free treatment and vouchers for restaurants or food stores. Three studies with randomized designs employed multiple comparison arms (Booth et al 2004 and 2003; Kirdorf et al, 2009), the results of each clearly supported economic incentive as a key motivating factor for treatment enrollment. Booth et al in one definitive study randomized street-recruited IDU into one of four study arms, comparing motivational interviewing alone, risk reduction outreach alone, and either interviewing or outreach with a voucher for 90-days free treatment (Booth et al, 2004). A majority of study participants who received the voucher (66%) entered treatment, with no significant difference between those randomized to outreach or motivational interviewing. In another four-arm randomized comparison study, Kirdof et al demonstrated that participants receiving motivated referral counseling plus a small economic incentive to attend support groups, were significantly more likely to enroll in MAT, as compared to standard referral, motivational interviewing alone, and motivational interviewing plus groups.

Effective Strategies for Retention: Logistical Factors

Three studies included in this review analyzed the role of MAT programmatic logistics, such as transport time, clinic hours and staffing, as predictors of participant retention in services (Che et al, 2010; Lin et al, 2010; Sarasvita et al, 2012). Transport time to the clinic proved particularly salient in predicting participant retention and drop out in one study from Yunnan, China and another from Jakarta Indonesia (Sarasvita et al, 2012; Che et al, 2010). Che et al found evidence that participants with greater than a half hour travel time to the clinic were more likely to drop out than those with shorter travel times. Sarasvita et al reported that take home dose as an interaction factor with accessibility of the clinic proved the second strongest predictor of participant retention in two treatment programs in Jakarta, as heavy traffic contributed to clients missing doses and eventually dropping out of treatment. Clinic hours and staffing proved important to retention and number of clients in a six-month prospective cohort study conducted by Lin et al with 28 MAT clinics in Zhejiang and Jiangxi provinces in China. Overall retention for the study was 51.4% (45%- 60% range). The majority (60%) of clinics closed during the noon hour and a third were open less than six hours a day. Clinics that were open greater than eight hours a day and offered two or more comprehensive services had significantly higher retention rates and served more clients than clinics open for shorter days with one or less support services.

Effective Strategies for Retention: Medication Dose

Medication dose strength and mode of administration proved the biggest determinant of participant retention and drop out. Seven studies measured dose as a predictor or factor associated with participant retention in treatment, finding that higher dose leads to longer retention and lower dropout from treatment. One randomized comparative double-blind study from Shiraz, Iran found that 61% of participants in the

methadone group completed the 18-week prospective study, compared with 29% of participants in the low-dose buprenorphine group (Ahmadi et al, 2003). As dose increased, so did retention among the four study arms. Che et al conducted a six-month prospective cohort study in Yunnan, China that greater than 60 mg daily dose of methadone was associated with lower probability of drop out, with 57% of participants retained in treatment by the end of the study period (Che et al, 2010). In a 18-month prospective cohort study in Taiwan, Lin et al found that lower methadone dose at three months increased the risk of drop-out, with 65% of participants prescribed less than 60 mg of methadone per day (Lin et al, 2013). Retention rate at 12-months was 41.6%, with only 32.3% of participants remaining in treatment by the end of the study. In Huizhou, China a prospective cohort study with 1003 participants at eight MAT clinics found that higher methadone dose predicted greater participant retention, with 57% of participants remaining in treatment by the end of the 14-month study (Liu, et al 2009). A prospective cohort study from Malaysia with a small sample size (n=64) followed for six months found that higher methadone dose was significantly correlated with higher retention rate. Of the 45% of participants retained in treatment at the end of the study, 80% were taking greater than 80 mg of methadone daily. The study with the highest retention rate, a one-year prospective cohort study from Israel, found that a daily dose greater than 100 mg of methadone increased the odds of participant retention (OR=1.9), with 74.4% of participants staying in treatment by the end of the study (Peles et al, 2006). Sarasvita et al found that the strongest predictor of retention in treatment at six months was a daily dose greater than 60 mg of methadone (Sarasvita et al, 2012). Findings from a four week, randomized double-blind study in Baltimore, Maryland found that a daily dose of methadone greater than 80 mg significantly reduced the use of illicit opiates, however dose did not effect retention by the end of the study period, perhaps due to the short follow-up period (Strain et al, 1999).

Three studies examined the role of take home dosing in participant retention in treatment. Take home dosing differs from typical dosing, where a client drinks methadone daily at the clinic under provider supervision. In a three-arm, one-year prospective comparative cohort study conducted in Italy, Gerra et al found that the group with six days take home dosing contingent on one month drug-free urine analysis had the highest retention rates at the end of the study, at 74% (Gerra et al, 2011). One group had six days supervised consumption, while the third group had non-contingent take home dose. Diversion of methadone was highest among the third group, and retention was similar among the non-contingent take home and the supervised dosing (50% and 54% respectively), suggesting that contingent take home offers sufficient oversight and freedom to promote treatment adherence. Holland et al employed a similar study design in Scotland, randomizing a small group of participants (n=60) to three study arms, non-contingent six day take home dose, twice weekly supervised and five day take home, and daily supervised dose (Holland et al, 2012). While this study was not powered to make inference, results suggest that retention was highest in the group with twice weekly supervised dosing, with 76% of participants remaining in treatment at the end of the three-month follow-up period. Sarasvita et al conducted a prospective cohort study with three MAT clinics in Indonesia, finding that among clients from two more established urban clinics, take home dose had four times the predictive power of participant retention in treatment as compared to the rural clinic (Sarasvita et al, 2012). Findings relate not only to clinic transport time, with take home dose more effective in promoting retention among clients at urban clinics with heavy

traffic, but that clinics with staff more experience delivering services might be better equipped to judge when a client is ready to stop supervised medication.

Effective Strategies for Retention: Support Services

Five studies reviewed examined the role of case management, individual, group and family counseling on treatment retention. Chawarski et al compared an intervention with a brief drug and risk reduction counseling component to standard of care- methadone plus limited psychosocial support- in two limited resource delivery settings, in Wuhan China and Muar, Malaysia (Chawarski et al, 2008 and 2011). In Malaysia, the small pilot trial with 26 participants found high retention in both groups at the end of three-month follow-up, with only one participant dropping out of treatment. The intervention group was significantly more likely to test negative for other drug use. In the second pilot trial with 37 recent MAT enrollees in China, retention was higher in the intervention group at the end of the six month study period (80% vs. 76%), with a significantly greater reduction in other drug use among those receiving the enhanced counseling. Gu et al conducted a randomized comparison trial with 288 first time MAT enrollees in China, comparing a three phase brief individual and family counseling series administered by clinic staff that addressed misconceptions around methadone in addition to other issues (Gu et al, 2012). Sessions were about a half hour each, and the median attendance was 14-15 sessions out of 20 total. Intervention participants had significantly lower likelihood of attrition (HR= 0.55) and significantly higher median number of days attending the clinic (147 s. 91) during the study period.

Three studies from developing country settings found that family support and misconceptions around methadone treatment played a role in participant retention in program services. Armstrong et al conducted a prospective cohorts operations research study with 2,569 participants from two MAT programs in India, finding that regular family involvement in treatment significantly reduced the chances of relapse (OR=0.2) (Armstrong et al, 2010). In a prospective cohort study with 516 participants from two MAT clinics in China, He et al found that getting along well with family was associated with improvements in physical, psychological and social functioning (He et al, 2011). A prospective programmatic analysis of MAT programs in Vietnam with 965 participants over nine month follow-up found 90% retention in treatment and a significant reported reduction in conflict with family (Nguyen et al, 2012). While support service interventions were not addressed in the research, findings suggest the motivational role that counseling with family can have in helping to promote healthy relationships and treatment retention. Gu et al conducted a 17.6-month prospective cohort study at three clinics in China, with 178 newly admitted clients (Gu et al, 2012). Over half of participants dropped out of treatment before the end of the study period (51.3%), with poor adherence among 62% of those who remained in treatment. Misconceptions over methadone treatment were almost universal, with 98% of the study population had at least one of four misconceptions, and 50% had all four. Misconceptions significantly predicted dropout (HR=7.13 for four misconceptions).

Effective Strategies for Retention: Economic Incentives

Evidence suggests that economic incentives, such as free treatment and vouchers, prove one of the most effective tactics to promote retention in services. Two studies from the US employed four study arms to compare the role of support services alone, vouchers alone, both, or standard of care, finding that vouchers proved the key tactic contributing to

highest retention in services (Barnett et al, 2006; Brooner et al, 2007). After three months, only 40% of the group receiving case management alone remained in treatment, while 90% of participants remained in the two arms receiving vouchers for free treatment (Barnett et al, 2006). Brooner et al found that retention at six months and nine months was highest for the group receiving contingent voucher incentives. One randomized comparative study from China looking at motivational incentives in the form of a lottery among participants at five MAT clinics found that results varied by province (Hser et al, 2011). The incentive significantly increased retention in the poorer province (75% retention vs. 44%), while no significant effect on retention was observed in the comparatively wealthier province. A comparative, three year prospective cohort study in New York offered housing contingent on treatment to a group of mentally ill heroin dependent participants, finding that the group offered housing was significantly more likely to remain in outpatient treatment at the end of the study (56% v. 20%; $p=.02$) as compared to the group offered outpatient services alone.

Discussion

Results from this review suggest several evidence-based practices that could apply to sub-Saharan African service delivery settings to help maximize enrollment and retention. For enrollment, free treatment seems to be the most effective incentive to enter care. However, for programs operating under constrained economic resources, free treatment might not be feasible. Alternately, brief counseling and outreach services provided to people who inject in street settings, helped bring in almost half of people offered treatment into care (Booth et al, 2003; Nuttbrock et al, 2004). Outreach and brief counseling might be more financially feasible than free treatment, while proving effective to link PWID to care in studies from the US. Training guides for to provide outreach and harm reduction education are freely available through the World Health Organization and the US National Institute on Drug Abuse (WHO, 2004; NIDA, 2002). Research around enrollment strategies and community based outreach to PWID from developing countries remains a gap in the literature, with most studies focusing on treatment provision once participants were enrolled in services, rather than describing outreach tactics or enrollment incentives (Needle et al, 2005). However, evidence from India suggests that community based outreach, such as bleach kit distribution and safer injecting education, can help to reduce the risk among PWID and could serve as a model for outreach to connect PWI to care services (Hangzo et al, 1997).

Evidence points to higher dosing as the key programmatic element to retain participants in treatment. Studies and programmatic evidence from a variety of transitional and developing country settings demonstrate that higher dosing, between 60 mg- 100 mg of methadone per day, correlate with longer duration in treatment and lower drop-out (Fareed et al, 2010). Increasing dosing is an effective and simple strategy to maximize retention in care, requiring no additional investment in staff time or clinic operations. Research suggests that provider misconceptions and lack of training in methadone administration, due to rapid and recent introduction of MAT, might cause low dosing in China and similar contexts (Li et al, 2013). Identifying a dose that is strong enough to prevent concurrent illicit opiate use proves essential to programs in contexts where providers might be new to methadone treatment. Extensive provider education might help to overcome any reluctance to administer high doses. Conversely, patient education around methadone and dosing can help address any barriers on the recipient side. Studies from

China document a high prevalence of patient misconceptions and their relationship to drop out, showing that many patients feel that methadone is short-term treatment and that higher dosing can prolong addiction (Liu et al, 2013;). A small, qualitative study from the US revealed similar misconceptions, with patients expressing fear that a higher dose might get them too high or prevent recovery, rather than seeing higher dosing as a long term intervention to prevent relapse (Sanders et al, 2013).

In urban settings in sub-Saharan Africa, take home dose could play a key role in promoting treatment retention. Traffic in many cities means hours in daily commutes, as roads were not built or upgraded to support recent surges in car-ownership and urban population growth. For long-term treatment, take home dose frees up commuting time and can help prevent relapse. Particularly for people who are on treatment for a year or more, daily commutes to the MAT clinic can prevent them from employment or attending school. Contingent take home dosing criteria can help prevent diversion of methadone and increase adherence, for example requiring a number of months of clean urine or daily supervised consumption before take home privileges (Kakko et al, 2003).

Support services, such as individual and family counseling, could be a particularly relevant best practice for the African context. The brief behavioral drug and risk reduction counseling intervention piloted by Charwarski et al in China and Malaysia proves promising for similar contexts, where providers specializing in social work or psychology might be in high demand (Charwarski et al, 2008 & 2011). Supervisors can be centrally trained to administer the 30-minute sessions, taking lessons back to other providers in rural areas or to small community based facilities. Similarly, the family intervention Gu et al conducted in China could be effective as a best practice in the East Africa context, where families often reside in multi-generational homes and the family is the central source of support for the individual (Gu et al, 2013). A recent study from Kenya concluded that interventions to promote drug use cessation among youth must involve the family and community, in addition to more standard approaches to treatment (Embelton et al, 2013).

Conclusion

This paper summarizes best practices to maximize utilization of medication-assisted treatment programs for people with opiate dependence, as part of a comprehensive plan to prevent and treat HIV among people who inject drugs. Despite ample evidence supporting the physiological benefits of MAT, enrolling and retaining participants in treatment can prove challenging. Investment in outreach, higher dosing, and support services can help maximize limited resources by keeping people in care and preventing relapse; thus reducing HIV incidence. As governments in sub-Saharan Africa consider implementing comprehensive HIV prevention and treatment services for injection drug users, with modeling suggesting that changes in policy and practice can have significant impact in reducing new infection, best practices for service delivery will help maximize the impact of comprehensive care.

Transition Paper 1:

From General Best Practices to the Experiences of Women in MAT in Tanzania

In Dissertation Paper 1: Paper 1. Evidence Based Best Practices for Medication Assisted Treatment as an HIV-Prevention Intervention: Implications for Sub-Saharan Africa, I reviewed the literature on enrolling and retaining participants in medication assisted treatment, with an emphasis on programs in transitional and developing countries. The systematic review of evidence-based practices identified a number of key programmatic strategies to maximize utilization of services. Namely, the evidence supports enhanced street outreach to enroll PWID in treatment, providing adequately high doses to help keep people on methadone over time. Providing the maximum psychosocial services that are financially possible further supports clients to stay in treatment. The review highlighted programmatic evidence drawing as much as possible from research in the Global South.

This next paper narrows the scope of research from a broad review of best practices, focusing in on one particular treatment program, and engaging original material gathered through interviews and observation with staff and clients at the MAT clinic at Muhimbili National Hospital. Pre-dissertation and dissertation research was conducted over three field visits, ranging from one and a half to two months each, from July 2011 to February 2013. Research occurred at outreach sites and at community-based organizations that offer support services to clients in MAT. The focus of the ethnographic approach was on understanding the experiences particular to women in treatment, including needs for support services and primary concerns in recovery.

The literature review highlighted the lack of evidence from developing and transitional countries regarding women's experiences with addiction and treatment. Many articles included in the review had negligible numbers of women in the study or program of interest, making it impossible to draw conclusions about best practices specific to women (Armstrong et al, 2010; Chwarski et al, 2008; Gu et al, 2013; He et al, 2011; Lawrinson et al; 2008; Mohamad et al, 2010). From the evidence presented, it remains impossible to know why there are so few women in the cohort studies. Without research with women who inject, these questions remain impossible to answer. Given the different cultures and histories in sub-Saharan Africa and Central Asia as compared to North America and Western Europe, its impossible to know if findings from the regions hold true cross-context.

The second paper in this dissertation seeks to contribute to the formative body of research on women's experiences as people who inject drugs and seek care to overcome their dependence in the Global South. Specifically, the second paper hopes to develop understanding from the perspective of women in the first medication assisted treatment program in sub-Saharan Africa, with the intention that findings can help improve care for women in that program and in similar programs in the region. Particularly given increasing interest from major HIV/AIDS funding sources and international guidance bodies in investing in comprehensive care for PWID, this research hopes to add to the implementation science on enrolling and retaining women who inject in harm reduction services. Ensuring that programmatic strategies address the different needs of women and men who use and inject drugs will help to meet HIV prevention goals. Failure to critically analyze the role of norms around gender and sexuality in shaping treatment experience could mean failure to design and implement programs that speak to women.

Paper 2:

***“Standing at a Crossroads”* Understanding the treatment experiences and ongoing service needs of women in Medication Assisted Treatment in Dar es Salaam, Tanzania**

Background

In Dar es Salaam, Tanzania, HIV prevalence among people who inject drugs (PWID) has reached crisis proportions, with more than half of women who inject estimated to be living with HIV. Research estimates that 42% of PWI in Dar es Salaam are living with HIV (Williams et al, 2009), compared to an estimated 8.8% prevalence in the general urban population (TACAIDS, 2013). Gender inequities create greater vulnerability to HIV among women throughout sub-Saharan Africa in complex ways, with young women shouldering the highest burden of disease across the region (UNAIDS, 2012). Among women who inject drugs in Dar es Salaam, these same economic and social inequities contribute to gendered risk taking behavior, with many women relying on sex work as a primary form of income to fund their drug use (Williams et al, 2007). Consequently, HIV prevalence among women in Dar es Salaam who inject drugs is estimated at more than double the prevalence among men who inject, 64% vs. 28% (Williams et al 2007 and 2009; Timpson et al, 2006; Ziler et al, 1998). Reaching women with comprehensive HIV prevention and treatment services, including medication assisted treatment (MAT) for opiate dependence, is urgently needed to improve their health and prevent ongoing transmission.

The government of Tanzania, with support from external agencies, implemented a comprehensive approach to address the dual epidemics of drug use and HIV in 2010, establishing the first medication assisted treatment program (MAT) in mainland sub-Saharan Africa. Despite success implementing and coordinating a cascade of harm reduction services culminating in methadone, women who inject utilize outreach and treatment services much less than their male counterparts. Modeling estimates suggest that about a third of PWI are women, yet women constitute only 8% of MAT clients (Lambdin et al, 2013). Inequities in service utilization are recorded at every stage in the continuum of care, from outreach, to enrollment, to treatment retention. Understanding gendered differences in experiences for women and men who inject drugs in Dar es Salaam, can help tailor services to reduce the disparity in utilization.

Challenges enrolling and retaining women in drug treatment services are not unique to Tanzania. Evidence from a variety of contexts suggests that women and men face different hardship and challenges in recovery, creating distinct needs for support services (Eiroa-Orosa, 2010; Greenfield et al, 2007). Women with histories of addiction are more likely to have survived sexual violence than men with similar drug dependency (Walton et al, 2011). Socially gendered experiences such as family roles, domestic responsibilities, economic opportunities, and societal stigma often disadvantage women in their fight for recovery (Greenfield et al, 2007). Little research exists to shed light on the experiences of women in treatment in developing country contexts, where constrained resources and stronger patriarchal cultures might pose additional barriers to women’s treatment. Methadone programs in similar epidemiological and economic contexts enroll women in such low numbers it is difficult to analyze disaggregate data in a meaningful way (Armstrong, 2010; Gu, 2013; He, 2011). Research with women not in treatment who inject drugs in Dar es Salaam suggests that they experience greater vulnerability and are more likely to be homeless than men who inject drugs, (Mcurdy et al, 2010; Williams et al, 2007).

This formative qualitative study seeks to situate women's experiences in treatment within the complexity of their recent past experiences as injecting drug users and their current challenges in healing and recovery. Relying on observation of program activities and in-depth interviews with service providers and people who formerly injected drugs, this study offers rich accounts from the perspectives of people in treatment about ongoing needs. Findings hope to identify areas for further programmatic development to better support women as they navigate healing journeys and struggle to establish healthy, full lives.

Methods

Program Overview

A consortium of governmental and non-governmental partners supports the Medication Assisted Treatment (MAT) Clinic, located at Muhimbili National Hospital and operated through Tanzania AIDS Prevention Programs (TAPP) as part of the national plan to prevent and treat HIV among people who use and inject drugs. The Tanzania Drug Control Commission in partnership with the Tanzania Ministry of Health and Social Welfare, and with technical support from Muhimbili University of Health and Allied Sciences, Pangaia Global AIDS Foundation and the University of Texas, oversee implementation of the full range of harm reduction and treatment services. Funding for the MAT program comes in part through a grant from the US Center for Disease Control (CDC) through the President's Emergency Plan for AIDS Relief (PEPFAR). Four non-governmental organizations- Kimara Peer Educators, Blue Cross of Tanzania, Center for Human Rights Promotion (CHRP) and Youth Volunteers Against Risky Behavior (YOVARIBE)- collaborate with the clinic to provide a comprehensive range of community-based support services. Using harm-reduction outreach and education strategies, workers at one of the four NGOs located throughout the city help enroll PWI at the MAT clinic. Once enrolled in the program, MAT clients present daily for directly observed treatment, receiving continued counseling services through the NGO that facilitated their recruitment into MAT.

Study Participants

19 former PWI currently enrolled in MAT participated in interviews, 13 women and six men, out of a total of 600 people in treatment. Clients were purposefully sampled for variation. Women were over sampled as their experiences are the focus of this study. Time in treatment ranged from two weeks to two years. Two men and one woman MAT clients were also peer community outreach workers (COW). Clients from all four NGOs participated in the study. All demographic information presented in results was extracted from interview data.

Service providers from TAPP, Kimara Peer Educators, Blue Cross of Tanzania, CHRP and YOVARIBE were purposefully sampled for range of experience. Six service providers- two nurses, one program coordinator, one social worker and two outreach supervisors- took part in interviews. Two service providers were men and four were women.

Data Collection

A grounded theory approach guided data collection and analysis (Corbin and Strauss, 2008; Charmaz, 2009). B. Mahenge, a clinical psychologist and public health researchers, conducted the 24 of in-depth interviews in Kiswahili. S. Zamudio-Haas, the author of this study, conducted one interview in English with a service provider, the program coordinator.

All study participants had the option to interview in either English or Kiswahili and while many participants are bilingual, almost all preferred to interview in Kiswahili. Two semi-structured open-ended guides, one for PWI and one for service providers, were written in English and translated into Kiswahili by a person not otherwise involved in data collection (see Appendix II- V). The MAT program director (J. Mbwambo) checked translations for accuracy. Interview guides for PWI explored history of drug use, harm reduction service utilization, health concerns, impacts MAT participation has had on their lives, and ongoing needs. Interview guides for service providers explored their experience with harm reduction service provision, the challenges and rewards of their work, perceptions about different service needs among men and women PWI, and ideas for improving service delivery.

