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Exploring the drivers and impact of policing on female sex workers' HIV risk

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ABSTRACT

Police are increasingly viewed as front-line determinants of HIV risk among vulnerable populations. The negative impact of egregious police behaviors on HIV risk (e.g., sexual or physical violence, condom confiscation) has received more attention in the literature over recent years. However, the impact of routine law enforcement practices on HIV risk has not, and even less common are attempts to understand the drivers for those practices. Given the pressing need to engage police in the HIV response, examining the drivers for and impacts of policing on cis-gender (individuals assigned female at birth who identifies as a woman) female sex workers' (hereafter FSW) HIV risk warrants attention.

This thesis aims to examine the role of policing on FSWs' HIV risk, with a particular focus on understanding the drivers behind policing approaches. The thesis is grounded in an initial systematic literature review, a study that sought to elucidate the extent of the quantitative literature exploring specifically policing as a determinant of HIV. Specifically, the study included 16 studies and found that the majority used a single measure to capture police behaviors, with studies predominantly focused on 'extra-legal policing practices'. All studies found an association between police behaviors and either a HIV/STI outcome or related risk behavior, but amounted to a small body of evidence. The review pointed to a need for more studies focused specifically on police behaviors as structural determinant, in addition to development of more nuanced quantitative measurement.

Based on the findings of the systematic literature review the remainder of the analysis via a ethnographic study, conducted collaboratively with Baltimore City Police Department and a quantitative cohort study with street-based FSW in Baltimore City, USA explores the nature and impact of policing on the HIV risk of FSW. The ethnographic study used 281 hours of

observational data in the form of police ride-outs completed over a 8 month period (July 2015 - February 2016), to probe the question often missed by the literature: "Why do police do what they do?" Specifically, the study explored what factors influence police practices already identified in the literature as adversely affecting street-based FSWs' HIV risk and human rights and police officers' ability and willingness to adopt a more public health and rights orientated approach to street-based sex work. The ethnography highlights ecological factors at the structural (e.g., criminalization), organizational (e.g., violent crime control), community and individual level (e.g., stigmatizing attitudes) that are key to shaping individual police practices and attitudes towards FSW. The quantitative study draws upon baseline data collected over a 10-month period (April 2016 to January 2017) from 250 FSW from the Baltimore-based SAPPHIRE study. The study characterized FSW encounters with the police and explored the contribution that both day-to-day and abusive police practices may have on a risk environment that promotes client perpetrated violence. The study found that police interactions had a profoundly negative association with each additional type of abusive interaction being associated with client violence in adjusted analysis. While marginally non-significant, the association of the patrol-enforcement activities in adjusted analysis with client violence were of the same magnitude as the abusive interactions. These findings suggest that even non-abusive encounters, which occur on a much more frequent basis than abusive ones, also contribute to a risk environment that can facilitate client-perpetrated violence.

Collectively the findings support existing calls for decriminalization of sex work, supported by institutional and policy reforms, neighborhood-level dialogues that shift the cultural landscape around sex work within both the police and larger community, and innovative individual-level police trainings to address abusive and coercive policing.

ACKNOWLEDGEMENTS

DECLARATION

I, Katherine Footer, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

I have read and understood the School's definition of plagiarism and cheating given in the Research Degrees Handbook. I have acknowledged all results and quotations from the published or unpublished work of other people.

I declare that no copy editing and/or proof-reading services were availed by me in the preparation of this thesis. I have exercised reasonable care to ensure that the work is original and does not to the best of my knowledge break any UK law or infringe any third party's copyright or other intellectual property right.

Signed:

Date: 30th December 2020

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CHAPTER 1: INTRODUCTION

1.1. Background

Sex workers, defined as those who exchange sex for money, represent an important population at risk for HIV that includes cis-gender females (assigned female at birth and express a female gender identity) (*1*). Sex workers represent a globally diverse group both in gender and sexuality, work environment (e.g., brothels, private work, street-based) and broader socio-economic circumstances (e.g., access to stable housing, alternative sources of income, family support, education)(*2*). However, globally cis-gender female sex workers (hereafter FSW) are disproportionally impacted by HIV infection, chlamydia and gonorrhea infection and experiencing violence or homicide, compared with the general female population(*3*). Worldwide, but particularly in societies where there has been the widespread adoption of international human rights treaties, policing should not increase the vulnerability of communities already at risk of violence and human rights abuses. However, police practices in many settings have instead been linked to violations of core human rights and to negative health outcomes in FSW(*3*). However, a strong evidence of the relationship between police practices and health outcomes of FSWs that can be used to drive policy agendas is currently lacking.

This PhD investigates the role of law as a structural driver of HIV risk among FSW. Structural determinants include social, political, organizational or economic factors, as well as features of the physical environment, that interact with individual level characteristics (e.g., age, race, biology) to determine health outcomes(*4, 5*). These structural drivers do not directly cause the acquisition or onward transmission of HIV; instead they mediate lower order risks such as those at the individual or interpersonal level(*5*). Law can be viewed as a structural cause of risk, for instance laws criminalizing sex work and certain drugs shape policing practices (e.g., move along tactics) towards FSW, whose enviromental conditions are altered into risks (e.g., rushing client negotiations) and outcomes (e.g., HIV)(*6*). Here I explore the embodied

experience of structural violence through police practices and the broader ecological drivers for those practices. The data for this thesis comes from field studies I co-led in Baltimore City, Maryland, USA that worked with different sex worker communities across the city, members of the Baltimore City Police Department (BPD) as well as other key informants connected with the health and wellbeing of sex workers in the city. The SAPPHIRE study (Sex worker and Police Promoting Health in Risky Environments) consisted of a observational based ethnography with the BPD and a longitudinal cohort study of sex workers.

This thesis was conducted on a part-time basis alongside my faculty position at Johns Hopkins Bloomberg School of Public Health. Since the start of the PhD I have published 31 papers, including 12 as first author and one as senior author. Alongside being the field lead for the SAPPHIRE study, I was principal investigator of a separate qualitative study exploring the role of police in transgender HIV risk that does not form part of this thesis.

The overall aim of this PhD thesis is to firstly understand the role of law as a structural driver for HIV risk among FSW and secondly investigate the ecological drivers behind policing approaches to sex work in the U.S. context. This will be done through three objectives. (1) To examine how global peer reviewed literature has operationalized the measurement of law enforcement practices as a structural determinant of HIV amongst sex workers (including cis and transgender women). (2) To qualitatively examine policing practices towards FSW through an exploration of the ecological drivers surrounding policing practices and police attitudes in the context of Baltimore City, Maryland. (3) To quantitatively explore the type and frequency of police encounters with FSW and their associations with client violence, as an identified HIV risk factor in the context of Baltimore City, Maryland.

This introduction will provide a background into our current understanding of the role of policing in driving HIV risk in the FSW population.

1.2. Contextualizing HIV risk amongst cis women who engage in sex work

Studies highlight cisgender women engage in sex work to address a wide variety and levels of financial need based on socio-economic circumstance (e.g., to pay the rent, finance university, to support a drug habit, obtain basic-necessities like food, support family)(*7*, *8*). However, in many contexts FSW are disproportionately impacted by HIV infection, chlamydia and gonorrhea infection and experiencing violence or homicide, compared with the non-sex working female population(*3*). A review of the HIV burden among FSW in 50 low and middle income countries found an HIV prevalence of 11.8% (95%CI 11.6-12.0)(*1*) Although less is known about the epidemiology of HIV and STI infection in the context of the USA a systematic review of 14 U.S. studies in 2016 found a pooled estimate of HIV prevalence of 17.3 % (95 % CI 13.5–21.9 %)(*9*).

When discussing HIV risk among FSW, public health discourse has moved beyond a focus solely on individual level risk (e.g., sex without a condom, frequency of drug use), to an understanding of HIV risk as negotiated interpersonal interactions, embedded in gendered power dynamics and broader macro-meso socio-structural level factors exogenous to the individual that mediate negotiation of individual risk. In this thesis, HIV risk encompasses individual risk (e.g., condom use), interpersonal (e.g., client violence) and structural (e.g., policing practices) determinants.

At the individual level substance use represents a key risk factor, with FSW and women who inject drugs (WWID) representing overlapping populations. Although this overlap is not well understood (with estimates varying from 18% to 61% injecting across contexts(*10–12*)), in Europe, injection drug use (IDU) has been identified as the primary driver of HIV risk among FSW (6). In the USA a recent study among a cohort of 250 FSW found that those reporting cocaine injection were nearly four times more likely to be HIV positive than the rest of the population(*13*).

At an interpersonal level evidence points to FSW experiencing high rates of physical and sexual violence from both intimate partners, clients and third parties, such as the police(*3*, *14*, *15*). Evidence suggests that FSW who experience high rates of gender based violence (i.e. physical or sexual violence) may be at increased risk of HIV(*16*), STI symptoms(*17*) and infection(*18–20*), it is therefore considered a key HIV 'risk factor'. Condoms are essential for preventing HIV acquisition and onward transmission as well as the STIs that can compromise health and exacerbate HIV risk(*21*). As in general populations, among FSW, violence is consistently associated with failure to use condoms(*18*, *22*, *23*), condom breakage(*18*, *24*, *25*), and condom failure(*17*, *26*). Given the observed high burden of violence among FSW globally(*15*) and the links to HIV risk and infection(*27*), growing emphasis has been placed on understanding the key perpetrators of abuse and the nature of abuse(*28*). Such an understanding can play a central role in preventing, responding and reducing HIV-related risks associated with violence towards FSW(*28*). Alongside intimate partner violence, FSW specifically are at risk of abuse from clients, pimps and managers, and the police. Understanding the nature of the violence, its prevalence and the relationships across different types of perpetrators is instructive in the optimization of prevention and intervention efforts.

To make sense of the often interlinked individual and interpersonal HIV risk factors in FSWs' lives (e.g., condomless sex (*21*, *22*, *29*), alcohol and drug use(*10*, *19*, *30–32*), depression and violence (*22*)) attention must be given to the broader social and structural environment that makes up the context in which FSWs' individual choices and interpersonal interactions take place. Increasing use has been made of ecological and risk environment models (*5*, *33*, *34*) to help better understand the role of socio-structural determinants of HIV risk amongst vulnerable populations, including people who inject drugs (PWID) and sex workers. Prominent social and structural factors that collectively contribute to FSWs' HIV risk environment and identified in the literature include, criminalization and stigmatization surrounding sex work and drug use, attending negative policing practices (*3*, *29*, *35–37*), community intolerance (*38*, *39*), marginalization from key health and social services(*40*, *41*), food insecurity and homelessness(*42*, *43*). Despite growing recognition of the importance of these more distal factors, individual and synergistic impact in shaping FSWs' HIV risk, more research is called for. Studies are needed to better elucidate the impact of key social and structural determinants through more detailed measurement, inclusion of longitudinal data and recognition of the dynamic relationship to individual (e.g., drug use, time in sex work) and interpersonal (e.g., sexual networks, interpersonal violence) HIV risk factors.

1.3. A framework and conceptual underpinnings to police's role in FSWs' HIV risk and the broader ecological environment driving police practices

Ecological approaches in the field of public health and epidemiology focus on the role and influence of social and structural conditions with respect to more proximal health outcomes

(*44*). These social and structural conditions include inequities in the broader distribution of macro social, political and economic power as well as features of an individual's physical environment that mediate lower order HIV risk taking at the interpersonal or individual level (*5*). Different frameworks have been used in the literature to help map and explore how social and structural determinants may operate on *'at-risk'* groups individual risk taking. In particular, the term *'risk environment'* is synonymous with the work of Tim Rhodes and colleagues, which defines a space, whether social or physical, in which a variety of environmental factors interact to increase the risk of harm occurring(*34*). This risk environment comprises different types (physical, social, economic, policy) and levels (macro and micro) of environmental influence. Rhode's heuristic is influential in giving primacy to the role of the ecological environment in producing HIV risk. However, Rhodes model is fundamentally built upon longer standing socio-ecological models that use a variety of dimensions to contextualize individual behavior and risk including interpersonal (interactions between persons), organizational (organizational policies/systems), community (normative values) and public policy level (local or national laws and policies)(*45*, *46*). It is this latter model that provides a particularly appropriate framework from which to explore the role of policing practices as a determinant of FSWs' risk environment, as well as a basis from which to conversely explore the social and environmental factors that influence police's decision making around policing approaches to sex work.

Burris, 2004 puts forward a useful model that specifically expands on the role of law as an ecological cause of risk, presenting law as a complex construct that involves the transformation of 'law on the books' to 'street-level' policing practices(*6*). This framework can be adapted to tease apart the role of policing as a complex and multi-layered structural determinant of risk. In particular it takes account of the fact that laws are translated into the day to day practices of officers and discretionary decision making that is within the law, but may still have negative

health consequences, as well as unlawful practices that capitalize on vulnerable groups criminalized status and unequal power relations. However, Burris's framework is exclusively focused on the law and policing as a structural driver for HIV risk. It is important to also situate policing within a broader range of macro and intermediate socio-structural HIV determinants that operate in the lives of FSW and may coalesce with policing tactics to impact women's overall vulnerability. Shannon and colleagues structural determinants framework for sex work is useful for presenting one such broader framework from which to consider the constellation of structural risk factors (e.g., geographical, economic, community) operating specifically in the lives of sex workers(*33*).

Figure 1.1. below draws upon these different frameworks to help illustrate how law operates as a key structural driver for HIV related risk among FSW using a modified social ecological model that spans the macro to the micro level, including laws relationship to other interconnected social and structural factors that may be instrumental in how law is translated into the everyday enforcement and abusive practices of police officers and FSWs' experience of structural violence. This same framework helps to situate our understanding of the role of broader ecological factors in shaping police practices (e.g., criminalization, police policies, presence of open air drug markets, social stigma), and as such guides the dual objectives of the thesis to explore police as driver for HIV risk and understand the drivers behind policing practices.
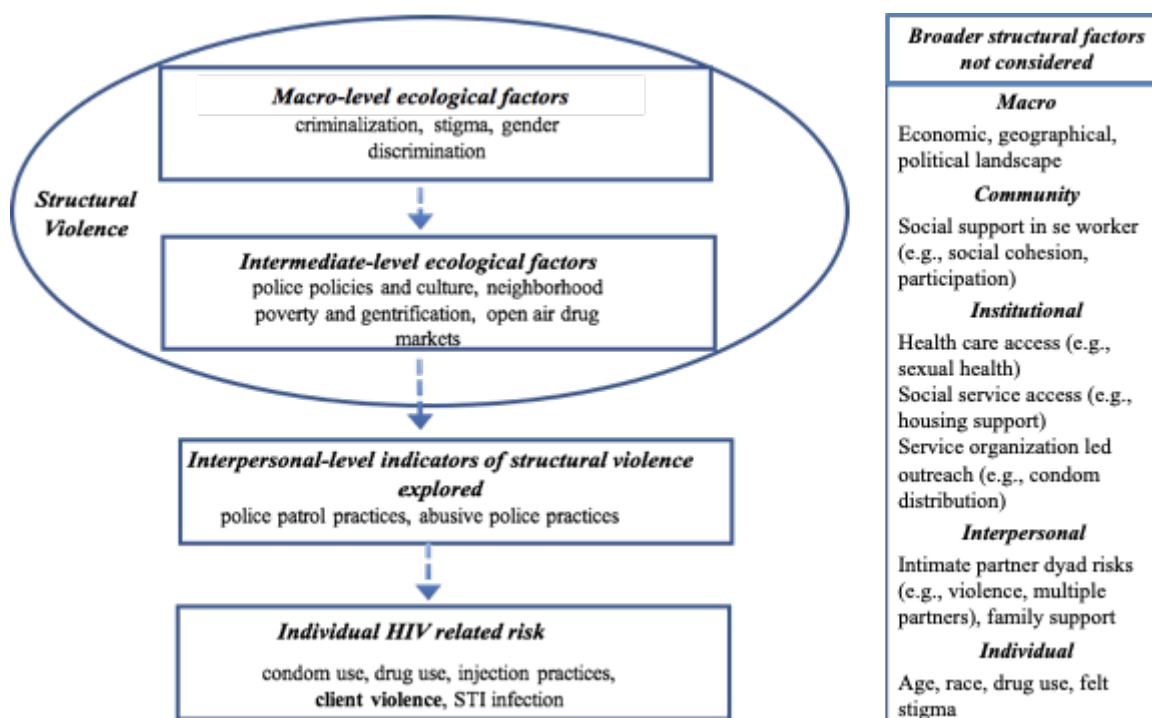
Figure 1.1. Conceptual framework mapping the translation of law into individual HIV related risk and laws relationship to other important ecological factors.