Each interview involved a participant, an interviewer, and a note taker. The note taker (S. Zamudio-Haas) is not fluent in Kiswahili and observed and documented appearance, body language and interpersonal dynamics. The note taker and interviewer debriefed for a half hour to an hour following interviews, identifying areas for clarification via follow-up in future interviews, discussing particularly salient topics, comparing interview data to emerging themes and noting any new information that either reinforced or questioned developing theory. Debriefing informed subsequent data collection in accordance with a grounded theory approach. Interviews ranged in length from 45 minutes to an hour and forty-five minutes, with the majority of interviews lasting an hour.

Direct observation of outreach activities occurred at 12 outreach sites. Community outreach workers and peer outreach workers from Blue Cross, Kimara Peers, YOUVARIBE and CHRP conducted the outreach. The author accompanied outreach workers during their neighborhood rounds, lasting anywhere from two to four hours. At each site, the senior outreach worker from the NGO conducting service delivery and a peer community outreach worker acted as key informants and interpreters. Observational data was captured via note taking on setting, individual behavior, group dynamics, number of people present, and logistics. Notes included a sketch of the service delivery settings and key comments from informal conversation.

Data Analysis

One principal coder, S. Zamudio-Haas, collaborated with B. Mahenge to identify and understand emergent themes. Two interpreters not otherwise connected with the study transcribed and translated audio recordings into English as soon as possible following interviews, facilitating simultaneous analysis and data collection. B. Mahenge reviewed translated transcripts for accuracy. Notes from observation of program activities were typed from the field notebook the same day they were collected, with questions and comments to inform subsequent direct observation. Initial line-by-line coding of transcripts culminated in a standard codebook, with a definition, inclusion and exclusion criteria, and an example for each of the codes (MacQueen, 1998). The final Standard Codebook is included as Appendix VI. Codes fit into three analytic categories, the first and last of which are salient interview quotes: *Junkie Gets No Love*, *Service Provision and Utilization*, and *Standing at a Crossroads*. Memos, written same day as data collection and at each stage of the analysis process, facilitated constant comparison and helped saturate understanding of conceptual categories. Triangulation of data, from providers, clients and observation of program activities, offered multiple perspectives on similar phenomena, enriching understanding and increasing the validity of analysis.

Ethical Approvals

All individuals who participated in interviews offered informed verbal consent and received a copy of the consent form. The organizations that participated in the research offered letters of support for the research. Ethical approval was received from the Committee for the Protection of Human Subjects at University of California, Berkeley and from the Research and Publications Committee at Muhimbili University of Health and Allied Sciences.

Results

Table 1.0 MAT Client Interview Participants

MAT Study Participants	Total MAT Participants	Married or Cohabiting	Parent to ≥ 1 child	HIV Status			Violence Survivor	
				+	-	?	Sexual Violence	Physical Violence
Men	6	3	4	0	6	0	0	3
Women	13	8	9	6	3	4	5	5

Participant Overview

At the time of the interviews, study participants who formerly injected drugs and currently are in medication assisted treatment ranged in age from 25 to 37 years old. Time in treatment ranged from two weeks to a little over two years. Three of former PWI currently work as peer community outreach workers. Ten MAT participants, eight women and two men, were married or cohabiting at the time of the interview. Five study participants' husbands, although none of the wives were also enrolled in MAT. A majority (13/19) of MAT study participants were parents, with between one and four children. Four out of six men and nine out of 13 women were parents at the time of interviews, one woman was pregnant and one man's wife was pregnant. Three of the 13 parents had one infant die. Six participants shared that they are living with HIV, nine shared that they are not living with HIV and four did not disclose their HIV status. All of the participants who disclosed that they are living with HIV are women. Five women recounted experiences of rape and sexual assault. Five women described surviving intimate partner and family physical violence. Three men recounted surviving physical violence, either at the hands of family in their youth and in two cases violence perpetrated against them in retaliation for perceived robbery.

The six study participants worked at either the MAT clinic or one of the four partner NGOs. Training background varied. One outreach supervisor had been working with PWI since 1995 and had worked as a research assistant on a number of previous studies. The two medical practitioners, both nurses, had background in psychiatric care before coming to work at the clinic. The social worker previously worked with one of the NGOs counseling people living with HIV. Another outreach worker recently began working with PWI, starting as a volunteer outreach worker, eventually being promoted to a senior position.

Past Experience: Stigma and Social Isolation

Service providers and clients both described intense social isolation and familial abandonment as characterizing life for people who inject drugs (PWI). In interviews PWI recounted their husbands and wives leaving them, taking their children away to prevent neglect. Eventually, most either left or were thrown out of their family homes, retreating to

the *dago* and *vijiwe*, open public spaces and more secluded hang outs where people go to use and inject drugs. MAT clients described the hurt feelings they experienced when their families and neighbors shunned them, locking doors and hiding belongings when they came near. In the quote below, one participant summarized a commonly expressed sentiment:

“My whole family cast me out. Where ever I went they would ask each other to close the doors. ‘She will just steal now’ they would say, ‘She is here.’ So when they saw me they would pack their items aside and put them away and that would make me feel sad” – Women in MAT

At the same time, both PWI and service providers acknowledged a desperation that leads people with opiate dependence to steal from family and strangers alike to obtain money for drugs. Across the board, men and women in treatment talked about robbing and stealing to get high as their former way of life. One participant painfully described threatening to hurt her infant son to coerce money from her husband. A woman in the quote below shared remorse after robbing her sister, exemplifying a cycle of desperation and regret described by many in interviews.

“So once I feel better, that’s when I would start to feel bad about what I just did and think, ‘Why did I just take her thing’ but before I get high its like my whole thought process is completely different” -Women in MAT

Participants currently in treatment talked about intense loneliness that both fueled their desire to get high and resulted in part from the cruel actions they took to stay high, which helped to drive away family and friends. Drug sickness- the physical symptoms of withdrawal such as fevers, chills, vomiting and painful joints- looms only a couple of hours a way for those chemically dependent on heroin. To stave off the sickness and satisfy craving, interviewees recounted doing anything in their means to buy their next fix, only to live now with the painful memories of their past actions. In the quote below, one of three mothers who infant died while she was injecting drugs described a deep pain resulting from neglecting her children that many parents expressed in interviews.

“After the death of my child, it was like it opened a gate for me. The drugs have really affected me; I can’t even talk about it. It gives me so much pain in my heart. First what is painning me is the way I left my children. The way I abandoned them. I was just smoking, shooting: doing things that aren’t sensible” –Women in MAT

Mothers and fathers alike described an understanding about why they lost custody of their children when they were injecting, yet they also expressed extreme suffering over the loss of custody. The singular obsession on getting and staying high took over their lives, leading them to neglect themselves and their loved ones. Simultaneously, their behavior while injecting led their loved ones to reject them and take away their children. In Tanzania, the family rather than the state intervenes to decide child custody. In interviews parents described how grandparents, aunts, and the other parent would take custody of the children, forbidding the PWI from spending time alone with the child if relatives saw the potential for neglect.

Rejection and ridicule came from strangers and service providers, in addition to family and friends. PWI recounted people on the street pointing fingers at them, laughing at the unkempt appearance that often accompanies addiction. A few participants recounted experiences where they are blamed for theft when they were not the culprits, receiving the typical mob justice beating inflicted on suspected robbers in public space in Tanzania. Other participants described discrimination at public medical centers, where PWI are pushed to the last of long lines of people waiting for care, as summarized in the quote below.

“If people know you’re a drug user, well you’ll receive the same services you came for, but not without some trouble. The attitude is, ‘S/he’s a junkie. Don’t bother with him/her.’ I mean, like if you’re a thief and you got beat down trying to steal something, when you go to the hospital they probably wouldn’t assist you until everyone else has been attended to” -Women in MAT

Clients and providers alike noted that women bare the brunt of stigma and rejection, receiving dual discrimination for being perceived as both sex workers and drug users. In interviews participants cite a double rejection, making it harder for women to regain respect from their families when they are in treatment and fueling a deep shame that some reported prevents women from seeking care services. Participants described women receiving greater rejection for transgressing strict societal gender norms that offer comparatively more latitude to men when it comes to imbibing, sexual promiscuity, and neglecting domestic responsibilities.

Past Experience: Commercial Sex Work

A majority of women MAT clients interviewed (12/13) described past sex work to fund their heroin dependence, a way of earning income that left them vulnerable to physical and sexual assault and increased risk for HIV transmission. Some women described uniting together to reduce their risk of violence and assault while engaging in sex work, *tunaenda rodi* (going to the road), a common phrase for sex work, together. Yet even at the *dago* and *vijiwe*, secluded hang outs populated by people using drugs, women were often beaten and robbed for the money they earned in sex work by men who use and inject drugs. Women described living in *magetto* (from the English word ghetto, slang for a run down apartment and drug using space) separate from men, where they were felt safer. The quote below is representative of the desperation for money that drove women to sex work, in spite of known risks to their safety, a sentiment described by many in interviews.

“When I had no money, I sold my body to buy drugs. There are some men that beat you up after the sex act and take their money back. There are a lot of challenges that prostitutes face, some are beaten by their customers and some are not paid after sex. Such things happen.” –Women in MAT, former sex worker

Engaging in sex work specifically for money for heroin brings greater risk of HIV transmission, as many women reported compromising their safety depending on how bad they needed to get high. Men and women in MAT described customers who would pay more than double for sex without a condom. For some women, the quick cash out weighed the risk of disease transmission, especially if it meant they could stop working for the night. One woman who has been living with HIV for many years looked back at having unprotected

sex with clients as reckless, recounting with pain her fears that she might have passed the virus on to others. The quote below expresses a common risk-taking scenario that came up in a number of interviews with MAT clients.

“Sometimes you might be so sick and in desperate need of a fix and a john might come up and say he wants to have sex with you with no rubber and he’s willing to pay 20,000 Tsh and you think, ‘I could get 20,000 Tsh from him right now. It’s better to just do this and get the 20,000 Tsh instead of waiting for the condom users who will only pay 3,000 Tsh a pop. I might as well take the 20,000 and call it an early night and then that’s when you end up catching some disease...” –Women in MAT, former sex worker

Many clients in MAT and service providers notes sex work made women the primary breadwinners in their relationships, a dynamic that reversed the traditional Tanzanian roles for men and women. Male partners depended on women sex workers for money to get drugs, a much more lucrative occupation than the side jobs available to men who used drugs. Women shared how this role reversal often caused conflict, with men becoming angry and starting fights if women staid out later than expected or brought home less money than anticipated. Service providers noted that this type of power balance, with women making more money than men in the household, turns typical Tanzanian family structure upside down. While a few service providers pointed this out as a source of strength for women in treatment, offering experience running their own successful business, women in treatment made a point of highlighting that now they rely on their romantic partners for money, with sex work a shameful thing of the past. Yet service providers offered conflicting information, describing how many of their MAT women clients continue with sex work, as it’s one of few opportunities to earn income. A woman in treatment openly described her continued reluctant reliance on sex work for cash, a practice that she hides from her romantic partner who she lives with.

“Honestly sometimes I do go to the streets, but rarely. And its just because I don’t have a job, so there are days when I go out there. My partner doesn’t know about that. I do it in secret. I sneak out and go do what I need to do.”-Women in MAT, sex worker

While women in MAT presented their current love relationships as more traditional, with men supporting them as the family breadwinner, MAT service providers talked about their client’s romantic relationships as transactional. Providers linked this current practice they observe with their women clients having multiple, casual relationships to a history of sex work, noting that women in MAT continue to exchange sexual encounters for economic compensation. Providers described that women clients frequently have multiple concurrent relationships, anywhere from five to ten, with each man covering a different economic need. For example, one provided transportation to treatment, another helped with food, yet another gave money for her children’s school fees. Women in MAT described this support as a sign of love; providers described it as transactional and unstable.

Past Experience: Surviving Violence

Women in treatment recounted painful histories of sexual and physical abuse, perpetrated by a range of men in their life. Study participants recounted surviving violence at the hands of family members, romantic partners, sex work clients, and police. A few men also describe surviving physical abuse. One man recounted violence perpetrated against him as a child by a community adult, while two others described mob violence in response to robbery. Women in treatment came up against a different kind of violence than mob violence; a gender-based violence, which has shattered some of their intimate relationships and fostered fear.

Most of the physical violence women recounted, reported by five out of the 13 women interviewed who are in treatment, occurred at the hands of family. Women described violent fights with their partners erupting over money or drug use. One woman recounted how her boyfriend hit her and slammed her against the wall after his brother accused her of stealing. Another told how her nephew beat her until he dislocated her arm, justifying his actions as punishment to deter her heroine use. Rarely did study participants share about childhood abuse, although one participant described the physical terror her father inflicted on her until he passed away.

MAT clients and providers attested that sex workers frequently endured horrific sexual and physical violence. Five of the 12 former sex workers recounted incidents of sexual violence that they survived. Four other women recounted in detail sexual assault that female friends had endured while working in street-based prostitution. Two women described being raped by two or more men at once. Still others recounted stories of clients and sex workers agreeing on a given sex act, then forcing another that the women would not consent to, such as anal sex. In the quote below, a woman described gang rape, a frequent assault against sex workers corroborated in a total of seven interviews with providers, men in MAT, and other women in MAT.

“Sometimes you agree on a price and you go to a hidden place and to your surprise you will find more men, some will suck your breasts, some will penetrate your anus, some will ejaculate on your face. It’s like that and if you don’t cooperate with them, they will beat you up and they take you to far away places you don’t know where they drop you after finishing their evil deeds.” –Women in MAT, former sex worker

Providers and men and women in treatment shared that sexual violence typically goes unreported, because women feared retaliation from the police or worried that their testimony would not be taken seriously. Women described how police sometimes forced sex on those suspected of prostitution, threatening to arrest them if they resisted. The quote below summarizes an experience described by a few other women interviewed, and affirmed in interviews with men who had heard about or witnessed similar sexual assault when they were living on the street.

“It happens when a customer is forcing you to have sex without a condom. That happened to me. You get hurt that way. You just keep quiet. We were sometimes arrested by the policemen. Some may even want sex as a bribe. I have experienced that too.” – Woman in MAT

While no women or men in the treatment program shared in interviews that they were currently in abusive relationships, service providers attested that a few of their clients struggle with domestic violence. One service provider recounted an incident where a woman in MAT presented with a black eye. In these cases, the service providers will intervene and question the perpetrator and if he is also in treatment, he will face sanctions. A woman in MAT referenced this widely known policy during her interview, sharing that her boyfriend knows if he were to get physically abusive with her, he would face repercussions, alluding to the fact that without outside moderators, his anger could result in violence.

Current Challenge: Reuniting with Family

Both men and women in treatment described reuniting with family and rebuilding relationships as an essential element of their recovery. Throughout interviews, participants who formerly injected described with pride signs that they are regaining trust from parents and siblings. Some talked about small tests, where family leaves them alone and then check if anything has been robbed. One man who had been on and off drugs a number of times over the past 15 years shared that at first he did not even tell his family he was in treatment, instead waiting until the weight gain and new upkeep of his appearance testified that he had truly stopped heroin injection. In the quote below, a woman described signs that she and her family have begun to mend the distance that grew between them during years of drug abuse, yet she also suggested that there is still a ways to go towards renewing trust. This sentiment that things are better, but still healing, came up throughout interviews with clients and providers.

““They are hopeful. They are beginning to believe that I have changed a little bit and the situation is a little bit better. So they are encouraged. They trust me more. They leave me the keys to the house, the keys to the drawer, and they leave me with some money to use. So the trust is renewed to a certain degree. Before they didn’t trust me because they knew that I was doing drugs so I had already lost their trust” -Women in MAT

The majority of MAT clients who are parents (13/19) described reconnecting with their children and regaining custody as the backbone of their current and future aspirations, with women encountering greater obstacles in this process. Men and women in MAT recounted a desire to care for their children and be a good parent as a principal motivating factor to start and stay in treatment. This process seemed smoother for men in MAT as compared to women, as most women shared that while they see their children more now than when they were injecting, most women’s children still reside with other family members, often far off in their rural village of origin, rather than with the women in MAT. In contrast, a number of men described that their wives and children returned to them after they entered treatment. In the quote below, one man recounts how he and his wife have reunited since he has been in MAT, with the help of a social worker.

“The social worker helped me with my family issues, they talked to them and they agreed to support me. The family can support with food, transport, and company. We get along very well now. I now have the love that I never had before. Some people will be frustrated if they’re all alone in matters like this. My wife came back to me and I also have a job now” –Man in MAT

Clients in MAT described a lack of economic opportunities for women as compared to men in treatment as one of the barriers preventing women from spending more time with their children and reuniting with their family. A majority of women interviewed (8/13) report living with their husband or boyfriend, relying on him for food and shelter. A number of mothers in MAT note that without their own income, they do not have the resources to travel to see their children, pay for their children's schooling, or invite their children to move in with them. In Tanzanian cultures, it is unusual for women to bring children from another relationship to live in the home with their current partner. The quote below summarizes this tension expressed in a number of interviews with women, feeling that their lack of income prevents them from seeing and caring for their family.

"I need to be able to feed my children and myself because sometimes I don't even have the bus fare to come to the clinic. My partner has his job here and everything and when he gets his check he'll look after his kids, but he cant give me 20,000 Tsh. for the bus ride to go and visit my kids. From the time I've been in this program I have had no idea how my children are doing" –Woman in MAT

The double stigma against women in MAT as former sex workers and drug users poses additional challenges to reuniting with their family. Families have a harder time forgiving women's transgressions as neglectful parents as compared to forgiving men. One woman recounts how her family has never spoken to her since the death of her infant, blaming her drug use on the baby's death even though she was on methadone, the standard of care for pregnant woman with opiate dependence, before the baby died. Support from family is a key part of success in this MAT program, as the clinic cannot provide for the clients' food and shelter. If women are not welcomed back into their family homes, providers note that isolation can increase risk of relapse and decrease the chance that women would begin treatment in the first place.

Current Challenge: Struggling to Make a Living

Lack of finances came across as the most pressing need for people interviewed in treatment. Women and men clients described at length the difficulties they encountered trying to support themselves and their families while in treatment, coming up against continued stigma as former drug users when they seek out work. Most talked about living on little income, at times lacking sufficient food, and struggling to pay for transport to and from the clinic every day. Many clients shared that their extended families work hard to barely get by, feeling as though the support they get from their families while they are in treatment adds an additional burden to already strained household budgets.

Across the board, interview participants attested that men have more opportunities to make money while in treatment than women. Both clients and providers described earning income and keeping a job as a sign of success for men in recovery. Clients who were thriving in the treatment program received the opportunity to work for the program, maintaining the garden and helping with repairs and maintenance around the clinic. This work was described as better suited to men's abilities. While a number of service providers noted plans to expand vocational opportunities for women, currently most of the work opportunities in treatment are for men. All but one of the men interviewed were in relationships and spoke of supporting their female partners. Three were married, one has plans to marry his girlfriend soon, and one other has a long-term girlfriend. Men in MAT

spoke with pride about supporting their wives, girlfriends and children, often linking this financial support to successful recovery. This quote below is emblematic of a storyline expressed by a number of men in interviews.

“I was fine with buying heroin instead of milk for my baby, but I am grateful now that I can go without anything for myself to take care of my child. I love my wife again and I have bought the household items, so I am really grateful.”- Man in MAT

For women, many of who supported their families when they were formerly engaged in sex work, the struggle to earn income outside of sex work proves daunting. Few work opportunities exist for women outside of small, entrepreneurial businesses such as hair styling, sewing, cooking, or cleaning and these ventures require capital for start up. The temptation to return to sex work to earn money to support themselves and their families is strong, even though many women and providers noted that shame makes it hard for women to engage in sex work without the euphoric distance of a heroin high. In the quote below, one woman adeptly links her lack of income to her inability to care for her children, noting the pull of the streets even though she knows that sex work might lead her back into drug use. This catch 22- where family support is necessary for healing yet earning money to help reunite with family through sex work can lead to relapse, came up in many interviews.

“As far as my own situation I still feel like I’m struggling because even if I said, ‘let me bring my family to come and stay with me’ it could come to a point where I can’t feed my kids and I might even end up going back to the same places I used to be, even though I’m in treatment. I might go back to those same streets trying to get money because I don’t have any income and I might end up right back in the same crisis, but if I had some kind of work to occupy me that wouldn’t happen. I would know what to do to maintain” – Women in MAT

Providers and clients alike connected a lack of employment opportunities to a heightened risk of relapse. Without work or children at home to care for, MAT clients face a long day that lacks a sense of purpose. Providers and clients described that MAT patient’s daily routine revolved around getting to the clinic, drinking their dose, and getting home, with idle time after taking the dose. One provider summarized that for many, home is not yet a welcoming place, so some MAT clients returned to their friends in the *vijiwe*. The quote below expresses a sentiment that came up during interviews with both MAT clients and providers.

*“Once they start methadone they go to the clinic, take their drug in the morning and then the whole day, where do they go? Some are not employed. They go back to their peers, within the *vijiwe*. And this is where they are tempted to add a small bit of heroin, do this or that. What we are saying is if we had an opportunity to tell a person come back from methadone in the morning, go somewhere different, a different situation, hangout with peers who are already on methadone, do something productive. This could really help them from going back to the old *vijiwe* and from relapsing” – MAT Service Provider*

In interviews, providers and clients identified a need for vocational training or work opportunities as a pressing concern. For women in particular, the temptation to return to sex work and the need to support their children links the risk of relapse to lack of economic opportunity. Women described regaining custody as their first priority, and yet without income, this dream remained unattainable for all nine of the mothers who participated in this study.