An important factor identified in the literature as being particularly inter-linked to law and the role of policing on FSW's HIV risk is stigma - a construct that can operate across levels from the macro structural setting down to the micro social environment. Structural stigma represents the cultural values that Parker and Aggleton (2003) point to as shaping larger processes of power and order (*47*). This can include legal frameworks which criminalize sex work and NIMBY (not in my backyard) public attitudes towards sex work, both of which can have an important impact on shaping downstream policing policy and practice (*48*). This can in turn manifest into individual level stigma by police officers articulated by Link and Phelan (2001) into a number of steps including, labelling, associating a stereotype with the label, separation of the labelled individual from others, and finally discrimination against labelled individuals (*49*).

Structural violence, a concept attributed to the sociologist Johan Galtung (1969) whose attention to social structures brings into focus the role of power in shaping 'unequal life chances'(*50*) provides an important conceptual lens for understanding how more proximal social-structural arrangements, such as policing approaches, represent a downstream manifestation of a broader social, political and economic order (e.g., criminalization of sex work, gendered norms, poverty, stigma)(*51, 52*). Understanding FSWs' experiences of policing through a lens which focuses on systems of power is an effective way of identifying structural police oppressions that may not be immediately obvious, and yet have serious consequences for FSWs' health and vulnerability to HIV risk.

Alongside understanding the more direct impact of policing on FSWs health and safety a more in-depth examination of how police power is manifested in the exercise of day-to-day patrol officer discretion and the drivers for it, is an important step towards identifying effective interventions (*53*). Existing literature from the field of criminology provides key insights into important factors that shape the policing of vulnerable groups and are instructive in exploring law enforcement approaches to FSW. Bittner's (1967) formative work on Skid Row and many subsequent ethnographic studies have emphasized the discretion and autonomy with which street-level officers deploy the law and legal enforcement policies, with law often providing the legitimacy and authority to impose a variety of unchecked practices (*54, 55*). To understand what shapes police discretion towards vulnerable groups, the concept of police culture, defined as the shared norms, beliefs and values that shape police behavior (*56*), is important. Traditional accounts of police culture suggest a homogenous police mentality whose values can be highly problematic with respect to vulnerable groups. Cultural racism, for instance, has manifested in over policing and abusive practices towards black and other ethnic groups (*57, 58*). In the field of domestic violence, elements of traditional police culture including notions

of what amounts to 'real policing' and a masculine ethos have been shown to influence officers'
exercise of discretion and dismissive attitudes to domestic violence work (*59*). More
contemporary accounts of police culture have moved away from a 'monolithic' interpretation
of police culture, instead exploring the influence of broader social and political conditions, as
well as individual officer outlooks and agency in shaping behavior (*58*). Influential work by
Chan with the New South Wales Police in Australia exemplifies contemporary efforts to
understand the impact of the broader 'policing environment' in shaping officers' working
culture (*57*). In particular one criticism levied at the existing police culture literature was its
failure to account for the role played by the wider context in which officers operate. To address
this shortcoming, Chan draws upon Bourdieu's theories of 'field' and 'habitus'. The field is
constituted as historical and social- structural elements (e.g., the legacy of relationships
between police and different communities, or their socio-economic standing). Habitus accounts
for cultural knowledge, when an officer encounters a certain field, a response is triggered by
past habitus, which allows for creativity and discretion at the level of the individual officer
(*60*).

Related to the notion that exogenous factors have a key impact on policing, criminological
literature has recently placed a renewed emphasis on the geographic dimensions of law
enforcement(*61*). Police power, manifested through forms of spatial control (e.g., placing a
patrol car to disrupt street drug sales) is often linked to the physical and social environment
police are operating in (e.g., poor versus gentrified locations)(*62*). Herbert (1997) explores how
"small discretionary operations" to control space are in fact key to understanding day-to-day
policing(*63*). Klinger (1997) in his theory of policing explores the connection between police
decision making and their ecological environments, putting forward the proposition that
officers' police less in high crime areas (e.g., viewing victims as less deserving, and crime as

more normalized.)(*64*). However, more ethnographic research is needed to better unpack the scope and nature of police discretion towards street-based FSW, including the influences of traditional police culture and wider ecological factors on policing practices. Such studies are essential in elucidating the scope of law enforcement's contribution to FSWs' day to day landscape of HIV vulnerability and identifying opportunities for intervention.

1.4. Filling gaps in the evidence base of policing as a structural determinant of HIV risk

In 2012 the Global Commission on HIV and the Law published its working paper "Sex work, HIV and the Law," putting forward the role of law in marginalizing sex workers and creating a context for vulnerability and HIV risk(*65*). Since then a range of quantitative and qualitative studies have sought to unpack laws contribution to HIV risk both in terms of laws direct impact (e.g., criminalization of HIV exposure) and indirect impact through laws interpretation and application by law enforcement officials (e.g., police, prosecutors, judges).

The policing of sex work takes place within a range of legislative contexts, with 5 main models used to manage sex work: full criminalization (prohibiting all aspects of buying and selling sex); partial criminalization (where some aspects are criminalized e.g., collective working, involvement of third party, running a brothel); criminalization of purchase of sex by clients but not the sale (often referred to as a sex-buyer model); regulatory models (where the sale of sex is legal in certain licensed brothels or managed zones, often accompanied by mandatory condom use and STI/HIV testing); and finally full decriminalization (where all aspects of adult sex work are decriminalized)(*35*). New Zealand is the clearest example of a country operating under full decriminalization (excluding non-New Zealand citizens) and evidence from this

setting suggests that decriminalization has been linked to reductions in sex worker's experiences of violence, and improved police relations(*66*). Modelling by Shannon et al. suggests that decriminalization of sex work could have one of the greatest positive effects on the course of the HIV epidemic (34). In the context of the United States, the buying and selling of sex is illegal and criminal laws exist to regulate the industry, with implementation resting in the hands of the police. Whether the legal policy response is criminalization or legalization, regulation has been characterized as a manifestation of structural stigma, whereby institutionalized legal discourse around sex work is deeply embedded in stigmatic assumptions of sex workers as risky and at-risk, both victim and victimizer(*67*, *68*). In Nevada, the one U.S. state where sex work is legalized, sex workers are viewed as a threat to public health with laws requiring weekly STI testing, and placing the burden on sex workers for ensuring clients wear condoms(*68*).

Globally police exercise considerable discretion in how they interpret and apply the law, as well as considerable power which can be used to exploit those they are tasked with policing(*29*). Irrespective of the country model, the presence of alternative enforcement tools (e.g., arrest for loitering) and police enforcement discretion means the interpretation and implementation of any model will vary within countries and even within cities. A major consequence of criminalization and the lack of legal protections around sex work is to create an environment of impunity with respect to violence against sex workers by exploitive clients, pimps, drug dealers, intimate partners and the police(*3*, *35*). An accumulating body of evidence across different settings has pointed to police's specific role as perpetrators of violence and other human rights abuses(*3*, *35*). It is estimated that violence (any type) by police is reported by 7-89% of sex workers across settings(*3*). In addition to forced unprotected sex(*19*, *69*, *70*), police often use arrest or threat of arrest to coerce sex highlighting the normalization amongst

police of sexual violence as a tool of power in their interactions with sex workers(*71*, *72*). Other rights violations against FSW commonly documented include verbal harassment and humiliation(*69*, *73*, *74*) financial extortion(*29*, *75*, *76*), intimidation with the threat, or use of physical force(*77*), and arbitrary arrest, often accompanied by illegal searches and physical violence(*3*). Alongside the HIV risk to sex workers associated with gross misuse of police power described above, another important manifestation is what Burris has termed the transformation of 'laws on the books' into everyday 'street level' practices(65). This involves the interpretive and often discretionary application of laws by police in a given legal and social context. These practices may not be as overtly egregious as those described above, but can take the form of enforcement strategies, such as visibility-policing (having a strong police presence in an area), displacing women from residential areas, arrest, or use of nuisance offences to penalize women for engaging in street based sex work. These represent traditional punitive public safety orientated approaches to an activity that is often prioritized as problematic because of associated criminal activity (e.g., drug dealing and/or using) and offensive behavior (e.g., discarding condoms, fighting, visible solicitation and sexual activity).

The most *direct* pathway for policing's impact on HIV risk is through inconsistent condom use. Condoms are an essential HIV prevention strategy, yet evidence points to police-perpetrated sexual violence being largely unprotected, and significantly associated with inconsistent condom use, STI symptoms and transmission of HIV/STI infection(*19*, *72*). Similarly arbitrary arrest and detention are often accompanied by a risk of sexual abuse, with immediate implications for HIV transmisison(*78*). More indirect pathways identified in the literature point to certain street-level policing initiatives such as periodic crackdowns in residential neighborhoods that displace FSW to unfamiliar areas impacting sex workers' HIV risk reduction strategies (e.g., screening clients, negotiating condom use, working in

groups)(47, 55, 66). In addition, specific police practices such as condom confiscation and syringe confiscation by police, not always prohibited by legal policy, have been highlighted in the literature as associated with increased odds of HIV, STIs and violence by a range of actors(35, 69, 70). Over and above these specific impacts on HIV risk, police abuse fosters a context in which sex workers feel unable to approach police for protection from other perpetrators of gender based violence (GBV) such as paying clients and non-paying intimate partners(3). The criminalization of sex work and the illicit drug use in which many are involved can prompt fear of police(63) and undermine access to justice following violence victimization. This climate can enable a sense of inevitability to violence and mistreatment(45) with resulting internalized stigma and self-blame undermining access to justice, services and care(64).

There is a need to better understand how existing studies have operationalized policing/law enforcement practices as a structural determinant of FSWs' HIV risk environment, and the pathways by which policing increases the risk of HIV infection and vulnerability within a broader environment of intersecting structural vulnerabilities (e.g., homelessness, drug policies, stigma). In Chapter 2, I provide the first review that has sought to specifically examine the quantitative evidence base for policings' role as a structural determinant of HIV risk. In particular probing what police determinants have been the focus of studies to date, and where gaps remain. Since this initial paper, Platt and colleagues conducted a systematic literature review and meta-analysis of the extent to which sex work laws and policing practices affect sex workers' safety, health, and access to services(*35*). The meta-analyses showed that repressive policing practices of sex workers were associated with increased risk of sexual/physical violence from clients or other partners (across 9 studies and 5,204 participants), additionally sex workers who had been exposed to repressive policing practices were on

average at increased risk of infection with HIV/STI compared to those who had not (across 12,506 participants from 11 studies)(*35*).

1.5. Structural Interventions - fostering better police and public health collaborations to address street-based sex work

Structural health interventions address identified barriers within the larger social, legal and policy environment, with a shift away from individual behaviour change to addressing community and structural – level drivers for risk(*79*). Examples across different settings highlight the important role of multi-layered interventions that include mobilization and empowerment of sex workers in their legal rights, alongside interventions aimed at training and educating police officers, as a way of mitigating the negative effects of policing practices and legal environments(*80*). From the perspective of community led structural interventions, India provides one of the few evaluated examples of an intervention that sought to empower FSW with legal and human rights knowledge, alongside educating and partnering with police to reduce women's experiences of violence(*81*). Studies found that the intervention led to a significant reduction in the occurrence of arrest of sex workers (9.9% in the second survey to 6.1% in the third survey round (AOR) [95% CI]=0.63 [0.48 to 0.83]), as well as a decrease in the number of FSW arrested as part of arbitrary raids(*82*). Limitations to these studies include the cross-sectional nature of the study design precluding any inference on causal relationships. Further, the ability to engage sex worker communities in empowerment activities and police departments in meaningful training will vary greatly by study context, therefore the results may not be generalizable to other countries. A key component of sex worker structural interventions are community empowerment based approaches that facilitate sex worker's participation

within social and political spheres through harnessing women's social capital, but this appears more common in developing country contexts(*83*).

In the context of the U.S. there has only recently been an emergence of interventions addressing sex worker empowerment in the context of health service and drug treatment delivery, including making fentanyl strips available to FSW who use drugs (*84*). There is also a dearth of intervention work directly addressing the policing of sex workers from a legal empowerment perspective(*85*) (i.e., strengthening the capacity of vulnerable groups to exercise their rights). Even in contexts where sex work is criminalized there is value to be had in empowerment of FSW of their rights and police's responsibilities. It is possible to find an increasing mainstreaming of public health-oriented harm reduction interventions aimed at illicit drug use(*53, 86–90*) which has implications for many FSW who also use drugs, and has been occurring within the broader U.S. narrative of the failed 'war on drugs'(*91*). In addition, a number of studies have evaluated the effectiveness of police trainings and policy changes (e.g., diversion programmes) aimed at shifting police attitudes and practices towards drug users, while securing police buy-in through a public health lens and reducing rates of recidivism(*92, 93*).