Discussion

This study presented observational data and interviews conducted with service providers and clients in the first medication assisted treatment program for heroin dependence in sub-Saharan Africa, exploring client's experiences before treatment and their ongoing struggles in recovery. In depth interviews revealed the marginalization, rejection and vulnerability people who formerly injected heroin experienced while using. Combining with an urgent and insistent need for heroin, desperation to get high led clients in MAT to rob family and strangers alike. Most women interviewed engaged in street-based sex work, despite risks to safety from sexually transmitted infection and assault. Women in particular experienced a constant vulnerability to violence while dependent on heroin. A majority of women interviewed (10/13) had survived sexual assault, intimate partner violence, or both while they were injecting heroin. Unfortunately, the horrific violence that women in this MAT program survived as street-based sex workers echoes reports from women in drug treatment in other contexts.

While community based organizations that partner with the MAT program at Muhimbili National Hospital offer group and individual counseling, more support services are needed for women in treatment. Women-only groups, addressing past trauma specific to women, have been shown to help women stick with recovery and move forward with their healing. Women- run or peer run groups can help women process the feelings that they carry as survivors. While ample evidence suggests individual cognitive therapy is effective in helping women heal from past sexual violence, group therapy has also been shown effective (Ashley et al, 2004). Group therapy carries the benefit of reaching multiple women at once, making the most of program resources. Two group interventions for women survivors of sexual violence were tested in a randomized comparative study in a variety of out patient treatment settings in the US, finding that both interventions improved mental health outcomes for women and one, Seeking Safety, also contributed to a drop in substance use (Hien et al, 2004).

Additional outreach and family counseling for women clients in particular could help build a base of support in treatment. Comparative analysis of interview data from women and men heightened the greater difficulty that women have experienced being welcomed back into the extended family network. While in general clients in the MAT program described rapid reunification with family and enjoyed support in their treatment, women seem to be more stigmatized as sex workers and drug users, lacking the same renewed support that male peers reported. Targeted family counseling can help to educate women's family members about their need for help in recovery and to build understanding about the characteristics of addiction. In China, a brief, multi-session intervention with clients in MAT and their families helped dispel stigma and prejudice around methadone use, promoting family acceptance (Gu et al, 2013). Employing a disease model in counseling sessions can help family members understand that their loved ones illness caused them to lose control over their actions and provide an environment for family to work through their anger

together. Women in MAT seem to face greater difficulty regaining family trust and acceptance, thus outreach to women's family members might help to bridge that divide. In general, the outreach tactics that program service providers employ currently seems to facilitate meaningful and rapid reacceptance into the family, but more attention to the nuances of rebuilding relationships with family for women and treatment can help to heal remaining divides.

Economic interventions are needed to support people in treatment, particularly given the limited resources of many families with loved ones in this MAT program. Economic incentives, such as help with housing or small vouchers for food, have been shown to promote adherence in similar economically constrained environments (Hser et al, 2011). Evidence from a long running methadone trial in Canada highlights that women who continue with sex work while in treatment have worse health outcomes and difficulty sticking with treatment as compared to women in treatment who do not continue with sex work (Marchard et al, 2012). Providing vocational training and work opportunities for women in MAT can help them stay out of sex work and might be an incentive to bring more women into care. In the context of high HIV prevalence- almost half of women interviewed are living with HIV and about 75% of women in the general MAT population are living with HIV- avoiding sexual risk taking and multiple concurrent partners is essential to prevent onward transmission. Antidotal reports from service providers suggest that women are relying on multiple transactional sexual relationships to support themselves, highlighting the urgency to identify other methods for women to earn income while in treatment.

Findings from this study suggest that earning income will help women in MAT play a stronger parental role for their children and facilitate healing with their family. Thus providing economic interventions for women takes on particular importance to promote their recovery and reduce the pressure to return to sex work to provide for their children and families. Findings illustrate that regaining custody of children and supporting their families is the greatest continuing need for women in treatment. While men also prioritized supporting their families and expressed desire for greater economic support, interviews highlight that women in particular struggle for economic independence. Their partners support many women financially, yet clearly current household resources fail to cover more than the need for food and money for daily bus fare to the clinic. Service providers also acknowledged the need for an economic development component to treatment, to prevent relapse and occupy clients during the day. More operational research could help identify interventions that would be particularly suited to the cultural and social context of Dar es Salaam and this population of former injection drug users. While microfinance has helped mobilize financial resources in other contexts, research suggests that benefits vary based on the population utilizing microfinance. Research exploring loans to people in drug treatment, where the risk of relapse remains high, could help identify contingencies or prerequisites for successful micro finance groups.

Conclusion

For men and women in the first medication assisted treatment program in sub-Saharan Africa, the combination of methadone and support services has yielded significant quality of life improvements. However, a need for even more counseling and economic development continues. Particularly for women, who face the double stigma of sex work and intravenous drug use, family and individual counseling can help them navigate rebuilding healthy relationships. Vocational training or start up loans, as part of a

comprehensive economic intervention, might help support women in entrepreneurial endeavors. Aside from greater psychosocial support; lack of finances for transport and to raise children remains the most pressing need for women in treatment. Medication assisted treatment addressed the physical challenges of ending heroin dependence, yet it stops short of spiritual healing and practical skill-building needed to stick with treatment and recovery.

Transition Paper: Women in Treatment and Ongoing Needs for Support Services to Strategies to Increase Enrollment

The second paper in this dissertation offered evidence that women in treatment in Dar es Salaam struggle to reunite with their family, heal histories of sexual violence, and earn income; challenges in treatment similar but distinct from those men face. As a result, women in treatment require psychosocial services to address their unique needs. Individual and group counseling with other women can support them in healing from violence and trauma. Additionally, while family counseling works quickly and effectively to help men in treatment reunite with their loved ones, it seems that additional outreach to women's families is needed to help them thrive in care. Finally, lack of economic opportunities for women poses a barrier to regaining custody of their children and raises the risk of returning to sex work. A return to sex work raises the risk of relapse to heroin, as many women felt that sex work would involve too much shame and discomfort without the refuge of a high.

The third paper in this dissertation relies on the same interview and observational data that informed the second paper, asking this time how programmatic strategies can shift to enroll and retain greater numbers of women who inject in treatment. While the second paper sought to develop understanding of the benefits and challenges for women in treatment, this paper engages evidence to answer the question, 'How can we bring and keep more women in harm reduction care?' Triangulating interview data from service providers, men and women in treatment, recommendations consider multiple points of view to identify strategies that appeal to a range of stakeholders.

Findings from both the second and third paper can help inform future planning and implementation of outreach and treatment programs for people who inject drugs in Tanzania. Both papers address the documented disparity in service utilization between men and women. The second offers insight into treatment experiences that apply to women who are enrolled in the program, while the third paper seeks to build the base of women who are in treatment. Results can work hand in hand to improve service delivery for this key population and help to bring more women into care. Given the higher prevalence of HIV among women who use and inject drugs, as compared to men and to the general population, reaching women with comprehensive care is critical to the public health of the city and country.

These two papers connect to the first paper, as they all three seek to build the body of implementation science that informs best practices for treatment provision for PWID in sub-Saharan Africa, particularly East Africa. The first paper starts broad, identifying scientific evidence to guide planning and implementation of MAT programs. The second paper narrows in, taking a close look at the experiences of men and women in treatment. The third paper steps out a little further, seeking to building on research from the first and second paper and identifying strategies to enroll and retain more women in care.

Paper 3: Strategies to increase women's participation in harm reduction services in Dar es Salaam, Tanzania.

Economic and social gender inequities contribute to an ongoing HIV-crisis among women who inject drugs in Dar es Salaam, Tanzania. HIV prevalence among people who inject drugs is estimated at about 40%, broken down to 20% among men and 68% among women (Williams et al, 2007). Participation in sex work, sometimes without barriers, drives the higher prevalence among women (). Reported sexual assault at drug using hang outs and injecting practices that put women 'second to the needle' when using with men create vulnerability to transmission (CITE). Among women, sharing equipment and drugs has been described in gendered terms, building on a sense of sisterhood (CITE). Greater stigma against women contributes to isolation and marginalization from family and community networks of support (CITE). Discrimination keeps women from accessing HIV prevention and treatment services designed for the general population. All together, these structural, social and individual level factors create an urgent need for HIV prevention and treatment services tailored for this key population.

The government of Tanzania, in partnership with community-based organizations and Muhimbili University of Health and Allied Sciences, has taken the lead to address the public health crisis among people who use and inject drugs in Dar es Salaam. As part of these efforts, the consortium designed and implemented the first medication assisted treatment (MAT) clinic for opiate dependence at Muhimbili National Hospital (TCCD, 2010). The clinic works with clients referred from a continuum of care, beginning with street-based outreach and culminating in methadone treatment. Non-governmental organizations (NGOs) conduct outreach and refer people who use drugs to education and counseling sessions at community storefronts. For clients at the MAT program, the storefront NGOs provide ongoing psychosocial support. Three years into service delivery, the spectrum of harm reduction services has made over XXXX outreach contracts and connected XXX clients with the MAT clinic. Yet, a gap remains in treatment utilization between men and women. Less than 10% of clients utilizing services along the continuum of care are women, while weighted modeling estimates show that women comprise about 30% of those eligible for services (Lambdin et al, 2013).

Challenges connecting women to drug treatment and support services are not unique to Tanzania; evidence from a variety of contexts highlights similar experiences. Women with chemical dependence are more likely to have histories of violence and trauma, experiences that both increase their need for psychosocial care and present barriers to service utilization (CITE). Distrust and stigma can prevent women from enrolling in harm reduction services or engaging with traditional outreach workers (CITE). Gendered family roles and responsibilities create unique treatment needs for women as compared to men (CITE). Dual diagnosis has been documented at much higher prevalence among women in drug treatment than among men, contributing to complex service needs that can be difficult for clinics to address (CITE). Even with a full range of services offered, models of care, staffing, and tough love treatment environments can implicitly privilege men. To combat these inequities, some outreach and treatment programs incorporate strategies and services specifically to address the needs of women. However, in severely limited resource settings, these approaches might not be financially feasible. Social and cultural contexts

shape service delivery in complex ways, meaning that evidence from North America and Western Europe might not hold true in East Africa.

This formative qualitative study seeks to identify barriers to harm reduction service utilization among women who inject drugs in Tanzania, applying findings to make evidence based recommendations to increase program participation. Using data from 25 in-depth interviews with service providers and MAT clients, combined with direct observation of program services such as outreach, this paper triangulates qualitative information to support validity of results. Conclusions have implications for service delivery in Tanzania, and neighboring countries with similar epidemiologic and cultural contexts.

Methods

Program Overview

A consortium of governmental and non-governmental partners supports the Medication Assisted Treatment (MAT) Clinic, located at Muhimbili National Hospital and operated through Tanzania AIDS Prevention Programs (TAPP) as part of the national plan to prevent and treat HIV among people who use and inject drugs. The Tanzania Drug Control Commission in partnership with the Tanzania Ministry of Health and Social Welfare, and with technical support from Muhimbili University of Health and Allied Sciences, Pangaee Global AIDS Foundation and the University of Texas, oversee implementation of the full range of harm reduction and treatment services. Funding for the MAT program comes in part through a grant from the US Center for Disease Control (CDC) through the President's Emergency Plan for AIDS Relief (PEPFAR). Four non-governmental organizations- Kimara Peer Educators, Blue Cross of Tanzania, Center for Human Rights Promotion (CHRP) and Youth Volunteers Against Risky Behavior (YOVARIBE)- collaborate with the clinic to provide a comprehensive range of community-based support services. Using harm-reduction outreach and education strategies, workers at one of the four NGOs located throughout the city help enroll PWI at the MAT clinic. Once enrolled in the program, MAT clients present daily for directly observed treatment, receiving continued counseling services through the NGO that facilitated their recruitment into MAT.

Study Participants

Clients were purposefully sampled for variation. Women were over sampled, as their experiences are the focus of this study. 19 former PWI currently enrolled in MAT participated in interviews, 13 women and six men, out of a total of 600 people in treatment. Time in treatment ranged from two weeks to two years. Two men and one of the women clients interviewed were also peer community outreach workers (COW). Clients from all four NGOs participated in the study. All demographic information presented in results was extracted from interview data.

Service providers from TAPP, Kimara Peer Educators, Blue Cross of Tanzania, CHRP and YOVARIBE were purposefully sampled for range of experience. Six service providers- two nurses, one program coordinator, one social worker and two outreach supervisors- took part in interviews. Two service providers were men and four were women.

Data Collection

A grounded theory approach guided data collection and analysis (Corbin and Strauss, 2008; Charmaz, 2009). B. Mahenge, a clinical psychologist and public health researcher, conducted 24 of the in-depth interviews in Kiswahili. S. Zamudio-Haas conducted one interview in English with a service provider, the program coordinator. All study participants had the option to interview in either English or Kiswahili and while many participants are bilingual, almost all preferred to interview in Kiswahili. Two semi-structured open-ended guides, one for PWI and one for service providers, were written in English and translated into Kiswahili by a person not otherwise involved in data collection (see Appendix II- V). The MAT program director (J. Mbwambo) checked translations for accuracy. Interview guides for PWI explored history of drug use, harm reduction service utilization, health concerns, impacts MAT participation has had on their lives, and ongoing needs. Interview guides for service providers explored their experience with harm reduction service provision, the challenges and rewards of their work, perceptions about different service needs among men and women PWI, and ideas for improving service delivery.

Each interview involved a participant, an interviewer, and a note taker. The note taker (S. Zamudio-Haas) is not fluent in Kiswahili and observed and documented appearance, body language and interpersonal dynamics. The note taker and interviewer debriefed for a half hour to an hour following interviews, identifying areas for clarification via follow-up in future interviews, discussing particularly salient topics, comparing interview data to emerging themes and noting any new information that either reinforced or questioned developing theory. Debriefing informed subsequent data collection in accordance with a grounded theory approach. Interviews ranged in length from 45 minutes to an hour and forty-five minutes, with the majority of interviews lasting an hour.

Direct observation of outreach activities occurred at 12 outreach sites. Community outreach workers and peer outreach workers from Blue Cross, Kimara Peers, YOUVARIBE and CHRP conducted the outreach. The author accompanied outreach workers during their neighborhood rounds, lasting anywhere from two to four hours. At each site, the senior outreach worker from the NGO conducting service delivery and a peer community outreach worker acted as key informants and interpreters. Observational data was captured via note taking on setting, individual behavior, group dynamics, number of people present, and logistics. Notes included a sketch of the service delivery settings and key comments from informal conversation.

Data Analysis

One principal coder, S. Zamudio-Haas, collaborated with B. Mahenge to identify and understand emergent themes. Two interpreters not otherwise connected with the study transcribed and translated audio recordings into English as soon as possible following interviews, facilitating simultaneous analysis and data collection. B. Mahenge reviewed translated transcripts for accuracy. Notes from observation of program activities were typed from the field notebook the same day they were collected, with questions and comments to inform subsequent direct observation. Initial line-by-line coding of transcripts culminated in a standard codebook, with a definition, inclusion and exclusion criteria, and an example for each of the codes (MacQueen, 1998). The final Standard Codebook is included as Appendix VI. Codes fit into three analytic categories, the first and last of which are salient interview

quotes: *Junkie Gets No Love*, *Service Provision and Utilization*, and *Standing at a Crossroads*. Memos, written same day as data collection and at each stage of the analysis process, facilitated constant comparison and helped saturate understanding of conceptual categories. Triangulation of data, from providers, clients and observation of program activities, offered multiple perspectives on similar phenomena, enriching understanding and increasing the validity of analysis.

Ethical Approvals

All individuals who participated in interviews offered informed verbal consent and received a copy of the consent form. The organizations that participated in the research offered letters of support for the research. Ethical approval was received from the Committee for the Protection of Human Subjects at University of California, Berkeley and from the Research and Publications Committee at Muhimbili University of Health and Allied Sciences.

Results

Table 1.0 MAT Client Interview Participants

MAT Study Participants	Total MAT Participants	Married or Cohabiting	Parent to ≥1 child	HIV Status			Violence Survivor	
				+	-	?	Sexual Violence	Physical Violence
Men	6	3	4	0	6	0	0	3
Women	13	8	9	6	3	4	5	5

Participant Overview

At the time of the interviews, study participants who formerly injected drugs and currently are in medication assisted treatment ranged in age from 25 to 37 years old. Time in treatment ranged from two weeks to a little over two years. Three of former PWI currently work as peer community outreach workers. Ten MAT participants, eight women and two men, were married or cohabiting at the time of the interview. Five study participants' husbands, although none of the wives were also enrolled in MAT. A majority (13/19) of MAT study participants were parents, with between one and four children. Four out of six men and nine out of 13 women were parents at the time of interviews, one woman was pregnant and one man's wife was pregnant. Three of the 13 parents had one infant die. Six participants shared that they are living with HIV, nine shared that they are not living with HIV and four did not disclose their HIV status. All of the participants who disclosed that they are living with HIV are women. Five women recounted experiences of rape and sexual assault. Five women described surviving intimate partner and family physical violence. Three men recounted surviving physical violence, either at the hands of family in their youth and in two cases violence perpetrated against them in retaliation for perceived robbery.

The six service providers who participated in the study worked at either the MAT clinic or one of the four partner NGOs. Training background varied. One outreach supervisor had been working with PWI since 1995 and had worked as a research assistant on a number

of previous studies. The two medical practitioners, both nurses, had backgrounds in psychiatric care before coming to work at the clinic. The social worker previously worked with one of the NGOs counseling people living with HIV. Another outreach worker recently began working with PWI as a volunteer outreach worker, eventually being promoted to a senior position.

Take it to the Streets: Peer Outreach Works

Most of the participants interviewed in MAT described enrolling in the program thanks to extensive outreach efforts. Outreach workers, generally in small groups of women and men, pass through the *vijiwe* and *dago*, semi-private or public areas where people are known to use and inject drugs. Once there, outreach workers engage people in conversation, talking to them about HIV prevention through condom use and safer injecting practices. After people have engaged in conversation, outreach workers introduce the topic of medication-assisted treatment, talking about how it works and where it is provided. Generally over the course of multiple visits, but sometimes in one encounter, outreach workers connect people who use drugs to support services at one of the MAT partner NGOs. At the community-based NGOs, clients receive education courses and go through intake, obtaining referral to treatment after a few orientation sessions.

Clients and providers shared the importance of building relationships with people who are using or injecting drugs, creating open communication and trust before linking them to care services. Often, this takes a couple of outreach visits, even if people expressed interest in treatment during the first encounter. Clients in MAT described generally being shunned and mistrusted when they were injecting drugs. Because of these negative experiences, some initially doubted the good intentions of the outreach workers. Consistent efforts soon won over client's interest and trust, as described in the quote below, emblematic of many MAT client's enrollment experiences.

"These ladies came by the spot- there were four of them, although the first day I didn't pay them much attention because I was sick at the time. I just ignored them, in fact I even cursed at them once. Then about a week later they came back again and I kind of called them to my side because I didn't want my friends to hear. So they opened a file for me and then they came back the next day and started recruiting more people and I cursed them out because it looked to me like they were just trying to use us and do something shady. But I thank god that they were able to put up with the choice words I had for them. So that week they must have come about three times and on the forth visit they got to me and took me with them and we came to [the NGO]" –Women in MAT

For some clients, outreach took a more personal form, with peers who formerly injected connecting them to treatment. A third of the women MAT clients who were interviewed gained interest in treatment after their partners successfully began the program. A few other clients described seeing people that they knew from the *vijiwe*, visibly healthier, and asking them about how they had gained weight. Methadone is newly available in Tanzania, thus many clients recounted the disbelief they felt when learning about a medication that eliminates cravings and withdrawal symptoms. Seeing someone they knew from past drug-using circles offered testament to the effectiveness of the medication, helping overcome people's disbelief or fear about stopping heroin. One

educator eloquently described how peer educators help to break down the deeply rooted resistance to change that people with chemical dependence can develop after years of addiction. This quote is representative of a sentiment expressed in multiple interviews with MAT clients and service providers.

“They are suspicious that other people who have never used drugs are looking down on them and that they don’t understand anything they go through. They listen to me easier because they know that I have used heroin and I know everything about it. They get some kind of motivation from that because they can see that methadone has helped me to change” –MAT Male Peer Community Outreach Worker

A number of clients learned about MAT via outreach to their parents and family, who then helped to support them to enter treatment. One woman recounts how one of the first people in the methadone program came to her mother, a neighbor, and talked to her about how the medication helped him stop heroin. First overcoming the mother’s disbelief, the man then succeeded in bringing her daughter into treatment with the help of outreach workers. Another MAT client interviewed described how a client on methadone broached the subject with his father, sharing that he was on treatment and it had changed his life, and might be a good medication to help his son stop injecting drugs. The father then mediated with his son, helping to encourage him to enter into drug treatment.

Double stigma: Women sex workers and drug users

Despite extensive outreach efforts, many women who could benefit from harm reduction do not utilize program services, in part due to the double stigma they face as sex workers and drug users. Interviews with clients and service providers revealed that while most people perceived as drug users experienced discrimination, these experiences were more severe for women, who transgressed strict cultural norms governing women’s sexual promiscuity and modesty. While clients noted in interview after interview that at the MAT program, everyone is welcomed, still they shared that women in particular might feel ashamed admitting they needed drug treatment, safer injecting kits or condoms. Past experiences of discrimination at health facilities and hospitals might fuel the fear of interacting with outreach workers or entering treatment, where clients must present daily at the hospital for medication. In the quote below, a service provider describes the stigma that keeps women sex workers who use drugs from accessing reproductive health clinics, summing up the unwelcoming reception a number of clients described receiving at health facilities.