Despite these examples of positive steps to address policing's contribution to the HIV risk environment of two overlapping vulnerable populations, evidence suggests that shifting police culture and gearing day-to-day patrol practices towards public health orientated goals is both complex. In the U.S. context, centering police in harm reduction is challenging given the wide criminalization of sex work and illicit drug use, and where systemic discriminatory enforcement and overpolicing has resulted in mass incarceration along racial and socioeconomic lines, further marginalizing vulnerable and primarily African American

communities(*94, 95*). In addition, FSW specifically already operate from a structurally vulnerable position, whereby they face constraints to agency and resource access due to differentials of power embedded in social structures. In Krusi et al. (2016), a qualitative exploration of FSWs' policing experiences under a new Canadian policing policy intended to prioritize sex worker safety, the authors found that stigmatizing attitudes overshadowed and undermined any improvements to police protection(*52*). More studies are needed that focus on understanding the mechanisms and drivers that underlie police behavior and decision making. Such insights are critical to the design of interventions and police public health partnerships that address the health and rights of FSW and other marginalized populations. Current research is heavily based on quantitative epidemiological surveys and/or self-report qualitative interviews with FSW, but not police. Burris (2004) has suggested that research has missed the opportunity to focus on looking at the behavior of the police towards vulnerable populations and the drivers for it, thereby creating avenues from which to design interventions that address the underlying causes of the negative health and human rights impacts of policing(*6*).

1.6. The context of Baltimore City, U.S.

Baltimore is an East Coast city that has been challenged by a sustained history of social and economic hardship, largely divided along racial lines, with white prospering neighborhoods sitting in stark contrast to impoverished and largely African American ones. A 2011-2015 U.S. census report highlighted that 23.7% of city residents live below the poverty line. All aspects of sex work are criminalized (buying and selling) in the state of Maryland. Street-based FSW in this setting are characterized by high rates of STI infection and co-morbidities related to drug use and violence(*13, 96*) In particular, studies in this setting highlight the magnitude of the overlap between street based sex work and injection drug use(*32*).

Baltimore has a history of police maltreatment, systematic racial targeting, and violence that has fueled long-standing mistrust of law enforcement among communities (*97–100*). Data for this thesis were collected in the aftermath of the 2015 death of Freddie Gray while in Baltimore Police Department (BPD) custody and subsequent Department of Justice (DOJ) report outlining these practices, Baltimore City and the BPD agreed to shift policy toward police accountability and building community trust (*101*).

1.7. Transgender sexworkers

The SAPPHIRE STUDY, which provides the data for this thesis, did include an additional supplemental study of transgender women (individuals assigned male sex at birth who now identify as female, transgender or trans female) who enagage in sex work (TFSW). However, the TFSW cohort and observational work with the police was conducted separately. This was due to the unique and separate nature of the TFSW population in this study context and differential timing of the supplementary funding, and is not included in this thesis work. It should also be noted that in conducting the literature review of our current understanding of the relationship between sex workers' HIV risk and the police, the review was extended to TFSW. This was instructive to inform the nature and extent of quantitative work with this population for the supplementary study. No study eventually included in the literature review considered TFSW as a separate population. This finding led me to help set up and conduct one of the first cohort studies, globally, that considers TFSW as a unique sex worker population, with overlapping but different structural vulnerabilities to FSW (*13*, *102*, *103*).

1.8. Thesis objective and individual aims

The overall aim of this PhD thesis is to firstly understand the role of law as a structural driver for HIV risk among FSW and secondly investigate the ecological drivers behind policing approaches to sex work in the U.S. context.

To support this overarching aim the thesis aims to address three objectives:

1. To examine how global peer reviewed literature has operationalized the measurement of law enforcement practices as a structural determinant of HIV amongst sex workers (including cis and transgender women) (Chapter 2).

2. To qualitatively examine policing practices towards FSW through an exploration of the ecological drivers surrounding policing practices and police attitudes in the context of Baltimore City, Maryland (Chapter 4).

3. To quantitatively explore the type and frequency of police encounters with FSW and their associations with client violence, as an identified HIV risk factor in the context of Baltimore City, Maryland (Chapter 5).

Exploring the embodied experience of structural violence through police practices and the broader ecological drivers for those practices is intended to provide a strong evidence base to help drive policy changes to improve the health of the FSW communities.

1.9. Thesis Structure

This is a research paper style thesis of an introductory chapter followed by, a detailed overview of the overarching methods, then three chapters written in the form of journal articles, and a final discussion chapter. The introduction provides a background on what is currently known about FSWs' HIV risk and the role of the police in driving that risk, as well as the social theory and frameworks that underpin this work. Most prominently law as an ecological risk factor, and the concept of structural violence, of which policing is one of the most visible manifestations. The main thesis chapters consist of (1) a literature review of international studies that have measured the role of law enforcement as a structural determinant of HIV among FSW and TFSW, which was published in the Journal of the International AIDS Society (*104*); (2) A description of methods to study the complex interaction between sex workers and the police using both qualitative and quantitative methods; (3) an exploration through ethnographic observations of factors that drive policing of FSW in Baltimore City, which was published in BMC International Health and Human Rights in 2020 (*105*); and (4) a quantitative characterization of the interactions that FSW have with the police and explore associations with client violence drawing on baseline data from a cohort study of FSW in Baltimore, published in the American Journal of Public Health in 2019 (*106*). The final chapter consists of a discussion of the findings and places the findings in our broader understanding of FSW's risk environment.

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CHAPTER 2: POLICING PRACTICES AS A STRUCTURAL DETERMINANT FOR HIV/STI AND SEXUAL RISK BEHAVIORS AMONG SEX WORKERS: A SYSTEMATIC REVIEW OF EMPIRICAL FINDINGS

2.1. Abstract

Introduction: Globally sex workers are disproportionately infected with HIV. Significant focus has been placed on understanding the structural determinants of HIV risk and designing related interventions. While there is growing international evidence that policing is an important structural HIV risk factor among sex workers, the evidence has not been systematically reviewed. **Methods:** We conducted a systematic review to examine the effects of policing on HIV-related outcomes among cis and trans female sex workers in September 2015. Databases included Pubmed, Embase, Scopus, Sociological Abstracts, Popline, Global Health (OVID), Web of Science, IBSS, IndMed, and WHOLIS. Ancestry searches for inclusion in the systematic review were also conducted. We searched for studies that included police practices as an exposure, mediator or moderator for HIV/STI infection or HIV-related outcomes as well as studies that examined prevalence and correlates of police practices against SWs. **Results:** Of the 137 peer-reviewed articles identified for full text review, 16 were included, representing sex worker's experiences with police across 5 settings. Over half the studies used a single measure to capture police behaviors, those studies that included more complex measurement were overwhelmingly concentrated in a very few settings. Studies predominantly focused on 'extra-legal policing practices', with insufficient attention to the role of 'legal enforcement activities'. The most commonly measured HIV/STI risk behavior was inconsistent condom use. While all studies found an association between police behaviors and either a HIV/STI outcome or related risk behavior, results lacked generalizability, while study design and analysis makes causation difficult to establish. **Conclusions:** The review points to a small body of evidence that confirms policing practices as an important structural HIV risk factor for sex workers. There was small geographic diversity, with no studies in the US. Arrest was the predominant police behavior, although it is not necessarily the most common police behavior to which sex workers are exposed. There is a need for more studies focused

specifically on police behaviors as structural determinant, in addition to development of more nuanced quantitative measurement. A diversification in study design and setting would support broader findings in the literature that policing is a key structural determinant for HIV in the lives of women who sell sex. Such evidence is vital to the design and implementation of structural interventions that seek to target those police behaviors most relevant to women's HIV risk environment.

2.2. Introduction

Globally, sex workers, defined as those who exchange sex for money or other goods, have a disproportionate burden of HIV(1, 2). For over a decade public health and social science research has sought to more clearly link HIV to the social production of HIV risk and transmission(3-6). The conceptual shift from individual-focused HIV prevention (e.g., behavior change, communication) to environmental-structural interventions emerged as far back as the 1990s among female sex workers (FSWs)(7-9). Recent research places these intervention efforts in context, highlighting a lack of empirical work to delineate the epidemiology of structural risk factors and HIV amongst FSWs(10). An assortment of theoretically informed frameworks exist to elucidate the dynamic socio-economic production of HIV risk across levels, from the macro (e.g., stigma, migration) to micro (e.g., violence, healthcare access), and how such pathways relate to interpersonal, individual and biological factors(10-12). A recent call to action to address the HIV response to sex work included a focus on structural reforms and interventions(13). Ensuring structural determinants are properly operationalized, and where possible, independently associated with sex workers' HIV/STI risk behaviors and HIV infection is fundamental to the scientific credibility of such prioritization. Law is increasingly viewed as a significant determinant for HIV risk, but one that is a 'complex

phenomenon' in its own right (14), operating at different structural (i.e., macro, meso, micro) levels to influence HIV risk behaviors and acquisition.

2.2.1. Laws and policies that influence HIV risk

The legal and policy frameworks that regulate sex work – including criminalization, decriminalization, and legalization – are the subjects of health policy research, with increased criminal sanctions linked to fewer public health benefits(15-18). The dominant global response to sex work is criminalization through the use of both criminal and administrative sanctions. Criminalization takes a variety of forms, from criminalizing the transaction itself to prohibiting acts related to sex work, such as solicitation, being found in a brothel, or communicating for the purposes of prostitution (19, 20). Administrative laws are also frequently used to buttress prohibitionist goals (e.g., loitering, public indecency, disorderly behavior offences). The introduction of condoms as evidence of prostitution-related offences in criminal proceedings(21) and Prostitution Free Zones(22) are two examples in the U.S. context of policies allowing for the insidious expansion of state regulation of sex work. Analysis of data from 21 Asian countries by Gruskin and colleagues(23), highlights that the existence of such criminal laws, regulations, and policies, presents significant obstacles to HIV prevention efforts among sex worker populations. Considering for a moment the dual risk posed by legal environments on sex workers who are also drug users, a complementary evidence base points to the harms similarly associated with the legal and policy frameworks criminalizing drug use and drug users(24). Conversely, modeling undertaken by Shannon and colleagues, suggest decriminalization of sex work could have one of the greatest effects on the course of the HIV epidemic across settings with concentrated or generalized HIV epidemics (25).

2.2.2. Policing practices and sex workers HIV risk

The transformative process by which laws and policies manifest into the practices of police and other criminal justice actors is of central importance. Legal scholars have long demonstrated the gap between written law and law as it is enforced(14, 26). In settings where sex work is criminalized police have considerable autonomy and discretion to shape their law enforcement activities and interactions with sex workers. Policing practices can *directly* and *indirectly* affect sex workers HIV/STI risk. A key example of a direct effect is the confiscation or destruction of condoms, a practice that has been documented in the U.S. and worldwide(27-30). In the case of sex workers who also inject drugs, drug market policing intersects with sex work, with the confiscation of drugs and injecting equipment in the absence of arrest (31-36). Indirect policing practices include periodic crackdowns or moving women off corners, to address community disquiet(37-42). Both strategies can displace sex workers to unfamiliar areas, with the potential to increase their exposure to violence and severely limit their negotiating power with clients(37, 42-46).

Receiving particular attention in current literature, are widespread examples of police engaging in 'extra-legal' behaviors(24) that range from misconduct, to severe rights violations by police as state actors. Abuse of police power in its most egregious form, sexual violence, is well documented worldwide(47). Alongside forced unprotected sex(48-52), police officers frequently employ the coercive threat of arrest to acquire free sexual services(30, 50, 53-60), thereby normalizing sexual violence as a tool of police enforcement. The list of indignities that sex workers suffer at the hands of the police to avoid arrest, or experience during arrest is wide-ranging and includes: verbal harassment and humiliation(59, 61-64); financial extortion to avoid arrest (58, 65) (49, 52, 55, 57, 66, 67); condom confiscation(27-30, 39, 68); physical violence or intimidation(49, 50, 59, 69, 70); and arbitrary arrest or detention, frequently

accompanied by illegal searches and physical or sexual violence(46, 50, 53, 65, 71). These types of interactions have no legal basis, and grossly distort the role of police as custodians of public safety.

2.2.3. Previous reviews

A systematic review of the correlates of violence against sex workers by Deering et al. (72) identified policing practice (either lawful or unlawful) as key correlate. Another systematic review by Shannon and colleagues(46) reviewed data for HIV prevalence and incidence, condom use, and structural determinants among FSWs. The authors' articulate 3 broad levels at which a variety of structural determinants operate:

(1) Macrostructural (e.g., criminalization, migration, stigma),

(2) Community organization (e.g., community empowerment, sex work collectivization) and

(3) Work environment (e.g. venue policies, policing, access to condoms).

Most of the 149 articles included in the review address other structural determinants, with 7 of the 8 included measuring police as a structural vulnerability a priori within women's work environment. The authors conclude that police abuses and law enforcement strategies are key barriers to HIV prevention efforts among FSWs worldwide. In addition to these systematic reviews, two other non-systematic reviews of the evidence have provided important contributions to the field. Decker et al. place a spotlight on policing as a contributing factor to sex workers' experience of human rights violations (47), while Tenni et al. review the scope and opportunities for interventions that address police behavior towards sex workers(73).

2.2.4. Current Review

The goal of the current systematic review was to provide a focused lens on how quantitative research has operationalized law enforcement practices as a structural determinant of sex workers' HIV risk environment. The review builds on previous work by presenting a clearer picture of the strength of the evidence with respect to policing as it operates at the micro level of a broader and more complex legal environment. An important distinction in this review is the inclusion of search terms for transgender female sex workers, in addition to cisgender female sex workers. The review also includes a broader range of HIV-related outcomes, and seeks to provide a more critical review of methodological issues in interpreting findings in the existing quantitative literature.

2.3. Methods

2.3.1. Search strategy and selection criteria

We followed PRISMA guidelines in conducting the systematic review. Subject headings and associated terms were initially developed and tested in PubMed and adapted for other database specific categories (see supplementary files for full list of search terms). The search strategy involved two extensive search components for each database, and were developed to reliably capture: a) police enforcement and misconduct as part of a process by which law is enacted; and b) terms relevant to our population of interest. A comprehensive review of all major databases was undertaken on September 18th, 2015 (LR and BS). Databases searched for this review were Pubmed, Embase, Scopus, Sociological Abstracts, Popline, Global Health (OVID), PAIS International, Criminal Justice Abstracts, Web of Science, IBSS, WHO

Regional Databases, IndMed, and WHOLIS. Ancestry searches of included studies were also undertaken.

We included articles that examined police practices as an exposure, mediator, or moderator for HIV/STI infection or HIV related-outcomes, and studies that examined the prevalence and correlates of police practices against sex workers (i.e., police behaviors as the outcome). Studies had to use quantitative univariate or multivariable methods and be published in a peer-reviewed journal. Specific outcomes of interest were HIV infection; HIV or a sexually transmitted disease infection (STI); STI symptoms; HIV/STI testing and access; condom use, or syringe use.) Studies were included for trans and cis female individuals who exchanged sex for money or other goods (i.e., sex work); we excluded studies focused exclusively on male sex workers or adolescents, and studies only including venue based sex work. We limited our search to articles published between September 1st 2006 and September 18th 2015. Articles were limited to those published in the English language, but were not limited by either study design or setting.