“Here there is a lot of stigma. Even for those you see who are courageous, its sometimes difficult for them to walk into a clinic. Unless they are sure that they are not going to be frustrated with the clinic. Because of the stigma. The attitude at the clinic that can discourage some of the girls. Some of the health care workers are not so friendly. They will ask difficult questions. They don’t say, ‘Go away’ but this girl will not come back” – Women Service Provider

This double stigma can prevent the family support that MAT clients need to enter and stick with treatment. The NGOs and the methadone program cannot afford to provide transport stipends or living arrangements for clients. Rather, clients rely on the extended support from family networks to provide their food, shelter, and transport while they get

back on their feet. Before enrolling in the MAT program, prospective clients need at least one sponsor, a family member who agrees to help care for them while they adjust to treatment. In interviews with service providers and clients, information shared highlighted the distinct difficulties women face when they try to get another chance from their family. While all MAT clients interviewed spoke of the desperate ways they had taken advantage of their family to steal and coherence money for drugs, women seem to have faced greater challenges getting family to help them with treatment as compared to men. In the quote below, an interview participant emphasizes the greater discrimination women come up against as they seek help from their family, explaining why there are fewer women in treatment than men. This explanation arose during a number of different interviews with clients and service providers.

“In Dar, a woman who does drugs is more vehemently discriminated against than a man who does drugs because she is a woman. A man who does drugs is more tolerated. So a woman is discriminated against. There is a difference. A woman cannot get any support. She will not receive any support. So she is shut out, but a man can be given work to do- manual labor, heavy lifting, stuff like that. He will work and be able to get himself some money to use, but for a woman it is difficult”- Woman in MAT

Sex work or sexual relationships as their main source of income increase shame for women who enter the treatment program. As women struggle to stay in treatment, they sometimes turn to transactional sexual relationships with men in the program to fund basic necessities, such as transport and shelter. These relationships of convenience can change quickly, sometimes women maintain multiple at the same time, even though casual sexual relationship between clients are discouraged by the code of proper conduct that helps keep the peace at the MAT clinic. The same group of about 600 clients reports to the clinic everyday for treatment, waiting their turn in an outdoor room to present and drink medicine under the supervision of a program nurse. Sitting together in the crowded room for hours can get uncomfortable for the 50 or so women in the MAT program, given the relationship histories a number have with the men in treatment. These interpersonal dynamics were cited by a number of service providers and clients as fueling women’s dropout from treatment, as summed up in the quote below, where an interview participant advocated for increased follow-up for women who default.

“We should go to look for them when they default, the organizations should not give up on following them. Others are changing boyfriends daily, and that is not good. Changing partners is one of the misconducts. They drop out from the shame that they have due to frequent partner changes” –Woman in MAT

While outreach workers connected to the NGOs attempt to track down and re-enroll defaulters, women can be more difficult to locate than men, as described in the following results sections.

Separate spaces

Women and men who use and inject drugs tend to occupy separate spaces, recounted clients and service providers in interviews. While men congregated in the *vijiwe* and *dago*, located throughout the city in public spaces near the water or in the middle of

dense urban neighborhoods, women tend to gather in more hidden spots, women only hang-outs. A greater vulnerability to violence in part drove this separation. Women were known to have cash on them from sex work, and during interviews many reported being robbed or assaulted by fellow drug users in the *vijiwe*. Additionally, a greater shame drove women into seclusion. Observation of program outreach activities confirmed that most of the sites visited were public spaces, with neighbors and other community members passing by and able to see who inhabited these drug using hang outs. Unlike men, most women avoided this visibility, at the same time avoiding encounters with the outreach workers. In the quote below, an interview participant described why women are rarely found at the drug using spots frequented by outreach teams.

“Some of the women might be ashamed and not want to go somewhere and mix with all the men there and some might not like- you know someone might be doing drugs, but at the same time she might not want it to be known that she is doing drugs.”- Man in MAT

Further emphasizing the tightknit, enclosed circles of women who use drugs, a number of people suggested using peer community outreach workers to access women who are eligible for services but not utilizing them. To this effect, a peer community outreach workers (COWs) program recently began at the MAT clinic. Two men and one woman who are in the COW program participated in interviews, however given that it was only a few weeks off the ground at the time of data collection, it was too early to discuss the impacts of the program on service utilization. Preliminary feedback suggested that the peer COWs might meet with greater success accessing women sex workers who use and inject drugs and connecting them to care. One NGO partner of the program has had great success organizing young women sex workers and supporting them to access available health services. A provider with this program spoke highly during an interview of the potential for peer COWs to help connect women to the MAT program and neighborhood-based support services. In the quote below, she summarized an insight expressed in a number of interviews.

“Drug use amongst young girls is very hidden in this community actually by culture and by the way they operate. But sex work is a bit more obvious, but also a lot of silence around it. Meeting with the girls is a bit difficult. In the afternoons, they need rest. In the evenings, they go out. So the best person to work with the girls is somebody from the same group who can be with the girls when the time is appropriate for the girls” – Woman service provider

Peers, or in the case of the COWs at the treatment program, former injectors and sex workers, have insider knowledge and street credit that can open communication with young women in a way that traditional outreach workers or male peer COWs cannot. The newly initiated peer COW program at the clinic leverages this knowledge to locate and converse with women in need of care. Peer COWs who have been through the tough transition into treatment can support other women to overcome challenges and give living testament to the benefits of methadone.

Work all night; sleep all day

Women sex workers who use and inject drugs live a different schedule than their male counterparts, clients and providers reported during interviews. In addition to inhabiting separate drug hang outs than men, most women rest during the day and spend the night on the road or in bars performing sex work. Currently, NGOs conduct outreach during the day, missing the majority of women who could benefit from their services. In the quote below, a peer outreach worker notes that he found women receptive to the harm reduction message, however program timing makes it hard to find women awake. He suggested a programmatic strategy that came up in a number of interviews with clients and providers: conduct outreach to women at night.

“You know women, to get them is difficult because most of them are prostitutes. You see, they normally work at night, so they are available during the night and I do the services until 4pm. But those women work during the night and during the day they just sleep...We have to go to where they are available, they do not deny us the information and they have no problem listening to us. I think the best time is at night for this kind of work” – Male Peer Community Outreach Worker

Other clients and service providers interviewed suggested that sex work and lack of other economic opportunities keeps women away from care. Most women who injected drugs also performed sex work to earn money to support themselves. Interview data laid out a cyclic relationship where sex work funded drug use and women needed to be high for sex work, tying the two together. Many study participants described a lack of other lucrative economic opportunities for women, compounded by stigma against women who use drugs. Providers noted that a fear of greater poverty in drug treatment, if they were to leave sex work, kept some women from enrolling in the MAT program. When asked why fewer women than men utilize services, the study participant quoted below described the interconnections among drug use, sex work, stigma and lack of economic opportunities. This tangle of barriers to treatment unique to women came up in a number of interviews with clients and providers alike.

“The main issue is they are afraid of disclosing their behavior. That’s what they say and others say that its their call to do prostitution so they have to take drugs to make selling their body easy, and they say that if they start methadone they will regain their senses and will not be able to continue with prostitution, so they think that if they come here, they will lack finances” –Woman service provider

Interview data suggests that the relationship between sex work, drug use and income both keeps women additionally contributes to default from methadone. Once in treatment, study participants reported women clients struggled to pay for transport to and from the clinic. Additionally, most rely on men for shelter and food, with little independent income. A lack of economic opportunities for women in treatment, fueled in part by the double stigma they face, creates temptation to return to sex work. Sex work can contribute to relapse, as women clients and providers shared that it is hard to work the streets without being high.

Injectors Only

Women and men might utilize different modes for heroin ingestion, suggested MAT clients and service providers. Aimed at reducing the transmission of HIV and increasing treatment for people living with HIV, funding for the clinic only pays for methadone people who inject drugs. People who smoke heroin in joints mixed with marijuana, commonly referred to as *kocktails* (cocktails), are not eligible for methadone at this time, however they can utilize support services at the community-based NGOs. Some study participants suggested that more women smoke than inject heroin, making them ineligible for the MAT program. One service provider offered that as an explanation for why fewer women enrolled in methadone as compared to men. In the quote below, he expressed an insight that came up in a number of interviews.

“Most of the women are smoking and this program deals with injecting drug users, that’s why there are so few women. I got this information from women who are here. They say that they have friends who are drug users but are smoking”

–Male service provider

The stipulation that people must present evidence of long term injection drug use, such as track marks or scars, prevents those who smoke heroin who are interested in methadone treatment from injecting once for the purpose of enrolling in the program. However a few people relayed stories during interviews that some people currently in treatment injected just to enter MAT. The majority of clients interviewed described long drug use histories, ranging from five to fifteen years of heroin injection, making the anecdotal accounts seem more likely rumors than fact.

Both clients in MAT and service providers with years of experience working with PWI noted a high prevalence of death among women. Study participants pointed to risk of death as a deterrent to injection and as a reason of why there many not be many women who inject still living. MAT clients described the abscesses that come from improper injection, a few sharing that they knew people who had overdosed from injecting. A service provider with an extensive outreach background commented that a decade ago, he knew more women who injected, most of whom have since passed away. In the quote below, a MAT client links the current trend of smoking rather than injecting to women to the friends in her drug-using circle who died from injecting related health problems, including AIDS.

“Very few of them women inject, most of them are smokers. There used to be a large number of female injectors but many of them died. SO many of them are dead now. Many of my friends are dead, I could seven of my friends who are dead now. So most of them smoke now” –Woman in MAT

A couple of service providers and clients interviewed advocated for making heroin smokers eligible for treatment. They noted that many women who smoke additionally do sex work, a behavior that becomes increasingly risky for HIV when conducted for money specifically to get drugs. Former sex workers described having unprotected sex with clients if they were sick from heroin withdrawal or could make more money and call it a night. Some mentioned that when they were dependent on heroin, the future rarely extended in their mind beyond their next high, making the risk of long term chronic illness not as fearful,

as consequences seemed so far off. Interview data connecting sexual risk taking with clients and drug dependence suggests that women who smoke heroin might be particularly vulnerable to HIV transmission, even though they do not inject.

Discussion

Results support the effectiveness of street based outreach to connect people who use and inject drugs to harm reduction education, support services, and medication assisted treatment via community based NGOs. Persistence works. Returning time and again to build relationships with people facilitates trust. MAT client shared in interviews how the kindness and non-judgment of outreach workers eroded their suspicions, eventually facilitating linkage to treatment. In a review of the literature on community-based outreach for HIV prevention among injecting drug users with an emphasis on service provision in developing countries, Needle et al concludes that outreach reduces the risk of transmission (Needle et al, 2005). Quasi-experimental research from the US concludes that referrals to treatment through street-based outreach increase the likelihood of enrollment in MAT programs (Goldstien et al, 2002). This study affirms earlier conclusions, while contributing evidence that specialized efforts are needed to reach women through outreach.

Findings highlight that women and men who use and inject drugs in Dar es Salaam congregate in different hang outs, at different times of the day, preventing traditional outreach from engaging similar numbers of men and women in services. Nuttbrock et al report success providing nighttime outreach and referrals to treatment for street based sex workers in New York, sharing that 40% of women who received outreach and were using heroin entered methadone treatment (Nuttbrock et al, 2004). Nighttime outreach requires additional support from NGOs, due to increased concerns for safety. Additionally, the late hours can pose a burden to COWs, who have to travel to and from outreach sites after the typical workday, when public transport runs on different schedules and lack of streetlights can mean long walks in the dark. More research into the feasibility and additional planning for COWs safety could support a nighttime outreach program, specifically geared towards engaging women in harm reduction.

Peer outreach, from women COWs in the MAT program could help overcome the stigma and isolation that women who inject drugs experience in greater amounts than men. A convergence of literature supports peer outreach to reach marginalized, hidden populations with HIV prevention education, yet evidence also highlights the importance of the surrounding social context to facilitate or prevent the success of programs (Broadhead et al, 2006; Campbell et al, 2001; Ford et al, 2000; Population Council, 2000). In a comparison of two peer education programs for sex workers from South Africa and India, Cornish et al identify stable and supportive context, combined with significant emphasis on peer educators' ownership of activities and empowerment as educators, as key factors that support the success of a program (Cornish et al, 2009). Previous work by Campbell in South Africa suggests that peer programs must rest on an existing supportive social network to be effective (Campbell, 2000). Interview data from this same study presented in the second paper in this dissertation demonstrates a close support network to serve as the backbone of the peer COWs program. Additional monitoring can offer additional insight into dynamics among outreach workers and clients. If for example, dynamics among men and women peer

outreach workers limit the ability of the program to overcome shame, all women peer COW teams could help maximize a supportive, non-judgmental environment.

Recruiting women who smoke heroin, in addition to women who inject heroin, into medication-assisted treatment could increase women's utilization of harm reduction services and reduce HIV transmission risk. A majority of clients interviewed first smoked heroin before beginning to inject. Treating women who smoke could prevent a drug use trajectory culminating in injecting drugs, as women build tolerance and move on to stronger means of heroin administration. Additionally, women in the MAT program reported a greater likelihood of barrier-free sex when they were drug sick (dissertation paper 2), a state of desperation that happens to heroin smokers and injectors alike. Offering MAT to women smokers could help to reduce the risk of HIV transmission from sex work. In a review of methadone as an HIV prevention intervention, Sorensen et al found that both injecting and non-injecting former drug users reduce sexual risk behavior after entering methadone treatment (Sorensen, et al, 2000). However, findings suggest that many women in this treatment program have few other economic options than transactional sex, so its possible that findings from other contexts would not apply, when it comes to sexual risk reduction. Formative research from this program could help build understanding around the relationship between treatment and reduced HIV risk for women who use heroin in Dar es Salaam.

Conditional take home dose could be an additional tactic to encourage women to enter harm reduction treatment. With conditional take home dose, clients would present less frequently at the MAT clinic, minimizing the barriers that shame and discomfort present to women when it comes to daily attendance and waiting for their dose. Conditional take home dosing, requiring clients to meet criteria such as one month drug free urine or three months in traditional treatment, has proved effective in other contexts at increasing treatment retention (Gerra et al, 2011; Holland et al, 2012; Sarasvita et al; 2012). Understanding how, if at all, take home dose facilitates women's retention in treatment remains a gap in the literature and a relevant area for future research. In Indonesia, take home dose was associated with better treatment adherence, as it helped clients avoid traffic and transport issues in dense urban environments (Sarasvita et al, 2012). In Italy, take home dosing offered clients greater freedom, helping maximize retention in services over time. (Gerra et al, 2011; Holland et al 2012). While reducing transport costs could reduce the need to continue in sex work or transactional relationships, thereby addressing the complicated relationships among sex work, shame, economic need and reduced service utilization among women; formative research with take home dosing in this context is needed to understand its potential risks and benefits.

Conclusion

This study reported findings from 25 in-depth interviews with service providers and clients in the first medication assisted treatment program on mainland sub-Saharan Africa. Results highlight the effectiveness of street-based outreach to help connect people who use and inject drugs to prevention and treatment services, while demonstrating that additional strategies are needed to increase women's utilization of care. The double stigma from sex work and drug use leaves women less likely to receive support from their family to enter treatment, while increasing a weariness and suspicion of harm reduction services.

Logistically, women who use and inject drugs are found in different areas at different times of the day, making it challenging to reach men and women with the same outreach efforts. Strategies such as peer based nighttime outreach could be effective at connecting women to program services. Take home dose could be explored as a tactic to help retain women in treatment after enrollment, minimizing their travel and time at the clinic. Providing treatment to women who use drugs but do not inject might further increase treatment uptake, helping to prevent HIV transmission and bring women into care. This study contributes to a growing body of literature exploring the different vulnerabilities and support needs for women who use and inject drugs in developing and transitional country contexts, a population sub-group with high HIV prevalence and urgent need for specialized services tailored to their experiences.

Conclusion

This dissertation contributes to the growing body of implementation science to inform best practices for methadone provision as an HIV prevention intervention in sub-Saharan Africa. Taking a three paper model, this dissertation explores strategies to maximize service utilization for hidden, marginalized urban populations of people who use and inject drugs. In particular, this dissertation profiles programmatic approaches to engage clients in a low-resource setting, gathering evidence from the literature and from the streets and clinics of Dar es Salaam.

The first paper in this series reviews the literature on methadone enrollment and retention strategies, focusing on studies from developing and transitional country contexts. Key findings highlight the importance of street-based outreach to connect people who use and inject drugs with treatment programs. Economic incentives, such as low or no cost detoxification and treatment, provide effective incentives for enrollment. Results point to the role of medication dose amount and mode of administration (i.e. observed consumption or take home) in promoting long-term retention in treatment. Studies reported wide variation in one-year retention based on programmatic approach, with evidence emphasizing low dose as the strongest predictor of relapse and default. Factors that might influence differences in male and female enrollment and retention remained a gap in the literature. In fact, many cohort studies and cross-sectional analysis revealed such low participation levels from females who use and inject drugs that meaningful conclusions on sex differences would be impossible to infer.

The second and third papers aim to help fill this gap in the programmatic literature, working with service providers and clients in the first MAT program in sub-Saharan Africa to identify strategies to promote women's enrollment and retention in treatment. The second paper in the series describes women's past experiences with sexual and physical violence, contributing to a greater need for psychosocial support services than they currently access. The double stigma against women as sex workers and drug users, who have transgressed societal strict norms promoting women's modesty and chastity, prevents many women from enjoying family support while in treatment. Without family support and in the absence of programmatic resources to provide for transport and cost of living, women turn to transactional relationships to support themselves. Temptation to return to sex work out of economic necessity can increase risk of relapse, as women face the dangers and indignities of the streets, making them vulnerable to the false refuge and euphoria of a heroin high. Economic interventions specifically for women, such as the microlending and loan groups that sex workers have successfully employed in one of the NGOs that support the MAT Program, could help to both empower women to stay in treatment and help them gather the resources they need to support themselves.

The third and final paper in this series lays out practical, programmatic strategies that could help increase enrollment for women who use and inject drugs. Interview data from providers and clients alike point out that women congregate in different locations and at different times of the day. Peer, nighttime outreach could be one solution to reach women where they are at, when they are available. However, concerns around safety and transport logistics for staff must be explored, as street outreach at night involves greater danger and less support for field workers than the same work during the day. Take home

dose might be an incentive for women to enter treatment, as it reduces the costs associated with MAT participation. Additionally, take home dose reduces waiting time at the clinic, a potential barrier to women who might have complicated histories with some of the men in treatment, making waiting long hours in a close space, outnumbered 1 to 10 uncomfortable. Particularly given the high prevalence of sexual violence, maximizing women's comfort could help promote service utilization. Expanding services to women who smoke heroin also seems to have potential to reduce onward risk of HIV transmission, as the pressure to engage in sex work without barriers for a higher price is great when women are working specifically to make money for drugs. Given that the women clients interviewed all started as heroin smokers, treating smokers might be an upstream approach to reduce the population of people who inject drugs.

This dissertation focused on programmatic approaches to maximize service utilization in low-resource contexts, with an emphasis on understanding women's experiences and facilitating prevention and treatment geared towards their particular needs. This research took an approach rooted in feminist and human rights conceptual frameworks. Study methods emphasized tactics to structurally support harm reduction, deliberately moving the nexus of query from individual choice and responsibility, to programmatic strategies to facilitate the accessibility, acceptability and availability of services. To prevent the further marginalization of women who use and inject drugs, researchers and providers must respond to women's priorities. Only by asking women about their experiences can we gain insight into their internal world, uncovering the logic that shapes actions. Up against so many hurdles, women and men in medication assisted treatment envision healthy futures for themselves and their families. Public health researchers and practitioners can benefit from tapping into this insider knowledge and motivation, helping to support people as they rebuild their lives and thrive in recovery from past trauma. Seeking to help support this intention, this series of papers makes a modest contribution to the literature on providing and scaling up comprehensive HIV prevention and treatment services for people who use and inject drugs and sex workers, two key and overlapping populations.

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Appendix A: Literature Review Matrix

Objective: To review and synthesize published literature that identifies strategies that increase enrollment, prevent default, and re-enroll those who have defaulted in methadone treatment, with an emphasis on service provision in middle and low-income countries.

Methods: Key word search of PubMed database and bibliographical back checking of articles.

Inclusion Criteria: Experimental or quasi-experimental study design, with service enrollment, utilization, retention and default/dropout as primary outcomes. For low and middle-income country settings, cohort design can also be included.

Exclusion Criteria: Articles published before 1995, review papers, policy papers, cross-sectional studies.