2.3.2. Screening and data abstraction

Article citations were organized and uploaded to Endnote, and subsequently reviewed using Rayyan, a web app for exploring and filtering systematic review searches(74). The title and abstracts of all publications were originally screened by two independent reviewers (BS and KT) to retain those that clearly met the inclusion criteria, or for whom the full text of the article had to be reviewed before a final determination on inclusion could be made. Two independent reviewers (KF and BS) undertook full text review, any discrepancies as to final inclusion were discussed with the senior reviewer (SS) and consensus was reached as to whether to exclude

or include the respective article. Each full text was reviewed by two of the four reviewers (BS and KF). Data were abstracted using a standard abstraction form for each study (see Supplementary files).

As shown in Table 1, we set out the police measures for each study and their related HIV/STI and proximal outcomes. Outcomes were divided into three categories: those that directly measured HIV/STI in individuals or access to HIV services; condom use; and syringe use. Associations between police-related risk factors and the outcome were identified for each study and categorized as significant or non-significant at the 0.05 level. Where results from both univariate and multivariate models were presented, we extracted the (adjusted) associations of the multivariate model only. In the case of two papers, where police behaviors were reported as the outcome measure, we only present the univariate association with the HIV/STI.

2.3.3. Quality assessment

Two reviewers (BS and KF) assessed the quality of included studies. Due to the lack of validated checklists for observational studies, multiple checklists were reviewed and a modified checklist specific to this review was created (75, 76). The checklist consisted of 22 items and assessed reporting, sampling, statistical methods, bias and validity of measures. To assess the quality of the two RCTs included in the review, 6 additional questions were added that focused on the reporting of the interventions, blinding, randomization, and loss to follow up. For all studies that included HIV/STIs as either an explanatory or outcome measure, a question was included to assess whether or not biological specimens were used.

2.3.4. Data synthesis separately

Due to the diversity in policing determinants and HIV outcomes, a meta-analysis was not conducted. Instead, to guide our review, we have adapted a conceptual model that provides a legal determinants framework for HIV related outcomes of sex workers (Figure 1), and draws on previous ecological(14) and risk environment frameworks (11, 12). The framework highlights how the macro level laws and meso level policies are a critical influence on sex workers' HIV risk. However, it is at the micro level of policing practices that laws and policies are interpreted into the everyday decision-making of police officers. The framework draws a distinction between enforcement practices within the law, and those outside of it, which we define as 'extra-legal policing practices'(24). The latter represent behaviors that sit along a spectrum of misconduct, with human rights violations a prevalent feature in some settings.

Figure. 2.1. Framework of law as a structural determinant for health outcomes of sex workers, adapted from Burris and colleagues(14).
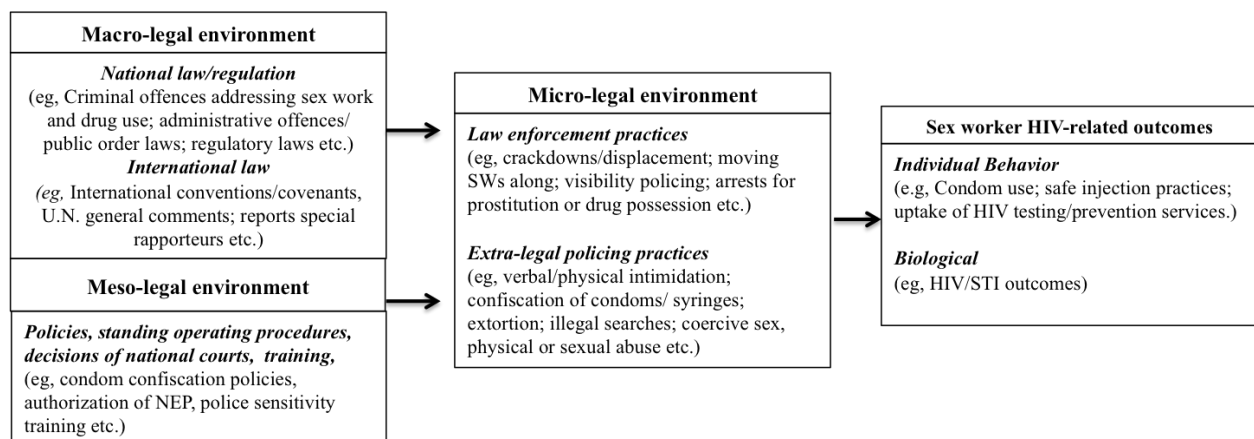
Table 2.1. Study and intervention characteristics, description HIV/STI outcomes and police measures
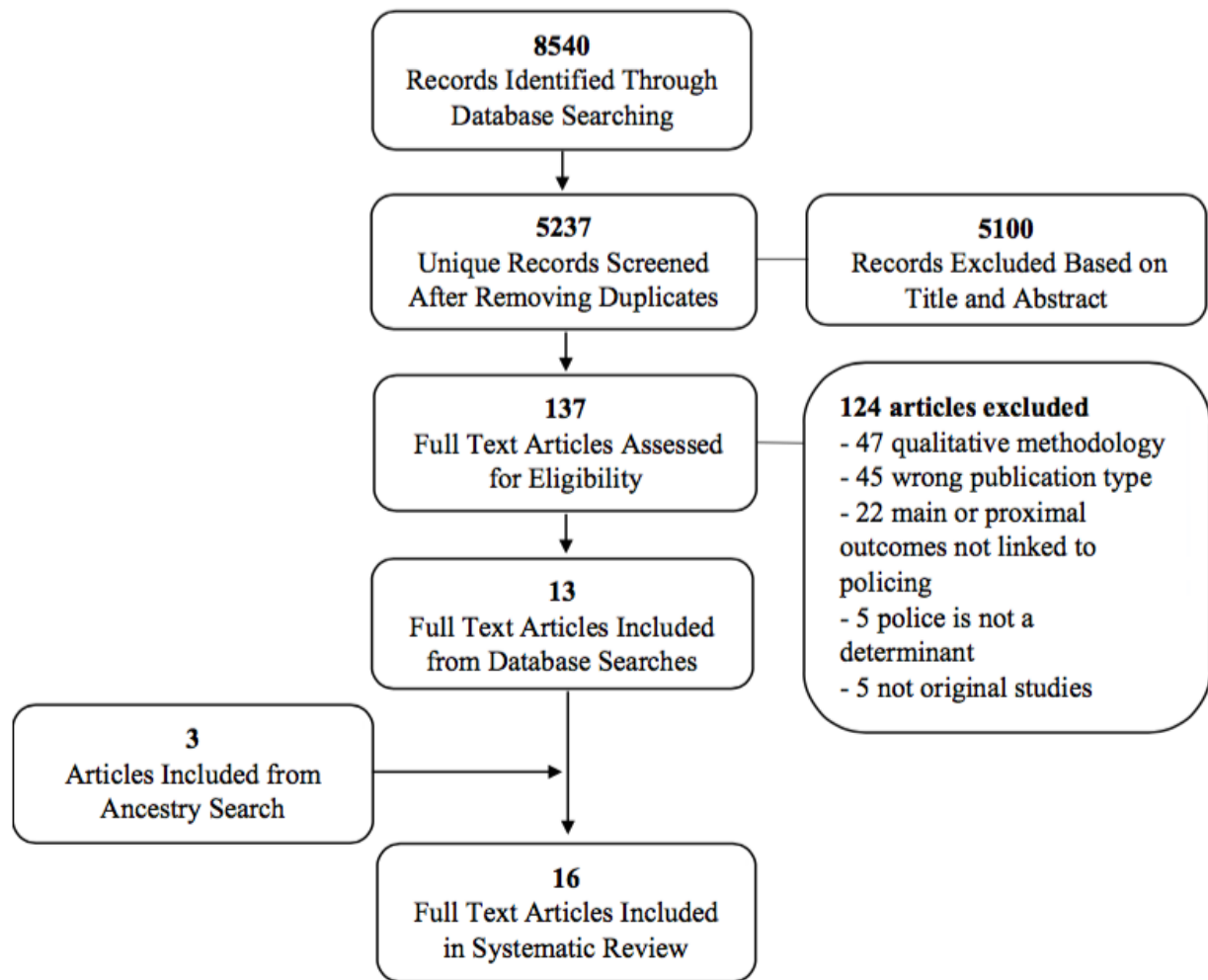
Figure 2.2. Flowchart of search strategy