Abstracts Reviewed: 204

Articles Included: 32 included

Reference	Study Design	Results	Discussion
Ahmadi J. Methadone versus buprenorphine maintenance for the treatment of heroin-dependent outpatients. Journal of Substance Abuse and Treatment. 2003: 217-220.	Shiraz, Iran. Randomized comparative double blind 18-week prospective study with <i>n</i> = 164 heroin dependent males, divided into four groups of <i>n</i> =41 each: 1-mg, 3,mg, or 8mg dosage of buprenorphine or 30 mg of methadone; all 4 groups receiving 1-hour weekly sessions. Outcomes: days in treatment. Missing more than 6 consecutive days results in discontinuation, with up to 3 opportunities for reintroduction into the same treatment group they were in.	Mean age buprenorphine 31.43 years; methadone mean age 33.7 (diff not stat sig). Completion rates by dose: 29% for 1-mg group; 46% 3-mg, 68% 8-mg group, 61% for methadone. Comparison among groups reveals that sig. more participants completed the methadone group than the 1-mg group; and sig more 8-mg group than 1-mg group completed treatment. All other comparisons non-sig.	Clear from results that higher dose most successful in retaining patients. Discussion explores that higher doses might result in greater retention; however antidotal sense hat both the 8-mg and the 30-mg better than current practice. Further research could explore higher dosing and advantages that buprenorphine has been shown to have compared to methadone (easier detox, lower risk of OD) in other contexts.
Apple P, Tsemberis S, Joseph H et al. Housing First for Severely Mentally Ill Homeless Methadone Patients. Journal of Addictive Diseases. 2012. 31;3: 270-277.	New York City. 3-year prospective cohort comparison study with a population of homeless, mentally ill heroin dependent study participants. Intervention (<i>n</i> =31) included housing in an apartment and ongoing social support services while in outpatient methadone treatment. Comparison group (<i>n</i> =31) matched control	Of intervention: 39% one or more psy. Hospitalization, 43% used other illicit drugs (mainly crack cocaine), 32% had one or more arrest, 29% had inpatient treatment episode. Intervention treatment at end of study for intervention 51.6% vs. 20% for comparison (<i>p</i> <.02); housing retention was 67.7% vs. 3% or 13% (both <i>p</i> 's < .01). 3 intervention patients passed away	Results highlight the high risks of death, arrest, illness, that the study population lives with. Also show the clear benefits that stable housing offers to treatment retention. Further research could help to delve into the different influences that housing and comprehensive social services have on treatment adherence for this population; however

	drawn from an admin database, in outpatient treatment but without housing and comprehensive social support. Main outcome: time in MAT Other outcomes: hospitalization, other drug use, arrest, retained apartment	during the study period. Unknown prevalence of death among control.	possible that benefits limited to integrated approach.
Armstrong G, Kermode M, Sharma C, et al. Opioid substitution therapy in Manipur and Nagaland, North-East India: Operational research in action. Harm Reduction Journal, 2010; 7:29.	Northeast India. Prospective cohort operations research study from 2 OST programs: Manipur (<i>n</i> =1853) and Nagaland (<i>n</i> =716) for a total of <i>n</i> =2569 participants (96% male). Primary outcomes of interest: treatment retention, treatment impacts on HIV risk behavior, and patient characteristics associated with relapse. Data come from standardized questionnaires administered at intake, after three months and at cessation.	72.8% retention at 3-months and 63.3% retention after 6-months, 50.8% at 12 months. Statistically sig (<i>p</i> =0.05) reduction in needle sharing, unsafe sex, incidents of detention and improvements in a range of QOL measures. Greater spending on drugs at intake (OR 1.20), frequently missing doses (OR 8.82), having heroin as most prob. Drug (OR=1.95) increased chances of relapse; longer duration in treatment (OR=0.76), regular family involvement in treatment (OR=0.20) reduced likelihood of relapse.	Evidence highlights effectiveness and feasibility of NGO-provided OST programs in regions where conflict, under-development, and injecting heroin ongoing problems. Results suggest the need to identify tactics to strengthen family involvement and support of treatment as a protective factor against relapse. Also identifying high risk clients at the start, as most relapse happened within first few months (discharge at 6 m/ 1 year mainly due to completion of treatment)
Barnett P, Masson C, Sorensen J et al. Linking opioid-dependent hospital patients to drug treatment: health care use and costs 6 months after randomization. Addiction. 2006; 101: 1797-1804.	San Francisco. Randomized clinical trial, 126 opioid-dependent drug users seeking medical care randomized to either receive: 1. Vouchers for 6 months of MMT (<i>n</i> =30) 2. 6 months of case management (<i>n</i> =32) 3. Both interventions (<i>n</i> =32) 4. Usual care (<i>n</i> =32). Clients recruited through a large urban public hospital/	After 3 months, vouchers alone group used less-heroin and as compared to the case management alone group and the other two groups; both voucher groups utilized more MMT (90% service utilization) as compared to 40% among case management recipients. No difference in service utilization at 6 months among the groups.	For study pop, cost was the central barrier to enrolling in MMT. Motivation- which case management intended to increase- did not seem to be a central barrier, as CM + voucher had similar enrollment rates as voucher alone. 6 month voucher appears to be too small a time period, as people relapsed as doses tapered off in anticipation of discharge at 6 months
Booth R, Corsi K, Mikulich-Gilbertson S. Factors associated with methadone maintenance	Denver, CO. Randomized control trial with <i>n</i> =577 IDU (68% male). Intervention: motivation interviewing plus voucher for free treatment. Control	Overall 33% entered treatment, 60% of which remained for at least 90 days. Retention predictors included: higher methadone dose, free treatment, greater contacts with clinic	Findings highlight programmatic factors associated with treatment retention and suggest the importance of free treatment. Also study population, as compared

<p>treatment retention among street-recruited injection drug users. Drug and Alcohol Dependence 2004. 74:177-85.</p>	<p>received risk reduction intervention including safer injecting and sex behaviors counseling. All offered treatment, those who were interested were taken to detox and had intake fee waved. Outcomes of interest: treatment enrollment and retention.</p>	<p>and higher counselor rating of patient cooperation. Motivational interviewing vs. risk reduction counseling not found to influence treatment retention.</p>	<p>with IDU who enter treatment via other means than street outreach, were more likely to be homeless, share needles in past 30 days, inject more frequently. Shows importance of mobile outreach to connect most vulnerable to treatment</p>
<p>Booth R, Corsi K, Susan M et al. Improving entry to methadone maintenance among out of treatment injection drug users. Journal of Substance Abuse Treatment. 2003. 24: 305-311.</p>	<p>Denver, CO. Randomized comparison study with <i>n</i>=577 (68% male) out of treatment IDU recruited from the street and receiving either 1. MI + 90 day free MMT 2. MI + referral 3. RR + 90 day free MMT 4. RR and standard referral. All those interested in TX received transportation, rapid intake, and entry fee waiver to MMT. Outcome of interest: MMT entry. Same cohort as above study; about entry only</p>	<p>33% of participants entered MMT, 66% of whom received the free voucher. Desire for treatment, heroin use prior to treatment, associating with fewer drug-using friends, injecting with unsterile equipment all associated with enrollment. Smoking crack and injecting cocaine reduced probability of treatment entry. No sig diff town RR or MI and MMT entry (32% vs. 36% resp).</p>	<p>Results support street outreach interventions and free MMT vouchers to facilitated entry into TX. Findings highlight the role that perceived HIV risk (Booth 1998) via recent risky injecting behaviors, might be a motivating factor to join MMT. Additionally, findings highlight the role that social networks play in MMT enrollment.</p>
<p>Broner R, Kidorf M, King V, et al. Comparing adaptive stepped care and monetary-monetary voucher interventions for opioid dependence. Drug and Alcohol Dependence, 2007; 88S: S14-S23.</p>	<p>Baltimore. 6-month RTC with 3-month FU of <i>n</i>=236, randomized into one of 4 groups: 1. Motivated stepped care (MSC) 2. Contingent voucher incentives (CVI) 3. Both MSC and CVI 4. Standard of care. MSC uses negative reinforcement and avoidance via counseling to improve adherence and drug abstinence, while CVI uses principals of positive reinforcement. All received methadone dosing 60- 90 mg. Primary outcomes: retention in MAT program and other drug use.</p>	<p>Sig main effect observed for the CVI groups in shorter time to first clean urine analysis (OR= 1.50), with the combined intervention showing the shortest time. Intervention groups had sig shorter time to clean urine than the comparison. Retention at 6-months and 9-months higher for the CVI groups; while attendance at counseling sessions greater among the MSC group.</p>	<p>Results suggest that both interventions more effective at reducing other drug use and increasing retention than MMT alone. However CVI seems to be the most effective incentive to stop OD use and to retain in MMT.</p>
<p>Chawarski MC, Zhou W, Schottenfeld RS. Behavioral</p>	<p>Wuhan, China. Pilot randomized clinical trial with <i>n</i>= 37 recent enrollees followed for 6-</p>	<p>Avg methadone dose 45 mg. Both groups sig reduced HIV risk behavior, with stat sig greater</p>	<p>Results show the efficacy of a BDRC intervention added to a standard MMT program in a resource</p>

<p>drug and HIV risk reduction counseling (BDRC) in MMT programs in Wuhan, China: A pilot randomized clinical trial. Drug and Alcohol Dependence. 2011; 115: 237-239.</p>	<p>months at two MMT clinics. The intervention ($n=20$; 88% male) receives MMT and limited psychosocial support services (Standard of care) plus additional behavioral drug and HIV risk reeducation counseling while comparison group ($n=17$; 75% male) receives SC. Primary outcomes: HIV risk behavior, MMT retention, OD use.</p>	<p>reduction among intervention $F(2, 65) = 7.17$, $p < 0.01$). Both groups sig reduced OD use, however reduction was sig greater among intervention group ($F(2, 74) = 7.18$, $p < 0.001$). Retention at 6-months was 80% in the intervention group and 76% in the control group ($p=.8$).</p>	<p>limited session to reduce risk behavior and OD use, as compared to MMT alone. Results have implications for other resource-limited settings, where psychosocial support services are in short supply and MMT patients could benefit from additional care. Good retention.</p>
<p>Chawarski MC, Mazlan M, Schottenfeld RS. Behavioral drug and HIV risk reduction counseling (BDRC) with abstinence-contingent take-home buprenorphine: A pilot randomized clinical trial. Drug and Alcohol Dependence. 2008; 94: 281-284.</p>	<p>Muar, Malaysia. Community based outpatient center. Pilot randomized comparison trial ($n=26$; 2 wmn) with heroin dependent participants assigned to Standard Services BMT (physician advice and support, weekly non-contingent THD) or Enhanced services (nurse-delivered BDRC and abstinence contingent THD). 3-month follow-up. Outcomes: retention, opiate neg. urine, self-report drug use and Hires behavior.</p>	<p>High retention in both groups (11/12 in SS and 12/12 ES). Sig increase in opiate negative urine, although sig greater among ES. KES had longer period of consecutive abstinence from opiates. Both groups reported reduction in risk behavior, with no sig difference between groups.</p>	<p>Results point to the strength of CTHD combined with BDRC. Unfortunately with the design limits (small sample, combined intervention) difficult to tease out if it's the combo, one or both of the interventions that led to the abstinence and high retention. Does show the effectiveness of intervention in DC context</p>
<p>Che Y, Assanangkornchai S, McNeil E, et al. Predictors of early dropout in methadone maintenance treatment program in Yunnan province, China. Drug and Alcohol Review, 2010. 29: 263-270.</p>	<p>Yunnan, China. Prospective cohort study, $n=218$ (84% male). Attendance and daily dose abstracted from clinic record, structured questionnaire administered, 0-1, >1-3, >3-6 month follow-up. Outcomes: retention in treatment. Predictors: personal and program variables</p>	<p>Retention at 1, 3 and 6 months: 94%, 75% and 57%. After three months, higher daily dose (>60 mg) associated with lower probability drop out. Dropout more likely among Han, those with >30 min travel time to clinic and those living with people who use drugs.</p>	<p>Highlights the role of programmatic and community factors in drop out. As a result of findings, 8 mobile MMT units were established in Yunnan province to help mitigate drop out. Higher drop out among ethnic minorities suggests that there might be prejudice among programs.</p>
<p>Coviello D, Zanis D, Wesnoski S, et al. The</p>	<p>Philadelphia. Randomized prospective cohort design. 128 participants; randomly</p>	<p>At 6 months post-baseline, 29% of intervention had re-enrolled in MMT compared to 8% of control (OR=5.8,</p>	<p>Findings demonstrate the utility of outreach case management to help re-enroll people with heroin</p>

<p>effectiveness of outreach case management in re-enrolling discharged methadone patients. Drug and Alcohol Dependence. 2006;85: 56-65.</p>	<p>assigned at 90 days post discharge from three MMT programs, to receive a passive referral (<i>n</i>=52) (control) or 6 weeks of outreach case management (<i>n</i>=76) (intervention), designed to help motivate and coach patients to re-enter MMT. Outcomes: reenrollment</p>	<p>CI=1.6-20.8, <i>p</i>=0.008). Intervention also had fewer positive opiate and cocaine tests as compared to control. 73% of discharged MMT patients had relapsed to heroin use at 90 days.</p>	<p>dependence who have dropped out of treatment. Even brief OCM- in this case one 45-minute session followed by phone calls, increased re-enrollment. Could have been higher, but there were waitlists at the MMT. Results highlight the need for FU procedures.</p>
<p>Gerra G, Saenez E, Busee A, et al. Supervised daily consumption, contingent take-home incentive and non-contingent take home in methadone maintenance. Progress in Neuropharmacology & Biological Psychiatry. 2011; 35: 482-489.</p>	<p>Italy. 1-year prospective comparative cohort study. Three arms: A) supervised daily consumption 6-days a week with take home Sunday (<i>n</i>=100; 82% male) B) Contingent take-home incentives (<i>n</i>=100; 84% male) C) Non-contingent take home (<i>n</i>=100. 81% male). Each of the arms was based in separate MMT clinics from different provinces, recruited participants from their clinics. All participants heroin dependent for 4+ years. Primary outcomes of interest: retention in MMT, diversion, ODU, psychiatric condition, unlawful activity.</p>	<p>Average dose: 68.1±16.5 mg (mean+SD). After 12 months, 60.66% of all study participants were retained in treatment. 58% retention in group A, 74% in group B, and 50% retention in group C; a significantly lower drop out rate among group C compared to group A (OR=0.535, <i>p</i>-value=0.020); but no sig difference between group B and Group C. OF those who completed the study, 74.03% (<i>n</i>=134) Showed negative urine tests at 12 months. Risk of pos urine tests highest among Group C. Highest risk of crime/violence in Group C, about 3.5x the risk as compared to Group C, although no sig greater risk as compared to Group B. Group C self-reported almost 6x the likelihood of selling MMT as group A, with no sig difference from Group B. Both Groups A and B showed greater improvement in psychiatric symptoms.</p>	<p>Results highlight the benefits of contingent take-home doses, where clients first spend at least one-month drug free, as proved by urine analysis, and present daily for MMT. Clients in this group B showed the highest retention and psy. Improvements on par with daily observed MMT. In contrast, results highlight the danger of early THD, without behavioral contingencies, in some cases begun immediately upon MMT initiation. Early, non-contingent THD might fail to offer clients the support that they need, leading to greater diversion (meaning clients not getting appropriate MMT dose), lower retention, lower psy. Improvements, and greater unlawful activity.</p>
<p>Goldstein M, Deren S, Kang S et al. Evaluation of an alternative program for MMTP drop outs: impact on treatment re-entry. Drug and Alcohol</p>	<p>East Harlem, NYC. Randomized comparative prospective cohort study (<i>n</i>=175; 71% male). All participants had recently dropped out of MMT within the prior 12-months. Intervention group (<i>n</i>=111) received street outreach and</p>	<p>Intervention group: 25% received all three components while 87% were exposed to at least one component. In univariate analysis, 72% those who attended 2-or more counseling sessions; 74% re-entered MMT as compared to 53% of intervention who attended</p>	<p>Findings indicate that peer street outreach combined with group sessions can be effective in re-enrolling MMT dropouts into services. However, results need to be interpreted with caution, as it was not possible to randomize levels of participation and self-selection bias is a limit</p>

<p>Dependence. 2002; 66: 181-187.</p>	<p>cognitive individual and group therapy. Control group (<i>n</i>=64) received no outreach or counseling services, but was eligible to re-enter MMT at any point of their own volition and received info during baseline intake about services available in the area. Primary outcomes of interests: MMT re-entry, nag urine analysis; both at 6-months</p>	<p><2 and 50% of comparison; sig for >2 (<i>P</i>=0.03, Chi-square test). In multi-variate analysis, those who attended >2 groups were more likely to have negative urine analysis as compared to control group and intervention with <2 groups.</p>	<p>of the study, as participants in the intervention arm could choose how much to participate in services. Thus intervention members who participated in two or more activities and were more likely to re-enroll might have been more likely to re-enroll regardless of intervention.</p>
<p>Gu J, J Lau, H Xu et al. A randomized controlled trial to evaluate the relative efficacy of the addition of a psychosocial intervention to standard-of-care services in reducing attrition and improving attendance among first-time users of MMT in China. AIDS Behav. 2013. DOI 10.1007/s10461-012-0393-9</p>	<p>China. Randomized control trial among first time newly admitted MMT users (<i>n</i>=288; 92% male) comparing the addition of a 3-phase psychosocial intervention involving patients family and addressing MMT related misconceptions (<i>n</i>= 146) with standard care (<i>n</i>=142). Outcomes: attrition, days of attendance, pr attrition. 6-month intervention. Attrition: not presenting one month prior to end of study.</p>	<p>Intervention involves 17 individual sessions and 3 family sessions, each about 30 minutes and administered by trained clinic staff. Median attendance 14-15 sessions out of 20 total. Intervention showed sig lower likelihood of attrition (HR-0.55), lower estimated probability of attrition at 1-year (0.35 vs. 0.55) and sig higher median number of days of attendance (147 vs. 91).</p>	<p>Findings suggest that brief intervention, with family support, can help reduce attrition and increase attendance for MMT patients. Shows feasibility in low resource setting (3-4 frontline workers serving 200-300 clients per day). Limitation: dosing not measured, thus impossible to know if that was different among the clinics or what impact it had on outcomes</p>
<p>Gu J, Xu H, Lau J et al. Misconceptions predict dropout and poor adherence prospectively among newly admitted first-time methadone maintenance treatment clients in Guangzhou, China. Addiction. 2012; 107:</p>	<p>Guangzhou, China. Prospective cohort study (17.6 months follow-up). 3 clinics, 158 newly admitted clients. Dependent Variables: background characteristics, history of drug use, MMT related misconceptions. Independent Variables: dropout and poor adherence. Dropout measured as missing at least one month prior to the study's completion date. Poor adherence: attending <90 days in</p>	<p>High dropout: 51.3% and high prevalence poor adherence: 62%. Misconceptions very prevalent: 98.2% had at least one of the four misconceptions and 50.6% had all four (1. Agree that MMT primarily for detox 2. Agree that MMT intended for 2-3 month use as detox and then quit 3. Disagree that MMT requires long term or lifetime treatment 4. Agree that one should reduce dosages as MMT harmful to health). Misconceptions significantly</p>	<p>Results highlight the need for greater patient education providing accurate information about MMT and testimonials from MMT users. Findings also suggest the need for interventions for service providers. While national guidelines require counseling along with MMT, in practice staff lack the time and training to accurately counteract misconceptions around methadone and might also hold the misconceptions.</p>

1641- 1649.	prior 6 months.	predict dropout [HR=3.80 for 2-3 misconceptions and HR= 7.13 for 4 misconceptions] and significantly predict poor adherence [RR=4.3 for 2-3 misconceptions and RR=4.4 for 4].	Discussion brings up the need for accurate information on MMT in detox settings, as many of the study participants had been referred to MMT from compulsory detox.
Havens J, Llewellyn C, Ricketts E, et al. The effect of a case management intervention on drug treatment entry among treatment-seeking injection drug users with and without comorbid antisocial personality disorder. 2007; Journal of Urban Health, 84(2)	Baltimore, Maryland. Randomized control trial with 1-month follow-up. n=162 (67.9% m). Intervention: Strengths-Based Case Management model (SBCM) or passive referral. SBCM: 1. Engagement 2. Strengths assessment 3. Personal case planning 4. Resource acquisition. Antisocial personality disorder (ASPD) prev. 22.8%. Outcomes: MMT entry.	IDU w ASPD receiving >25 min SBCM 3.51 times more likely to enter MMT than those who received <5 min., over an average of 1.6 contacts with CM, after adjusting for race, treatment site, and intervention.	IDU with ASPD were just as likely to enter MMT as IDUs without. IDUs with comorbid ASPD who received SBCM were much more likely to enter treatment than those receiving less time with case manager, suggesting the influence that even brief CM can have on treatment entry
He Q, Xiaorong W, Xia Y et al. New community-based methadone maintenance treatment programs in Guangdong, China and their impact on patient quality of life. Substance Use & Misuse. 2011; 46: 749-757.	Guangdong, China. Prospective cohort study with n=516 (95% male) study participants from 2 MMT clinics, with baseline and follow-up at 3 and 6 months. Outcomes: retention, QOL indicators across 4-domains: physical function, psychological function, withdrawal symptoms, and social function. Predictors: demographic factors, current family relationships, living situation, drug use history, and time in treatment.	55.2% retention at 6-months. Of dropouts, 6% died, 30% arrested/detained for OD use, 32% emigrated/moved, 25% off MMT and OD, and rest lost to FU. For those who completed study, stat sig improvements across all 4 domains. Changes from 3-6 month not sig. 'Getting along well with family' associated with improvements in physical, psy., and social functions. Work associated with improved scores, as is longer time in treatment. Longer history of DU associated with lower scores. Other predictors not sig.	Results point to the influence that family relationship and employment have on QOL indicators for MMT patients. Low female participation, high arrest for DU and high drop out are limits to the study. Dropout rates similar to other studies in China, as is female participation level. Findings point out the need to adjust current policing practices, which keep people away from MMT due to fear of arrest and drive away women (est. 15% of IDU pop) who experience greater shame
Holland R, Matheson C, Anthony G et al. A pilot randomized	Scotland. Randomized controlled trial of 3 supervision models MMT. Participants (n= 60) all previously	Results are not statistically sig as small sample is not powered for inference. 77% retention at 3-months. Decrease in OD use in	Despite the small sample, findings still offer insight that is useful for programmatic inference. Results suggest that

<p>controlled trial of brief versus twice weekly versus standard supervised consumption in patients on opiate maintenance treatment. Drug and Alcohol Review. 2012; 31: 483- 491.</p>	<p>completed 3-months of supervised daily MMT consumption and were randomized into one of 3 arms for 3-months prospective follow-up: i) no supervision THD (<i>n</i>=19) ii) twice weekly supervision (<i>n</i>=21) iii) daily supervision (<i>n</i>=20). Key process measures: recruitment rates, follow-up rates, treatment fidelity. Outcome measure: treatment retention, OD Use.</p>	<p>groups ii and iii; however no decrease in group i. Retention best among those unsupervised THD (89%) with a seeming dose/response relationship as supervision increases (retention ii= 86% and retention iii=75%).</p>	<p>greater supervision does not result in better outcomes or treatment retention. Possibly because presently daily at the clinic is unrealistic for many and prevents people from holding jobs. Anecdotal information suggests that stigma is lower with THD and lower supervision.</p>
<p>Hser Y, Li J, Jiang H et al. Effects of a randomized contingency management intervention on opiate abstinence and retention in methadone maintenance treatment in China. Addiction. 2011; 106: 1801-1809.</p>	<p>Shanghai and Kunming, China. Randomized comparison study looking at motivational incentives in a group of MMT patients from 3 clinics in Shanghai and 2 clinics in Kunming Province. Sample of <i>n</i>=319 (23.8% female) randomly assigned into usual care with incentives (<i>n</i>=160) or without incentives (<i>n</i>=159). Intervention group either receives increasing chances for prizes based on negative urine or consecutive attendance. Outcomes: treatment retention and negative urine sample.</p>	<p>Results varied by province; intervention group stronger effect in Kunming with sig greater retention (75% vs. 44%) and no sig diff in Shanghai (90% vs. 86%). Greater prevalence of negative urine among intervention than control among all groups, with slightly stronger effect in Kunming. (74% versus 68% in Shanghai, 27% versus 18% in Kunming) Average total prize was about \$55 per participant.</p>	<p>Computerized draws for a pre-determined probability of an encouragement, small win, medium win or large win, combined with increasing number of draws seems to be strong incentive for behavior change; however greater impact among Kunming participants given the greater pov. of the region- not as strong of an effect in Shanghai; might want to consider prize gradients based on real value. Also more psy. support in Shanghai; which could explain better overall outcomes.</p>
<p>Jones H, Tuten M, O-Grady K et al. Treating the partners of opioid-dependent pregnant patients: feasibility and efficacy. The American Journal of Drug and Alcohol Abuse. 2011; 37: 170-178.</p>	<p>Baltimore. Randomized comparison study with <i>n</i>= 62 non-treatment seeking opiate using male partners of pregnant women. Intervention (<i>n</i>=45) involved 4-compents: motivational enhancement therapy (MET), case management and counseling, prenatal and child development counseling and education, and</p>	<p>High acceptance rate into he study (11% declined). Participants in the intervention compared with usual care showed increased treatment retention, transient decreases in heroin use (but greater use during the post intervention FU), increased involvement in recreational activities, less reliance on public assistance and increased social support of pregnant partners. However treatment effects</p>	<p>Results show that interventions with male partners are acceptable and can be effective at enrolling and retaining male IDU in MMT. They also highlight the need for ongoing free or low cost treatment, as post intervention most men left treatment rather than following up with referrals and continuing MMT. Findings are promising in that they show a way to engage men who</p>

	contingency management vouchers, in addition to either 6 months of MMT or inpatient detox plus 6 months outpatient. Comparison ($n=17$) received referral to free MMT or detox, standard of care. Outcomes of interest: treatment retention, drug use, employment, illegal activity, HIV-risk, depression, partner relationship quality.	not sustained during post-intervention follow-up period.	otherwise were not seeking MMT in services and improving their relationship with a pregnant partner. Effects on women outside scope of this study.
Kidorf M, King V, Gandotra N et al. Improving treatment enrollment and re-enrollment rates of syringe exchangers: 12-month outcomes. Drug and Alcohol Dependence. 2012. 124: 162-166.	Baltimore, MD. Randomized comparison study ($n=281$; 71% m) participants referred through BNEP assigned to either: 1. Motivated referral condition (MRC): 8 indiv. motivational enhancement sessions + 16 groups) 2.) MRC +Incentives for attending sessions and enrolling in treatment 3.) Standard Referral Condition (SRC). 12-month FU. Outcomes: MMT enrollment and retention, any treatment, drug use	Results generally extended over 12-months (Kidorf 2009). MCR+I more likely to enroll in MMT than MRC only or SRC participants (46% vs. 26.6% and 24.7%), and to re-enroll after discharge. MRC+I reported more days of treatment, less heroin and IDU use. Higher number of MRC+I who entered treatment, dropped out and re-enrolled as compared to MRC-only or SRC (52.5% vs. 28.6% vs 21.3%).	Harm reduction outcomes for SEP participants can be increased- particularly in terms of enrollment and retention in MMT- via incentives and motivational counseling. While dropout from treatment high over study period, re-enrollment among that group about half among intervention participants.
Kidorf M, King V, Neufeld K, et al. Improving substance abuse treatment enrollment in community syringe exchangers. Addiction. 2009; 104: 786-795.	Baltimore, MD. Randomized comparison study ($n=281$; 71% m) participants referred through BNEP assigned to either: 1. Motivated referral condition (MRC): 8 indiv. motivational enhancement sessions + 16 groups) 2.) MRC +Incentives for attending sessions and enrolling in treatment 3.) Standard Referral Condition (SRC). 4-month FU. Outcomes: MMT enrollment and retention, any treatment, drug use	MRC+I sig. more likely to enroll in any type of tx compared to MRC and SRC (52.1% vs. 31.9% pr 35.5%) and more likely to enroll in MMT (40.4% vs. 20.2% vs. 16.1%). MRC+I reported less heroin and injection use than other arms. Dose-response relationship btwn MRC attendance and MMT enrollment: highest attendance (12-24 session) had 80% enrollment.	Findings highlight the effectiveness of incentives + motivational counseling to increase MMT enrollment and to decrease risky DU. Results also suggest a dose-responses relationship, thus incentives to attend MRC as important as incentives to enroll in treatment- could also be that people most ready for MMT would have attended more sessions regardless of I.

<p>Lin H, Chen K, Wang P et al. Predictors for dropping-out from methadone maintenance therapy program among heroin users in Southern Taiwan. Substance Use & Misuse. 2013; 48: 181-191.</p>	<p>Taiwan. Prospective cohort study with 18-month follow-up. Examines predictors of MMT retention among IDUs (<i>n</i>=368; 86% male). Outcomes: retention rate, early discontinuation.</p>	<p>41.6% of clients staid in MMT by 12-months and only 32.3% of participants remained in treatment at 18-months. High heroin expenses, more severe harm from heroin use, perceived lower family support, lower methadone dose at 3-months after starting MMT all increased risk of drop out. 65% of clients took <60 mg at 3-months.</p>	<p>Results highlight the high rate of drop out in MMT programs in Taiwan and suggest the need for both greater psychosocial support (perhaps involving family as perceived family support increases retention) and higher MMT dosing. Other lit shows that dose of >60mg predicts retention, here most received <60mg.</p>
<p>Lin C, Wu Z, Rou K et al. Structural-level actors affecting implementation of the methadone maintenance therapy program in China. Journal of Substance Abuse Treatment. 2010; 38: 119-127</p>	<p>China. 6-month prospective cohort study with 28-MMT clinics located in Zhejiang and Jiangxi provinces with 28-service providers and 30 randomly selected clients from each clinic for a total of (<i>n</i>=560; 84% male) client study participants. Outcomes: retention, coverage, OD use. Predictors: clinic level factors including operating hours, client incentives, staffing, services offered, staff training.</p>	<p>Overall retention: 51.4% (45%-60%) with 9.1% (5%-15%) coverage of estimated eligible population. Large variation among clinics, with the smallest service 35 clients and the largest serving 420 clients. Each clinic had an average of 6-7 staff. 60% closed during the noon hour and 1/3 open less than 6 hrs/day. Half of clinics had one or more provider who received national training, the other half did not. Clinics open >8 hour/day, >2 types of comprehensive services had sig more clients, higher retention rates, and greater coverage. Incentives for compliance predicted better retention and coverage.</p>	<p>Results highlight the role of programmatic and structural factors in client retention, clinic coverage, and reducing other drug use. Not surprisingly, clinics that offered more psychosocial support, such as group and individual counseling, family counseling, HIV education, had greater retention compared to ones that did not. Client monetary incentives, including free MMT, supported retention in exchange for compliance and bringin in new clients.</p>
<p>Liu E, Liang T, Shen L, et al. Correlates of methadone client retention: A prospective cohort study in Huizhou province, China. International Journal of Drug Policy, 2009. 20: 304- 308.</p>	<p>Huizhou, China. Prospective cohort study (<i>n</i>=1003, 74% male) IDU and non-IDU former heroin using clients at 8 MMT clinics. Follow-up over 14-month period. Outcomes: client retention. Predictors: treatment dosage, client level factors.</p>	<p>Retention 93.5% at one-month, 88.5% at second month, 57.4% at 12-months, and 56.2% at 14-months. For 79.4% of participants mean dose <50 mg/day. Higher methadone dose was found to predict higher client retention rate (>45 mg shows incremental increase). Retention was also associated with intention to remain in treatment, no previous MMT and clinic attended.</p>	<p>Based on findings, recommend a minimum daily dose >65 mg/day for Chinese methadone patients. The association with no previous MMT and better retention could be a marker of people who struggle with treatment, as those with previous MMT relapsed. Wide variation between clinics with retention speaks to programmatic factors that could increase retention.</p>

<p>Mohammad N, Abu Bakar N, Musa N et al. Better retention of Malaysian opiate dependents treated with high dose methadone in methadone maintenance therapy. Harm Reduction Journal. 2010. 7; 30.</p>	<p>Malaysia. Prospective cohort study with 6-month follow-up (<i>n</i>=64; 100% male). 2+ years of heroin use. Directly Observed Therapy Supervision from either NGO run clinic or private practice. Outcomes: treatment retention.</p>	<p>Retention at 6-months= 35= 54.69% with 29= 45.3% defaulting. Higher doses were sig. correlated with higher retention rate and reduced probability of re-injecting. Of those retained, 80% were on >80 mg of methadone and the remainder received 40mg-79 mg.</p>	<p>Findings suggest that higher dosing is needed as retention rates only about half at 6 months. Discussion explores some of the reasons physicians gave for lower prescription: smaller body size or ethnicity might make it harder to process MMT; however this study suggests otherwise</p>
<p>Nguyen T, Nguyen L, Pham M et al. Methadone maintenance therapy in Vietnam: An overview and scaling up plan. Advances in Preventative Medicine, 2012. Doi: 10.1155/2012/732484.</p>	<p>Vietnam. Prospective programmatic analysis of MMT programs from HCMC and Hai Phong, the two longest running programs (<i>n</i>= 965; 95% male) with FU at 3, 6, 9 months. Outcomes of interest: retention, risk behaviors, HIV incidence, and QOL indicators.</p>	<p>In total, 44 clinics in 11 provinces with <i>n</i>=9611 clients provide MMT in Vietnam, dose ranging from 5mg -470mg, with avg. 109 mg. From analysis: 90% retention at 9 months, drop in HIV risk behavior (reported 96% condom use), only 1 HIV seroconversion, reduction in conflict with family, reduced crime (as reported by police), improved mental health.</p>	<p>Results show the feasibility and effectiveness of MMT in Vietnam, similar benefits that MMT offers patients and their communities in other contexts. While MMT has been expanded and scaled up rapidly, the paper highlights some of the challenges particularly around training of staff. Data not available nationwide at this time.</p>
<p>Nuttbrock L, Rosenblum A, Magura S et al. Linking female sex workers with substance abuse treatment. Journal of Substance Abuse Treatment, 2004. 27: 233-239.</p>	<p>New York City. Randomized intervention with street based sex workers in (<i>n</i>=179). Intervention: enhanced outreach and referral service. Control: outreach and standard referral. Outcomes of interest: detox, MMT enrollment and retention, outpatient/inpatient treatment enrollment and retention. Predictors: demographics, sex work, previous treatment, drug use history</p>	<p>144 women successfully followed up for 6 months. 35% detoxified, 43.1% of current heroin users received MMT, 35.4% received some other type of drug treatment. Detox during follow-up was associated with heroin dependence and ever lifetime detox. MMT was associated with mandated treatment and Hispanic ethnicity. Other treatment negatively associated with degree of involvement in sex work. Crack use at 95% in past 30 days. No sig difference in treatment outcomes intervention vs. control.</p>	<p>Identify social isolation and criminal status as barriers to treatment for CSW. High rates of previous experiences with detox and treatment, not surprising given the high amount of substance use in the population and the fact that treatment free/low cost for poor people in NY. The high treatment rates at follow-up, while no diff among intervention and control, speak to the effectiveness of street based outreach for CSW combined with no cost care.</p>

<p>Peles E, Schreiber S, Adelson M. Factors predicting retention in treatment: 10-year experience of a methadone maintenance treatment (MMT) clinic in Israel Drug and Alcohol Dependence. 2006. 82: 211-217.</p>	<p>Israel. Prospective cohort study with 1-year follow-up ($n=492$; 72.8% male). Outcome of interest: patient retention in MMT, methadone dose, and urinalysis results.</p>	<p>1-year retention prevalence 74.4%. 65.8% negative urinalysis. Predictive factors for 1-year in MMT: daily MMT dose >100 mg (OR=1.9); negative urine analysis (OR=2.0), and being a parent when admitted (OR=1.4). 63.4% of sample had children upon entry to the program.</p>	<p>Results suggesting the importance of high dosing for adherence are similar to those found in other studies. The lack of use of OD is intuitive, perhaps a marker of commitment to treatment. The predictive effect of being a parent is new and suggests that children are a motivating factor for staying in MMT</p>
<p>Sarasvita R, Tonkin A, Utomo B et al. Predictive factors for treatment retention in methadone programs in Indonesia. Journal of Substance Abuse Treatment. 2012; 42: 239-246.</p>	<p>Prospective cohort study. 6-month follow-up. 178 MMT clients from three clinics, two in an urban setting (Jakarta) and one in a rural setting. Predictors examined: program, client SES, social network, and clinic accessibility. Outcomes: duration of treatment in days. Dropout considered if clients missed 5 consecutive doses. Possible to readmit.</p>	<p>Retention at 3 month: 74.2% and retention at 6 month: 61.3%. Strongest predictor of retention was methadone higher dose (60 mg) followed by an interaction factor of Take Home Dose (THD) and Clinic Experience. Older age, perceived accessibility, and clients' belief in the program were all significant predictors of retention.</p>	<p>Results suggest that promotion of take home dose could be a strategy to increase retention of clients in MMT. Among clients at the two more established urban clinics, THD had 4x the predictive power, perhaps due to the ability of clinic staff to assess readiness for THD and means of THD (family member presence required for >1 THD). Also in urban areas THD more important as transport and accessibility of clinic tempered by traffic.</p>
<p>Strain E, Bigelow G, Liebson I et al. Moderate vs high dose methadone in the treatment of opioid dependence: A randomized trial. JAMA, 1999. 281; 11: 1000- 1005.</p>	<p>Baltimore, MD. 40-week randomized, double blind, clinical trial from June 1992- October 1995 ($n= 192$; 64% men). MMT either 40mg/day- 50 mg/day or 80mg/day-100mg/day.</p>	<p>Other drug use decreased 90% for both groups compared with baseline; however high dose group had significantly lower urine positive results. No significant differences in retention rate between the two groups, contrary to earlier research.</p>	<p>Findings show that higher dose MMT (>80 mg/day) significantly reduces the risk of illicit opiate use. Surprisingly there was no difference in client retention rates between the two groups.</p>
<p>Strathdee S, Ricketts E, Huettner S, et al. Facilitating entry into drug treatment among</p>	<p>Baltimore. Randomized comparison trial of strengths based case management (intervention) versus passive referral (control) to free MMT clinic.</p>	<p>Overall, 34% of those referred enrolled in MMT (40% intervention vs. 26% control, $p=0.03$). IIT more likely to enter within 7-days. TOT analyses reveal that people with more than</p>	<p>Brief, low-cost community based case management significantly increased enrollment in MMT among NEP attendees. Promising as few of those who are interested and receive</p>

<p>injection drug users referred from a needle exchange program: Results from a community-based behavioral intervention trial. Drug and Alcohol Dependence. 2006. 83: 225-232.</p>	<p>Treatment seeking NEP clients (<i>n</i>=245; 69% Male) were referred to MMT with 7-day follow-up. Outcomes: enrollment in MMT. SBM: involves accompanying client to intake and identifying and building on sources of resiliency.</p>	<p>30 minutes or more of case management within 7 days were 33% more likely to enter treatment. Provision of transport: key-determining element.</p>	<p>referral subsequently enroll, this study suggests that with additional resiliency based case management and transport can increase MMT enrollment.</p>
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Appendix B: Interview Guide IDU_ English

Introductory Script: Good morning/afternoon/evening thank you so much for participating in this interview. I am very interested in learning about your experiences with health services and any continuing health service needs you may have. The information that you share might help to improve access to HIV prevention and treatment services for people who use and inject drugs in Dar es Salaam. Before we begin, I would like to remind you that participation in this interview is voluntary and anything you say will be kept confidential. With your permission your responses will be audio recorded, however they will only be shared with other people as part of a summary report, with no names or other identifying information. You can stop the interview at any point or pass on questions you would prefer not to answer. Before we get started, do you have any questions for me?

Part 1: Family and History of Drug Use

1. How are you doing today?
2. Let's start by talking about your family. Do you have any children?
 - a. How many?
 - b. How old are they?
 - c. Do they live with you?
 - d. If not, where do they live?
3. Are you married or in a relationship?
 - a. How long have you been together?
 - b. How did you meet?
 - c. Does your partner use drugs?
 - d. Did your partner use drugs in the past?
 - e. Is your partner in drug treatment?
 - f. If your partner is in drug treatment, did you start treatment together?
 - g. Who initiated treatment and why?
 - h. If your partner uses drugs and is not in drug treatment, why not?
4. If you are not in a relationship, why not?
 - a. Can you tell me about your last relationship?
 - b. Why did it end?
 - c. Did your last partner use drugs?
5. Tell me about your experiences with drug use.
 - a. When did you start using drugs?
 - b. Why did you start?
6. How has your drug use affected your relationship with your romantic partner (past or present)?
 - a. Did you use drugs together?
 - b. How did your partner feel about your drug use?
 - c. What affects, if any, do you think your drug use had on your ability to form lasting relationships?
7. How did your drug use affect your relationship with your children?
 - a. Do your children know that you used drugs?

- b. If yes, how does that make you feel?
- 8. Can you describe to me the last experience you had when a family member treated you different because of your drug use?
 - a. How did that make you feel?
 - b. Does that kind of treatment happen often?
- 9. How has drug use affected your position in your community?
 - a. Did you neighbors suspect your drug use?
 - b. Did they treat you different because of your drug use? Can you give an example?
- 10. How has your drug use affected your employment opportunities?
 - a. Did you have a different job before you began using drugs?
 - b. How did you support yourself when you were using drugs?
 - c. How do you support yourself now?

Part 2: Experiences with Health Services

Part 2 A: MAT Program/NGO Programs

Interviewer Note: For study participants that are not in MAT, replace *MAT* with the *NGO* that they attend and *methadone* with the type of *support services* they receive.

- 11. Tell me about why you started the MAT program.
 - a. What was your motivation to begin treatment?
 - b. How did you learn about MAT?
 - c. How long have you been in the program?
- 12. What do you like about being on methadone?
 - a. Can you give me an example of the best thing about methadone?
- 13. What is the hardest part about being on methadone?
 - a. Are there any difficulties? Can you give me an example?
- 14. How has being on methadone affected your relationship with your partner?
 - a. Does your partner know you are on methadone?
 - b. Are they supportive? Why or why not?
 - c. Can you give me an example of how they are supportive or unsupportive?
- 15. How has being on methadone affected your relationship with your children?
 - a. Do you children know that you are on methadone?
 - b. Do you talk with them about your treatment? Why or why not?
- 16. Since starting treatment, have you ever stopped using methadone?
 - a. Why?
 - b. What happened?
- 17. Do you know anyone who has dropped out of the program?
 - a. Why?
 - b. What happened?
- 18. Do you have a friend who uses drugs and could benefit from MAT but is not in treatment?
 - a. Tell me about your friend? Man or woman? Age?
 - b. Why do you think they are not in treatment?
 - c. What prevents them from starting treatment?

Part 2 B: Reproductive Health Care Services

Transition Script: Now I am going to ask you about your experiences with reproductive health services. I am interested in learning about where you go for care and any service needs you might have. Some of the questions are very personal and I really appreciate your responses.

19. Where do you or women that you know go for family planning services, such as birth control?
 - a. Tell me about your experiences at the clinic. Have you ever experienced discrimination or stigma because they think you are/were a drug user?
 - b. Do the health care providers know that you use methadone? How do they know?
 - c. Do you think they treat people differently who is on methadone?
20. Before you began methadone, when you were using drugs, did you or your partner use birth control?
 - a. What type?
 - b. Where did you or they go to get it?
21. If you or your partner has had a baby, where did you or she deliver the baby?
 - a. Was this when you were using drugs?
 - b. Did you have any difficulties?
 - c. If you were to have another baby, where would you deliver the baby?

Part 2 C: Intimate Partner Violence Services

Transition Script: Now I am going to ask you about any experiences you have had with violence. I am interested in learning about how programs can better help survivors of violence. These questions are very sensitive and I really appreciate your responses.

22. Are any of the people you know who use/used drugs in romantic relationships with people who hit, kick or injure them?
 - a. Can you tell me about the abuse? How did you learn about it?
 - b. Have they ever reported the abuse to the police?
 - c. What type of health care, if any, did they seek for the injuries?
23. Have you ever been physically assaulted (hit, kicked, or injured) by a romantic partner?
Have you ever hit, kicked, or injured a romantic partner?
 - a. Can you tell me about the abuse?
 - b. When did it happen?
 - c. How long did it go on?
 - d. Did you ever tell any family or friends?
 - e. Did you ever report the abuse to the police?
 - f. What type of health care, if any, did you seek for the injuries?
 - g. How did you end the relationship?
 - h. Have you received supportive counseling to help with your feelings about the abuse (from church, professional, nurse)?
24. When you were a child, did your parents ever hit, kick, or injure you? Each other?
 - a. Can you tell me about the violence? Was it ongoing? Rare?
 - b. When would it most likely happen?
 - c. Did you ever tell any other family or friends? Why or why not?
 - d. Did someone in your family ever report the abuse to the police? Why or why not?
 - e. What type of health care, if any did you or they seek for the injuries?

- f. How did the violence end?
 - g. Did you or your parents ever receive counseling from their church or a professional to help? If so, how was it helpful?
25. Has anyone you know ever been forced to have sex when they didn't want to? Can you tell me about it?
- a. When did it happen?
 - b. Who forced them?
 - c. How did you find out?
 - d. Did they tell anyone about it?
 - e. How did they get help?
 - f. Did they report the violence to the police?
 - g. Did they receive any health care after the incident? An HIV or pregnancy test?
26. Have you ever been forced to have sex when you didn't want to? Can you tell me about what happened?
- a. When did this happen?
 - b. Who forced you?
 - c. Have you told anyone else about this?
 - d. Did you report this violence to the police?
 - e. Did you receive any health care after the incident? An HIV test? Pregnancy test?
 - f. Have you spoken with a counselor about the incident?
 - g. Would you like a referral for counseling?

Part 2 D: Other Health Care Needs

Transition Script: Thank you so much for your answers so far. I am learning a lot from speaking with you and the most sensitive questions are over. Now I am going to ask you about other health care needs that you might have.

27. What are the main health concerns for people using drugs?
28. What are the main health concerns for people you know on methadone?
29. What, if any, health concerns do you have?
30. Have you had an HIV or TB test?
- a. Where did you go for the test?
 - b. How was the experience?
 - c. If needed, where do you go for treatment?
31. Have you ever experienced discrimination or stigma in a health care setting? If so, tell me about that.
- a. Where was it?
 - b. How did you know it was discrimination?
32. Have you ever received a referral for health services through (NGO or MAT program they mentioned working with)? If yes, please describe it.

Part 3: Future Aspirations

Transition Script: We are now at the last part of the interview. I am going to ask you about your hopes and dreams for the future. I am interested in learning about how support services can better help you reach your goals.

33. What are some of your personal goals for the future?
34. What are your hopes for your children and your family?
35. What could help you reach those goals?
36. Have you ever participated in a support group such as AA or NA?
 - a. If so, where do you go for the group?
 - b. How long have you been in it?
 - c. What is the best thing about the group?
 - d. The worst?
37. Have you ever participated in education or counseling groups through your NGO?
 - a. Tell me about them. What topics are covered in the group?
 - b. What topic would you like to learn about in the group?
 - c. Has your family ever attended a group session with you? Would you be interested in counseling or support services for family?
38. What type of economic or educational development classes have you participated in?
 - a. Do you know anyone who has taken advantage of the classes offered through MAT?
 - b. What types of classes or training would you be interested in, if the program were to add more?
39. Is there anything you would like to add?
40. Do you have any questions for me?

Closing script: *We have now come to the end of the interview. Thank you so much for everything that you have shared today. Your responses will help inform future programs and policy to help people who use drugs. I'm going to give you my card with my phone number on it. Please call me if you would like to follow up about anything from this interview. Also, if you know someone who might like to interview and share their experiences with us, please give them my card and have them call me.*

Appendix C: Interview Guide Provider _ English

Introductory Script: Good morning/afternoon/evening thank you so much for participating in this interview. I am very interested in learning about your experiences providing health services to people who use and inject drugs and ideas that you may have to improve service delivery. Before we begin, I would like to remind you that participation in this interview is voluntary and anything you say will be kept confidential. With your permission your responses will be audio recorded, however they will only be shared with other people as part of a summary report, with no names or other identifying information. You can stop the interview at any point or pass on questions you would prefer not to answer. Before we get started, do you have any questions for me?

Part 1: Work Overview

1. How are you doing today?
2. Tell me a little bit about how/why you got into this work.
 - a. How long have you been working with people who use and inject drugs?
3. What are some of the changes you have seen since you began?
 - a. For example, have you seen changes in the client population, such as growth or decline in the number of IDU and DU, younger or older client population, different health concerns.?
 - b. What about changes in program services? For example, expansion or loss of range of services, more funding, more agencies working with the population etc.
4. What's your day-to-day work like? Can you describe a typical day for me?
5. What are your favorite aspects of the job?
6. What are some of the biggest challenges of the job?

Part 2: Agency Overview and Client Population

7. Please tell me about the NGO/s you work with.
 - a. Mission and goals.
 - b. History of the NGO (For more senior staff or long term staff)
8. What services does your agency provide for people who use and inject drugs?
 - a. Probe for details, such as time and location of service provision (i.e. in the office, on the street etc, from a caravan)?
9. How many service providers work at your NGO?
 - a. What are their roles and responsibilities? For example, social worker, outreach workers, managers, etc.
10. Please describe your client population.
 - a. For example, do you work with sex workers, people living with HIV, men who have sex with men, IDU? Youth?
 - b. Do you work with similar numbers of men and women clients?
 - c. If no, why not? If yes, how does this happen (recruitment, quota etc)?
11. What are the family situations like of your clients?
 - a. Are most married?
 - b. Do they have children?

12. What are the living situations like of your clients?
 - a. Homeless?
 - b. Live with family?

Part 2: Connecting Clients to Health Services

13. How do clients from your NGO get connected to MAT?
 - a. Please walk me through the process, from outreach to enrollment.
14. Do you have clients who are eligible for MAT, but not ready for treatment?
 - a. Why do they not want to enter treatment?
15. Please describe a MAT client who is doing particularly well on methadone.
 - a. What supported their success? (i.e family support, commitment to treatment, work, religion etc.)
16. Have you had a client who was in MAT but dropped out?
 - a. Why? What happened?
 - b. Is this common?
17. What are the greatest concerns for your clients in MAT?
 - a. What are their main health problems? For example HIV, TB, STI etc.
 - b. Are these similar to the health concerns of clients not in MAT, but who use drugs?
18. Where do your clients go for other health care services?
 - a. For example, where do they go for HIV testing and treatment? Do many of your clients get HIV tested regularly?
 - b. Where do your clients go for family planning services (contraception, pregnancy tests, prenatal care, delivery)?
19. In as much detail as possible, please describe to me the last experience you had with a patient in need of additional services.
 - a. What type of services did they need?
 - b. How did you identify the needs?
 - c. How frequently do you encounter this?
20. Does your agency offer referrals to other services providers?
 - a. What is that process like?
 - b. Where did you refer them?
 - c. How do you follow-up to see if they utilize the referral?
21. If so, in as much detail as possible, please describe for me the last time you referred a patient for additional health care services.
 - a. What was that experience like?
 - b. Did the client utilize the referral?
22. Are any of your clients in physically violent romantic relationships?
 - a. For example, do any of your clients have partners who hit, kick or punch them?
 - b. In as much detail as possible, please tell me about that last client you encountered in a physically violent relationship.
 - c. How did you learn about this?
 - d. How did you respond?
 - e. Did the client leave the relationship?
 - f. If not, did the abuse end? How or why?

- g. About how many clients have you had in violent relationships?
- 23. Have any of your clients told you about a situation where they were forced to have sex with someone when they didn't want to?
 - a. Please tell me about the situation. How did you learn about this?
 - b. How did you respond?
 - c. Is this a common experience?

Part 3: Ideas to Improve Service Provision

Transition Script: Now we are approaching the end of the interview. I am interested in learning about ideas that you may have to improve service provision.

- 24. What changes or additions to services do you think could improve the experience for your clients?
 - a. For example longer hours, more counselors, additional services, MAT for smokers?
- 25. Less than a third of the clients in MAT are women. What do you think could help connect more women to MAT services?
 - a. Probe: night outreach, enlisting their partners, childcare etc
- 26. Is there anything else you would like to add?
- 27. Do you have any questions for me?

Closing script: We have now come to the end of the interview. Thank you so much for everything that you have shared with me today. Your responses will help inform future programs and policy to help with HIV prevention among people who use drugs. I'm going to give you my card with my phone number on it. Please call me if you would like to follow up about anything from this interview. Also, if you know of a client or a co-worker who might like to interview and share their experiences with us, please give them my card and have them call me.

Appendix D: Interview Guide IDU_ Kiswahili

Utangulizi: Habari za Asubuhi/mchana/jioni, nashukuru sana kwa kushiriki katika haya mahojiano. Tunataka sana kuju kuhusu uzoefu na huduma za afya. Na mahitaji yako ya muendelezo wa huduma za afya, taarifa utazotupa zaweza kusaidia kuboresha huduma za kinga na tiba kwa watu wanaotumia na kujidunga madawa ya kulevywa Dar es Salaam. Kabla hatujaanza ningependa kukumbusha kwamba ushiriki katika mahojiano haya ni hiari na chochote utachosema kitakuwa siri kwa ruhusa yako majibu yako yatarecodiwa kwenye kinasauti, na hata hivyo yatashirikishwa na watu wengine kwa taarifa fupi pasipo majina au kitu chochote kinachoweza kukutambulisha wewe. Unaweza ukayasimamisha mahojiano haya wakati wowote, kutojibu maswali ambayo hujisikii kujibu. Kabla hatujaanza una swali lolote?

Sehemu ya 1: Historia ya Familia na kutumia Dawa za Kulevywa

41. Unajisikiaje siku ya leo?
42. Tuanze kuongelea familia yako. Je una watoto
 - Wangapi
 - Wanamiaka mingapi?
 - Wanaishi na wewe?
 - Kama sivyo wanaishi wapi?
43. Je umeolewa/umeoa au uko katika mahusiano?
 - Mmekuwa pamoja kwa muda gani?
 - Mlikutana vipi?
 - Mwenzako anatumia madawa ya kulevywa?
 - Je mwenzako alitumia dawa za kulevywa zamani?
 - Je mwenzako yuko katika matibabu?
 - Kama mwenzako yuko kwenye matibabu, mlianza matibabu pamoja?
 - Nani alianza kuingia kwenye matibabu na kwanini?
 - Kama mwenzako anatumia dawa za kulevywa, kwanini hayuko kwenye matibabu?
44. If you are not in a relationship, why not?
 - Labda ni kwanini hauko kwenye mahusiano sasa?
 - Unaweza kuniambia kuhusu uhusiano wako uliopita?
 - Kwanini uliisha?
 - Je mwenzako alitumia madawa?
45. Naomba unielezee kuhusu uzoefu wako na dawa za kulevywa?
 - Ulianza lini kutumia?
 - Kwanini ulianza?
46. Mahusiano yako ya kimapenzi (zamani au sasa) yaliathirithiwaje na matumizi ya dawa za kulevywa
 - Mlitumia dawa pamoja?
 - Mwenzako alijisikiaje kuhusu matumizi yako ya dawa za kulevywa?
 - Je kunamdhari yoyote, kama yapo, kuhusu matumizi yako ya dawa za kulevywa na kutengeza mahusiano yanayodumu?
47. Utumiaji wako wa madawa uliathiri vipi uhusiano na watoto wako?

- Je watoto wanajua unatumia madawa?
 - Kama ndio, iyo inakufanya ujisikiaje?
48. Unaweza kunielezea tukio la mara ya mwisho ambako mwanafamilia, alikufanyia kitendo cha tofauti kisa unatumia madawa?
- ilikufanya ujisikiaje?
 - Ilikufanya ujisikiaje?
49. Madawa yameathiri vipi nafasi yako katika jamii?
- Je majirani zako walihisi unatumia madawa ?
 - Je waliwahi kukufanyia kitendo tofauti kwasababu unatumia madawa? Unaweza ukatoa mfano?
50. Matumizi yako ya madawa yaliathiri vipi ajira yako?
- je ulikuwa na kazi kabla haujanza kutumia madawa?
 - Ulijukimu vipi wakati unatumia madawa?
 - Unajikimu vipi kwa sasa?

Sehemu 2:Uzoefu wako na Huduma za Afya

2 A: Programu ya MAT

51. Nielezee jinsi ulivyojiunga na program ya MAT
- Ni nini hasa kilikupa motisha yakuanza matibabu?
 - Ulijuaje MAT?
 - Umekuwa kwenye program hii kwwa muda gani?
52. Unapendelea nini kuwepo kwenye tiba ya methadone?
- Unaweza ukanipa mfano mzuri au kitu kizuri cha wewe kuwepo kwenye tiba ya methadone?
53. Na nini kigumu kuwepo kwenye tiba ya methadone
- Je kuna magumu yoyote, unaweza ukanipa mfano?
54. Kuwepo kwenye tiba ya methadone imeathiri vipi uhusiano wako na mwenzi wako?
- Je mwenzi wako wanajua uko unapata tiba ya methadone?
 - Je wamekuwa wakikusapoti, kivipi?
 - Unaweza kunipa mfano ya jinsi wanavyokusapoti au jinsi ambavyo hawakusapoti?
55. Kuwepo kwenye tiba ya methadone imeathiri vipi uhusiano wako na watoto?
- je watotao wako wanajua kuwa unapata tiba ya methadone?
 - Je unaongea nao kuhusu matibabu yako? Kama ndio/ hapana ni kwanini?
56. Tangua uanze matibabu ya methadone , je kuna kipindi umewahi kuacha?
- Kwanini?
 - Kitu gani kilitokea?
57. Je unamfahamu mtu yoyote liwahi kuacha /kuondoka kwenye programu hii?
- kwanini?
 - kitu gani kilitokea?
58. Je wajua rafiki yako anayetumia madawa ambaye hayupo kwenye matibabu haya,na angefaidika na hii program ya MAT
- nielezee kuhusu rafiki yako? Mwanaume au Mwanamke?
 - kwanin unadhani hawako kwenye matibabu?

- Kitu gani kinawazuia kuwepo kwenye matibabu?

Sehemu 2B Huduma za Afya ya Uzazi

Sasa nitaenda kukuuliza kuhusu mapitio yako na huduma za afya ya uzazi. Ningependa kujinza ni wapi unaenda kwajili ya huduma na mahitaji yako ambayo unaweza ukawa nayo. Baadhi ya maswali ni ndani / siri sana and tutafurahia kupata majibu toka kwako.

59. Je wewe au wanawake wanaenda wapi kwajili ya hududa za uzazi wa mpango?
- Niambie kuhusu, uzoefu katika kliniki hiyo, je umewahi kunyayapaliwa kwasababu unatumia madawa?
 - Je watoa huduma za afya wanajua unatumia methadone? Wanajuaje?
 - Je unadhani wanawahudumia watu walioko kwenye methadone tofauti?
60. Kabla haujiunga na methadone , wakati unatumia madawa, je wewe au wewe na mwenzi wako mlitumia uzazi wa mpango?
- Wa aina gani?
 - Je ulipata wapi au walipata wapi?
61. Kama wewe au mwenzi wako alivyopata mtoto, je alijifungulia wapi mtoto?
- Je ilikuwa ni kipindi unatumia madawa?
 - Je ulipata matatizo yoyote?
 - Kama mtapata mtoto mwingine mtajifungulia wapi?

Huduma za Ukatili wa Wenzi

Sasa naenda kukuuliza mapitio yako na ukatili. Napenda kujifunza jinsi tunaweza kuwasaidia wahanga wa ukatili wa Kijinsia. Maswali haya ni ya ndani, na tutashukuru tukipata majibu toka kwako.

62. Je kuna watu unaowajua ambao wanatumia/walitumia madawa na wakawa kwenye uhusiano wa kimapenzi, wkawahi, kupigwa(ngumi,mateke) au kujeruhiwa na mpenzi wake?
- Je unaweza kunielezea zaidi? Ulifahamu vipi?
 - Je wamewahi kutoa ripoti polisi?
 - Je walipata huduma ipi ya afya, kama walienda kutibiwa majeraha?
63. Je umewahi kufanyiwa ukatili wa kimwili na mwenzi wako(kupigwa au kupata majeraha? Je umewahi kumpiga au kuumiza mpenzi/mwenzi wako?
- Je waweza kunielezea kuhusu ukatili huo?
 - Je ulitokea lini?
 - Kwa muda gani uliendelea?
 - Je umewahi kuwashirikisha rafiki au familia yako?
 - Je umewahi kutoa ripoti police?
 - Je ulienda kwa matibabu yapi kwajili ya majeraha?
 - Uliuvunjaje huo uhusiano?
 - Je umewahi kupata huduma za ushauri kuhusiana na ukatili huo(kanisani, wataalamu au manesi)
64. Angali ukiwa mtoto je wazazi wako wamewahi kukupiga au kuumiza? Au wenyewe kwa wenyewe?

- Unaweza kuniambia kuhusu huo ukatili, na ulikuwa unaendelea mara kwa mara?
 - Ilikuwa inatokea hasa wakati gani?
 - Je umewahi kuwashirikisha ndugu wengine wa familia au rafiki?
 - Je kuna mtu ambaye amewahi kurport familia yako polisi?
 - Ulipata huduma zipi za afya kwajili ya majeraha?
 - Je ukatili huu uliishaje?
 - Je wewe au wazazi wako wamewahi kupata msaada wowote kutoka kanisani/msikitini au watalaam?
65. Je kuna mtu anayetumia madawa ambaye unayemjua ambaye anatumia madawa /aliwahi kutumia dawa za kulevya aliyewahi kulazimishwa kufanya mapenzi?
- Ilitokea lini?
 - Na nani aliyemlazimisha?
 - Wewe ulijuaje?
 - Je walimwambia mtu yoyote?
 - Walipata vipi msaada?
 - Je waliripoti tukio hilo polisi?
 - Je walipata huduma yoyote ya afya baada ya tukio? Kuupima VVU na Ujauzito?
66. Je umewahi kulamimishwa kufanya mapenzi wakati hukutaka? Waweza niambia jinsi ilivyotokea?
- Je ilitokea lini?
 - Nani alikulazimisha?
 - Je umewahi kumuambia mtu yoyote kuhusu hili?
 - Je ulitoa taarifa hizi polisi?
 - Je ulipata msaada wa kiafaya? Kupima VVU? Kuupima ujauzito?
 - Je umewahi kuongea na mshauri kuhusu ili tukio?
 - Je utataka huduma ya ushauri?

Huduma zingine za Afya

Asante kwa majibu yako mpaka sasa. Nimejifunza mengi toka kwako na maswali yale ya ndani karibu yanafika mwisho. Sasa naenda kukuuliza kuhusu mahitaji yako ya huduma zingine za kiafya?

67. Je ni matatizo yapi hasa ya kiafya kwa watu wanaojidunga?
68. Je una matatizo yapi mengine ya kiafya?
69. Je umewahi kupima VVU au TB?
- Ulienda wapi kwa vipimo?
 - Je ilikuaje?
 - Kama ulihitaji matibabu ulienda wapi?
70. Je umewahi kunyayapaliwa au kunyanyaswa kwa aina yoyote kwenye huduma za afya?
- Ilikuwa ni wapi?
 - Ulijuaje umenyanyapaliwa?
71. Je umewahi kupata huduma ya rufaa kwajili ya matatizo ya kiafya kutoka kwenye asasi /MAT? Kama ndio waweza elezea.

Sehemu ya 3: Malengo yako ya Baadaye

Na sasa tuko katika sehemu ya mwisho ya mahojiano haya. Naenda kukuliza kuhusu malengo na ndoto zako za maisha ya baadaye. Ningependa kujifunza jinsi huduma ambatanisho zingeweza kukusaidia kufikia malengo yako?

72. Je una malengo au ndoto gani kwajili ya maisha yako ya mbeleni?

73. Vipi kuhusu matumaini yako ya mbeleni kuhusu familia na watoto wako?

74. Kitu gani kitakusaidia kufika hayo malengo??

75. Je umewahi kushiriki katika vikundi vya AA au NA?

- Kama ndivyo ni wapi unaenda kwajili ya icho kikundi?
- Ni kwa muda gani sasa upo kwenye icho kikundi?
- Ni kitu gani kizuri kuhusiana na kikundi?
- Na kipi kibaya?

76. Je umewahi kushiriki katika elimu au ushauri wa makundi kupitia asasi unayotokea?

- Naomba unielezee zaidi? Ni mada zipi zinajadiliwa katika makundi?
- Ni mada ipi ungependa kujifunza kwenye makundi yenu?
- Je familia yako imewahi kushiriki kwenye vikundi na wewe? Je ungependelea upate msaada zaidi wa ushauri nasaha kwa familia yako?

77. Je umewahi kushiriki katika mafunzo ya kielimu au ya kujiendeleza kiuchumi?

- Je unamfahamu mtu yoyote aliyefaidika na mafunzo yanayotolewa na MAT
- Je ni mafunzo yapi ambayo unapenda yangeongezwa kwenye program hii, kama kungekuwa na nafasi ya kuongezwa?

78. Je una lolote la ziada ambalo ungependa kuongezea?

79. Je una mawsali yoyote kwangu?

Hitimisho: Tumefika mwisho wa mahojiano yetu. Asante sana kwa yale uliyotushirikisha.

Majibu yako yatasaidia katika uboreshwaji wa huduma na sera za kuzuia maambukizi ya VVU kwa watu wanaotumia madawa ya kulevya. Nitaenda kukupa kadi yenye namba yangu ya simu. Tafadhali nipigie kama ungependa kufuatilia kuhusiana na mahojiano haya. Kama unamfahamu mtu yoyote ambaye angependa kutushirikisha mapitio, tafadhali mpe kadi hii na atupigie. Asante!

Appendix E: Interview Service Guide Provider_ Kiswahili

Kufungua masaili (soma kwa sauti): “Habari za asubui/mchana/jioni? Asante sana kwa kushiriki masaili haya. Ningependa sana kujifunza kuhusu mapitio yako kama mtoaji wa huduma za kiafya kwa wanaojidunga dawa za kulevya pamoja na mawazo yako yoyote kuhusu kuboresha utoaji wenu wa huduma hizo. Kabla ya kuanza ningependa kukukumbusha kuwa kushiriki au kutoshiriki masaili haya ni hiyari yako na kuwa chochote utakachoniambia kitabaki siri. Kwa ruhusa yako tutayarekodi majibu yako kupitia kinasasauti, lakini hata hivyo majibu yako hayatowafikia watu wengine isipokuwa katika ripoti ya kimuhtasari ambayo haihusishi jina lako wala maelezo yako yoyote tambulishi. Unaweza kuyasimamisha masaili haya wakati wowote au kutojibu swali lolote usilotaka kulijibu. Kabla hatujaanza, je, una swali lolote?”

Sehemu ya 1: Muhstari wa kazi yako?

28. Habari za leo?

29. Nielezee kidogo jinsi ulivyoingia kwenye hii kazi?

- a. Ni kwa muda gani sasa umekuwa ukifanya kazi na watu wanaotumia na kujidunga madawa ya kulevya?

30. umeona mabadiliko gani tangu umeanza?

- a. Kwa mfano umeona mabadiliko yoyote katika wateja wako, kama kukua au kushuka kwa idadi ya wajidunga na watumia unga, wateja vijana au wenye umri mkubwa zaidi, na matatizo mengine ya kiafya?
- b. Vip kuhusu mabadiliko katika huduma za program? Kwa mfano kutanuka au kupungua kwa huduma, ufadhili zaidi, asasi zaidi kufanya na kkikundi hiki cha watu?

31. Shughuli zako za siku hadi siku ziko vipi? Naomba unielezee jinsi siku yako kazini inavyokuwa kwa kawaida?

32. Ni mambo yapi unayoyapenda zaidi kuhusu kazi yako?

33. Ni zipi changamoto kuu unazopata katika shughuli zako?

Sehemu ya 2: Muhstasari wa Asasi na Wateja

34. Tafadhali nielezee kuhusu asasi unayofanya nayo kazi

- a. Mkakati na malengo
- b. Historia ya asasi(kwa wafanyakazi wa muda mrefu au weny nafasi za juu)

35. Asasi yenu inatoa huduma zipi kwa wajidunga?

- a. wapi , saa ngapi, na kwa jinsi gani(ofisini, mtaani au kutumia gari?)

36. Kuna watoa huduma wangapi wanaofanya kazi kwenye asasi yako?

- a. . Na kazi na wajibu wao ni upi? Kwa mfano, ustawi wa jamii, watoa huduma za nje na mameneja n.k.

37. Tafadhali nielezee kuhusu wateja wako.

- a. Kwa mfano unafanya kazi na wafanyabiashara ya ngono, watu wanaoishi na VVU, wanaume wanaofanya ngono na wanaume wenzao, wajidunga, Vijana?
- b. Je kuna mlingano wa idadi kati ya wanaume na wanawake?
- c. Kama hapa, kwanini, kama ndio, uwa inafanyikaje?

38. Wateja wako wengi huwa katika mazingira gani ya kifamilia?

- a. Wameolewa?

- b. Wana watoto?
39. Wateja wako wengi huishi katika mazingira gani?
- a. Hawana makazi?
 - b. Wanaishi na familia zao?

Sehemu ya 2: Kuunganisha Wateja na Huduma za Afya

40. Wateja wa asasi yako wanaunganishwaje na MAT?
- a. Tafadhali nipitisha kwenye hatua zote tangu kwenye outreach mpaka kujiandikisha.
41. Mna wateja ambao wanafaa au wanvigezo vya kujiunga MAT ila hawako tayari kwa matibabu?
- a. Kwanini hawataki kuingia kwenye matibabu?
42. Tafadhali nielezee mteja wa MAT ambaye anaendelea vizuri na methadone.
- a. Je kitu gani kilisaidia mafanikio yake? (Naamanisha sappoti ya familia, kazi, dini n.k)
43. Je kuna wateja wako waliojiengua na MAT?
- a. Kwanini? Kitu gani kilitokea?
 - b. I natokea mara nyingi?
44. Je, matizo makubwa kwa wateja wako ni yapi?
- a. Matatizo yao makuu ya kiafya? Mfano VVU, TB, Magonjwa ya Ngoni n.k
 - b. Matatizo hayo ya kiafya ni sawa na wateja ambao hawako MAT ila wanatumia madawa ya kulevya?
45. Wateja wako uwa wanaenda wapi kwa huduma za afya?
- a. Kwa mfano wanaenda wapi kwa upimaji na matibabu ya VVU? Je wateja wenu wanapima VVU mara kwa mara?
 - b. Wateja wenu uwa wanaenda wapi kwajili ya huduma za uzazi wa mpango, upimaji wa ujauzito, huduma za awali na kujifungua?
46. Kwa undani unavyoweza nielezee, mapitio yako ya mteja aliyekuwa anahitaji huduma za ziada?
- a. Walikuwa wanahitaji huduma gani?
 - b. Ulitambua je mahitaji yao?
 - c. Uwa kesi kama hizo zinajitokeza mara kwa mara?
47. Je, taasisi yenu inatoa barua za kupeleka wateja wenu kwa watoa huduma wengine?
- a. Utaratibu huo uko vipi?
 - b. Uliwaelekeza wapi?
 - c. Mnatumia utaratibu gani kuwafuatilia ili kujua kama wanazitumia barua hizo na kufika walipoelekezwa?
48. Kama ndio, naomba unieleze kiutondoti kabisa jinsi ilivyokuwa mara ya mwisho ulipotoa barua ya kupeleka mgonjwa aende kupata huduma za kiafya za ziada. Ilikuwa je?
- a. Je uzoefu huu ulikuaje?
 - b. Mteja wako alitumia ile rufaa?
49. Kuna baadhi ya wateja wako ambao wako kwenye mahusiano ya kimapenzi na wanapitia ukatili wa kimwili
- a. Kwa mfano, una baadhi ya wateja wako ambao wamewahi kupigwa, kupigwa teke au ngumi?

- b. Kwa undani, nielezee juu ya mteja wako wa mwisho aliyekuwa katika uhusioano wa ukatili wa kimwili.
 - c. Ulijuaje kuhusu hili tukio?
 - d. Mlimsaidiaje?
 - e. Je mteja wako aliondoka kwenye huo uhusiano?
 - f. Kama, hapana, ukatili huo uliishaje?
 - g. kama wateja wenu wangapi wapitia ukatili huu katika mahusiano?
50. Je kuna badhi ya wateja ambao wamewahi kukueleza, kwamba walilazimishwa kufanya mapenzi, wakati hawataki?
- a. Naomba unielezee kuhusu ili tukio?
 - b. Mlimsaidiaje?
 - c. Matukio yanayotokea mara kwa mara?

Sehemu ya 3: Mawazo ya Kuboresha utoaji Huduma

Sasa tunafikia mwisho wa mahojiano. Ningependa kujifunza mawazo uliyonayo, ili kuboresha utoaji wa huduma.

51. Mabadiliko gani au nyongeza gani za huduma unadhani zingeboresha hali za wateja wenu?
- a. Mfano masaa zaidi, washauri zaidi, huduma za nyongeza, MAT kwa wanaovuta?
52. Chini ya robo ya tatu ya wateja wa MAT ni wanawake. Unadhani kitu hani kifanyike kuwaonganisha wanawake kwenye huduma za MAT?
- a. Vip kuhusu kufanya huduma usiku, kuwasaidia katika ulezi wa watoto?
53. Je, una chochote unachotaka kusema?
54. Una swali lolote?

Kufunga masaili (soma kwa sauti): “Sasa tumefikia mwisho wa masaili haya. Asante sana kwa maelezo yote uliotoa leo. Majibu yako yatasaidia katika kuandaa programu na sera ili kuzuia maambukizo ya VVU kwa watumiaji wa dawa za kulevya. Nitakupatia kadi yangu yenye namba zangu za simu. Unaweza kuwasiliana nami kwa simu endapo utapenda kufuatilia chochote kuhusu masaili haya. Kama unamfahamu mteja au mfanyakazi mwenzio yeyote ambae angependa kusailiwa na kutuelezea mapitio yake, tafadhali mpatie kadi yangu awasiliane nami kwa simu.”

Appendix V: Standard Codebook

ANALYTIC CATEGORY 1: "JUNKIE GETS NO LOVE"

CODE 1: GETTING HOOKED

Definition: The respondent describes initiating drug use and developing addiction.

Inclusion Criteria: First person descriptions of who introduced the respondent to drug use, motivating factors for initiating drug use, developing physical dependence, progressing from smoking or sniffing to injecting heroin, feelings about becoming physically dependent.

Exclusion Criteria: Third person accounts of other people's addiction, descriptions of when they first learned about drugs if not directly related to initiation, and brief responses.

Example:

"I was with a man who made me enter into this mess. He was my partner. He told me to smoke and at first I thought that it was just marijuana...I thought it was marijuana but he was putting things inside. I was just feeling nice when I smoked and I was asking myself what was that thing which gave me such pleasure to smoke. I went on like that. Finally the car got fired up [phrase for addiction] and I went to look for it on my own."

CODE 2: GETTING AND STAYING HIGH

Definition: The respondent describes actions taken to obtain and consume drugs.

Inclusion Criteria: First person descriptions of actions with the intention of procuring and ingesting drugs; including description of making money by legal or illegal means to buy drugs, descriptions of where they would go to use drugs, and descriptions of how they would ingest drugs (smoking, sniffing, shooting etc.).

Exclusion Criteria: Third person accounts of what other people do to obtain and consume drugs. Brief responses. Exclude general comments from service providers.

Example:

"When I did them wrong- this would happen when I was feeling sick and I didn't have any money. I might have come in and tried to ask them for some money and they said, no, so I'd appraise whatever was there like maybe her kitange or a cooking pot or thermos and take that and go sell it just so I could get better. So once I felt better, that's when I would start to feel bad about what I just did and think, 'Why did I just take her thing' but before I get high its like my whole thought process is completely different"

CODE 3: PERPATRATING VIOLENCE

Definition: The respondent describes violent actions that they have perpetrated against others.

Inclusion Criteria: First person descriptions of robbing people (including sex work clients), physically assaulting people, violently threatening people, sexually assaulting people.

Exclusion Criteria: Descriptions of violence perpetrated against the respondent. Brief descriptions.

Example:

"When I indulged in drugs, I was not staying at home; I was just taking money. At the end I pointed a knife at him because he refused to give me money. I took our child and help him upside down. I was doing that, threatening to drop the child, so that he would give me money. He gave me some and soon after I left."

CODE 4: SURVIVING VIOLENCE

Definition: The respondent describes physical or sexual violence perpetrated against them.

Inclusion Criteria: First person descriptions of physical assault (hitting, kicking, punching, pushing) and sexual assault (any sex act forced against the respondent against his/her will) perpetrated against the respondent. Include third person descriptions of what happened to a friend. Include service provider accounts of their clients' experiences.

Exclusion Criteria: Descriptions of sex or money where both parties set and complied with terms of agreement. Descriptions of the respondent perpetrating violence. Brief answers.

Example:

"He yelled a lot of cruel words and I decided to leave. But he was not ready to see me leave, so he started a fight. With all his anger and might, he knocked me on the wall...blood came out of my nose and ears, I was so swollen...that is why I separated from this man"

CODE 5: SOCIAL ISOLATION

Definition: The respondent describes actions that create social isolation and their feelings about it.

Inclusion Criteria: First person descriptions of processes or actions that contribute to isolation from non-drug related aspects of society, such as leaving their community because of drug use, becoming increasingly immersed in drug using communities, describing physical or social strategies to separate from non-drug friendly places or people, describing being forced into or voluntarily moving into ghettos, being shut out of family homes, and how they felt about being sequestered. Include provider accounts of their client's isolation.

Exclusion Criteria: Third person descriptions. Descriptions of how they were thrown out of home by family or partners or stopped talking with family. Brief descriptions.

Example:

"My friends were all drug users. I had a few friends who were not drug users, but other than them most of my friends were people who did drugs and now were all together here in treatment."

CODE 6: FAMILY LOSS

Definition: The respondent describes losing relationships with family due to drug use.

Inclusion Criteria: First person descriptions of actions they, their family, or their romantic partners took to separate emotionally and/or physically from each other, reasons as to why they were isolated from their family or loved ones, how they felt about being separated from their family through either forced or voluntary means, including having partners move out, and having family take away their children, death of children due to drug use. Include provider descriptions of client experiences.

Exclusion Criteria: Third person descriptions about other IDU who are separated from their family, descriptions about community isolation, brief descriptions.

Example:

"After the birth of my second born, I backslid and went into drug use. My wife could no longer stay with me. We were chased from our rented home, and she couldn't stay with me because of the baby, so my wife went back to her parent's home and I was alone"

CODE 7: DISCRIMINATION/ STIGMA

Definition: The respondent describes experiences of stigma and discrimination.

Inclusion Criteria: First person descriptions of perceived stigmatizing attitudes or beliefs against people who use drugs, and discrimination because they are understood to be a drug addict by other people, including stigma and discrimination perpetrated by family, friends, health care providers, strangers and other people in society. Statements by service providers about their clients that are stigmatizing (i.e.: “All my clients are liars”)

Exclusion Criteria: Third person descriptions of actions they have observed, perpetration of violence, brief answers.

Examples:

“You know, a junkie gets no love. You are viewed as a thief just because you are doing drugs, whether or not you actually steal is beside the point. Some people just don’t like to hear that so and so is going drugs. They don’t like it and they don’t trust you. They think you’re a thief”

CODE 8: HIV RISK TAKING

Definition: The participant describes actions that carry the risk of HIV transmission.

Inclusion Criteria: First or second person descriptions of sharing needles or works, sex without barriers. Include provider descriptions of client behaviors.

Exclusion Criteria: Third person descriptions, descriptions of possible MTCT, descriptions of forced sex (Code 4: Surviving Violence), descriptions of preventing HIV transmission. Brief answers.

Example:

“To be perfectly honest with you, yes I was protecting myself in the beginning but then later on at some point all that went out the window. It was not a good place. Where I was before was not a good place to be. Because we would just have sex and we would just trust in each other and share needles between three people and things like that”

CODE 9: Commercial Sex Work

Definition: The respondent describes experiences performing sex for money.

Inclusion Criteria: First person descriptions of sex work, including meeting clients, what was performed with clients, women’s feelings about doing sex work, reasons why people do sex work, reasons why people like/don’t like doing sex work. Include third person descriptions of other IDU experiences and service provider descriptions of their client experiences.

Exclusion Criteria: Brief responses. Descriptions of violence perpetrated against sex workers or their clients, including robbers (Code 3 and 4).

Example:

“I would go to the streets at night and in the morning I would wake up with 15,000-20,000 Tsh and I would know that I had my money to get high on for the whole day

ANALYTIC CATEGORY 2: SERVICE PROVISION AND UTILIZATION

CODE 10: CHALLENGES AND REWARDS OF SERVICE DELIVERY

Definition: The service provider respondent offers insight into their work with IDU/CSW.

Inclusion Criteria: First person descriptions of the rewards of their work, their motivation for their work, challenges that come up, things they wish they could change about the work.

Exclusion Criteria: Surface descriptions of the work, disingenuous answers, brief answers. Answers describing ongoing needs for the population, referrals, or ideas about how to reach more women should be classified under those codes.

Example

“There are lots of challenges, there are always lots of things to do, but we endure, it’s just a challenge because sometimes you have to do in such a way that you don’t have time to evaluate yourself. There is no time for sitting down to discuss about what is going on.”

CODE 11: SEXUAL HEALTH SERVICES

Definition: The IDU respondent describes past experiences needing and/or utilizing HIV testing and treatment, prenatal care, delivery care, and family planning services.

Inclusion Criteria: Respondent describes seeking HIV care and treatment, seeking family planning (including contraception, prenatal, delivery and antenatal care), or describes situations where those services would be appropriate but are not accessed. Include provider referrals for these services and barriers to accessing services.

Exclusion Criteria: Exclude brief answers. Exclude third person responses.

Example

“...I would love to have children, at least two of them, that is why I was looking for treatment for my blocked tubes. I will be really grateful”

CODE 12: OUTREACH/ENROLLING NEW CLIENTS

Definition: The respondent describes how the program conducts outreach and enrolls new clients.

Inclusion Criteria: Client accounts of programmatic strategies that connected them to harm reduction or drug treatment services. Include provider descriptions of programmatic processes and tactics to enroll clients in regular services or engage them in outreach encounters. Descriptions of topics covered in outreach, enrollment and any materials distributed.

Exclusion Criteria: Third person accounts, descriptions of the internal process that led them to recovery, suggestions of how to change outreach to reach more women IDU, and opinions about how to bring more people into treatment. Brief responses.

Example:

“Before a client is started on methadone they must have someone to support them. They are sometimes cheating, they might give a forged number and say that they have sponsor and then they start on methadone and stop the next day. But they are trying a lot to go to their families homes to find the sponsors, even if they just have a name and its know that person is cooperative”

CODE 13: REACHING WOMEN IDU

Definition: The respondent describes barrier to reaching women with services or offers suggestions about programmatic tactics to connect women to harm reduction and treatment.

Inclusion Criteria: First person opinions about tactics to connect women to available harm reduction and treatment services. Include descriptions of differences in women’s drug using behavior that offer insight into why they are more difficult to reach, and reasons unique to women that prevent them from accessing services.

Exclusion Criteria: Exclude third person answers and answers not directly related to women IDU.

Example:

“Many of the female IDU are prostitutes and prostitutes work at night, and we work during the day, so it’s difficult for us to know their exact sight of living to be able to follow-up with them, because they sell their bodies away from the places that they stay...Maybe we should do a nighttime outreach we can get a lot of them through this”

CODE 14: EXPANDING SERVICES

Definition: The respondent offers ideas for additional treatment or support services.

Inclusion Criteria: Client and provider accounts of ideas for additional services and for expanding the reach of services. Include discussions about to better enroll more people who are currently using heroin, ideas for additional support services, and ideas for vocational trainings. Also include provider suggestions about trainings or resources that would help them perform better at work.

Exclusion Criteria: Exclude responses that specifically address reaching more women and classify that information under Code 14. Exclude brief answers.

Example:

“I think they should train us about entrepreneurship and class subjects. They should train us on hand works. They should give that to women, all the women who are here. It would have been really nice to have a job where you can go after taking your medication”

ANALYTIC CATEGORY 3: “STANDING AT A CROSSROADS”

CODE 15: MOTIVATING FOR TREATMENT

Definition: The respondent describes seeking and initiating harm reduction or treatment.

Inclusion Criteria: First person description of motivating factors to seek treatment services, descriptions of the decision-making process, descriptions of what another individual did to help connect the respondent to services. Include provider descriptions of client experiences. Include descriptions of what one client has done to help motivate someone to enter treatment.

Exclusion Criteria: Exclude descriptions of what the client would like but did not receive (this would go under Code 14: Reaching Women or Code 15: Expanding Services). Exclude programmatic descriptions of outreach, which go under Code 13: Outreach/Enrolling Clients. Exclude third person accounts of what they have observed of other patients. Exclude brief answers.

Example:

“When I saw that I am suffering and my children are suffering while I still have eyes to watch them as their mother and hands for serving them, I quickly decided to enter the program”

CODE 16: FAMILY AND PEER SUPPORT

Definition: The respondent describes support from peers and loved ones for staying in treatment.

Inclusion Criteria: First person descriptions of ways that family, partners, or peers support the IDU to stay connected to harm reduction or treatment services. Types of support include logistical (transportation or childcare), monetary (finances for food or lodging or medical care) and emotional (encouragement, acceptance, love). Include provider descriptions of client experiences. Also include descriptions of how one patient helps another friend or lover to stay in treatment.

Exclusion Criteria: Exclude descriptions of what the client would like but currently does not receive, this would go under Code 22: Ongoing Needs. Exclude third person accounts of what they have observed of other patients. Exclude brief answers.

Example:

“My husband is supporting me with food and transport. He is even surprised to see me; he is asking himself if this is the same woman that he married. So he loves me now, things have changes. He is closer to me now than before. My parents are also supporting me, they have hopes for me.”

CODE 17: RECOVERY/HEALING

Definition: The respondent describes their general experiences with recovery and healing.

Inclusion Criteria: Client accounts of what recovery means to them, why they value healing and recovery, what symbolic markers they have of being in recovery or healing. Include provider descriptions client experiences.

Exclusion Criteria: Third person accounts of recovery or healing. Exclude descriptions of relapse or entering treatment (these go under Code 20: Relapse and Default or Code 17: Motivating for Treatment). Exclude brief descriptions.

Example:

“There have been a lot of changes pertaining to my body. I have clothes to change and wear while I didn’t before. I have changed now, it’s not that I am fat, but previously when the wind would blow, I was blown away. I’m thankful of where I’m at right now.”

CODE 18: REBUILDING REALTIONSHPIS AND REGAINING TRUST

Definition: The respondent describes rebuilding relationships with family and romantic partners.

Inclusion Criteria: Provider and client descriptions of examples of how IDU in treatment are rebuilding their relationships with loved ones, including tactics to establish trust and signs of regaining trust or rebuilding relationships include ongoing tensions or conflict with family that keeps family distant. Include provider descriptions of client experiences.

Exclusion Criteria: Exclude third person descriptions and brief descriptions. Exclude general descriptions of recovery, which have their own code, Code 19L Recovering/Healing.

Example:

“My relationships are closer now because before I wasn’t trusted and now they trust me. You see my mother already passed away so now it’s just my younger siblings and me. And now my siblings all respect me. They don’t make any plans unless I’m there. They don’t do anything

without consulting me first. They can't just make decisions without me. Before, they wouldn't include me in any decisions. But now they can see that I am better"

CODE 19: RELAPSE/ DEFAULT

Definition: The respondent describes experiences they have around default and relapse.

Inclusion Criteria: First or third person accounts of relapse, default, or sanctions; including why this occurred, how it was handled by the client and the program, if and how the person re-enrolled in treatment, and any feelings around relapse and default. Include service providers' descriptions of their clients relapse.

Exclusion Criteria: Brief answers.

Example:

"Eeeehhh, I stopped for about a month. It was because of my mother. I told you she is a born again Christian, she advised me to go to church for prayers. SO I went to church for about one and a half months and my condition got worse. I felt like I was becoming weak, I felt so weak...Agh, I came back directly to the program"

CODE 20: FUTURE ASPIRATIONS

Definition: The respondent describes their hopes and dreams for the future.

Inclusion Criteria: First person descriptions of what the clients envision for themselves in an ideal future, including hopes to have more children, reconcile with family, or find employment.

Exclusion Criteria: Third person accounts of what other people might want. Brief answers.

Example:

"My goals for the future are, if god will bless me with this, to find work or to have some kind of business so that I can take better care of my children, so that I can take care of my family my parents. I would be thankful if I could find a nice, safe place to stay where I can bring my children to stay with me because I can't bring them to stay with me where I am now."

CODE 21: ONGOING NEEDS

Definition: The respondent describes ongoing needs for support services or other pressing needs.

Inclusion Criteria: Include first person descriptions of ongoing needs for health services, for program support services, and pressing economic concerns. Include service provider and client perspectives.

Exclusion Criteria: Third person reflections on what other people might need, brief answers.

Example:

"The whole family is depending on me for everything. And my mother can't go back to my father cause he will kill her. All of these issues give me a headache. My father is sick now, so I have to help him with treatment costs. The whole family is looking to me so I have headache and depression"