Author, Publication Date	Country (cities)	Legal status	Study dates	Study design	Sample size, Population of interest [d]	Police measure	% Reporting police measure	Outcome	% With outcome (Overall/Population with police measure only)	Association (95% CI) [e]
Chen et al., 2012	Mexico (Nuevo Laredo, Ciudad Hidalgo)	Partially Criminalized	2009-2010	Cross-sectional	200 FSWs	Ever arrested	28.6	- Current STI symptoms	16.5/45.5	aOR: 2.3 (1.0, 5.0)
						Arrested in the last year	16.5	- Current STI symptoms	16.5/27.3	OR: 2.2 (0.9, 5.4)
Decker et al., 2012	Russia (Moscow)	Criminalized	2005	Cross-sectional	147 FSWs	Sexual coercion	36.6	- Current HIV/STI infection	31.3/44.2	aOR: 2.5 (1.2, 5.4)
Decker et al., 2014	Russia (Kazan, Krasnoyarsk, Tomsk)	Criminalized	2011	Cross-sectional	754 FSWs	Sexual Coercion	3.1	- Current HIV Infection	3.9/13.0	aOR: 3.5 (0.9, 12.9)
						Police extortion	28.4	- Current HIV Infection	3.9/5.1	aOR: 1.1 (0.5, 2.2)
Erausquin et al., 2011,	India (Andhra Pradesh)	Criminalized	2009-2010	Cross-sectional	835 FSWs	Sexual coercion	10.9	- Recent STI symptoms	48.5/74.7	aOR: 3.6 (2.1, 5.9)
								- Inconsistent condom use	24.0/31.9	aOR: 1.5 (0.9, 2.5)
								- No condom for more money	18.1/28.6	aOR: 2.0 (1.2, 3.4)
						Extortion	12.0	- Recent STI symptoms	48.5/81.0	aOR: 5.1 (3.0, 8.7)
								- Inconsistent condom use	24.0/41.0	aOR: 2.4 (1.5, 3.7)
								- No condom for more money	18.1/34.0	aOR: 2.8 (1.7, 4.4)
						Condoms Confiscated	7.4	- Recent STI symptoms	48.5/74.2	aOR: 3.1 (1.7, 5.7)
								- Inconsistent condom use	24.0/51.6	aOR: 3.6 (2.1, 6.1)
								- No condom for more money	18.1/43.6	aOR: 4.1 (2.3, 7.2)

						Workplace raid	26.8	- Recent STI symptoms	48.5/71.4	aOR: 3.7 (2.6, 5.3)
								- Inconsistent condom use	24.0/26.4	aOR: 1.2 (0.8, 1.7)
								- No condom for more money	18.1/21.9	aOR: 1.5 (1.0, 2.3)
						Arrested in last 6 months	12.0	- Recent STI symptoms	48.5/77.0	aOR: 3.8 (2.3, 6.2)
								- Inconsistent condom use	24.0/35.0	aOR: 1.8 (1.1, 2.9)
								- No condom for more money	18.1/31.0	aOR: 2.4 (1.4, 3.9)
Erausquin et al., 2014,	India (Andhra Pradesh)	Criminalized	2006-2010	Cross-sectional	1680 FSWs	Sexual coercion	11.1	- Recent STI symptoms	44.3/65.6	aOR: 2.2 (1.6, 3.1)
								- Inconsistent condom use	34.2/33.9	aOR: 1.2 (0.8, 1.6)
								- No condom for more money	21.3/33.3	aOR: 2.0 (1.4, 2.9)
						Extortion	14.8	- Recent STI symptoms	44.3/64.9	aOR: 2.4 (1.8, 3.2)
								- Inconsistent condom use	34.2/42.3	aOR: 1.6 (1.2, 2.1)
								- No condom for more money	21.3/36.3	aOR: 2.5 (1.8, 3.3)
						Condoms Confiscated	7.6	- Recent STI symptoms	44.3/66.4	aOR: 2.4 (1.6, 3.6)
								- Inconsistent condom use	34.2/43.8	aOR: 1.7 (1.2, 2.5)
								- No condom for more money	21.3/46.9	aOR: 3.8 (2.6, 5.6)

						Workplace raid	36.1	- Recent STI symptoms	44.3/58.3	aOR: 2.2 (1.8, 2.8)
								- Inconsistent condom use	34.2/34.8	aOR: 1.1 (0.9, 1.4)
								- No condom for more money	21.3/26.5	aOR: 1.6 (1.2, 2.0)
						Arrested in last 6 months	14.5	- Recent STI symptoms	44.3/60.1	aOR: 1.7 (1.3, 2.3)
								- Inconsistent condom use	34.2/35.8	aOR: 1.2 (0.9, 1.6)
								- No condom for more money	21.3/28.8	aOR: 1.5 (1.1, 2.1)
						Summary measure (1 police interaction)	19.8	- Recent STI symptoms	44.3/52.1	aOR: 2.0 (1.5, 2.6)
								- Inconsistent condom use	34.2/29.5	aOR: 0.9 (0.7, 1.2)
								- No condom for more money	21.3/18.1	aOR: 1.0 (0.7, 1.4)
						Summary measure (2 or more police interaction)	22.7	- Recent STI symptoms	44.3/63.1	aOR: 3.0 (2.3, 3.9)
								- Inconsistent condom use	34.2/38.2	aOR: 1.4 (1.0, 1.8)
								- No condom for more money	21.3/33.3	aOR: 2.4 (1.8, 3.2)
Erickson et al., 2015,	Uganda (Gulu)	Criminalized	2011-2012	Cross-sectional	400 FSWs	Police presence rushed negotiations	37.3	- Dual Contraceptive Use	45.0/31.0	aOR: 0.7 (0.4, 1.0)
						Displacement by police	28.9	- Dual Contraceptive Use	45.0/28.0	OR: 0.9 (0.6, 1.4)

Study	Country	Legal Status	Year	Study Design	Sample	Exposure	%	Outcome	%	Effect Estimate
Gertler and Shah, 2011 [a]	Ecuador (various)	Partially Criminalized	2003	Cross-sectional	2914 FSWs	Street enforcement	NA	- Has STI	*NA*	*Beta: -0.1 [a]*
								- Ever STI Infection	*NA*	*Beta: -0.3 [a]*
								- Herpes	*NA*	*Beta: -0.1 [a]*
						Brothel enforcement	NA	- Has STI	*NA*	*Beta: 0.0 [a]*
								- Ever STI Infection	*NA*	*Beta: 0.1 [a]*
								- Herpes	*NA*	*Beta: 0.03 [a]*
Pando et al., 2013	Argentina (various)	Partially Criminalized	2006-2009	Cross-sectional	1255 FSWs	History of Arrest	45.4	- Current HIV infection	2.0/3.2	aOR: 1.8 (1.1, 3.0)
								- Current syphilis infection	22.4/29.5	aOR: 1.5 (1.2, 1.7)
								- Irregular condom use (non-client)	82.4/84.4	aOR: 1.0 (0.8, 1.3)
								- Irregular condom use (client)	11.4/14.7	aOR: 1.1 (0.9, 1.4)
Pitpitan et al., 2015	Mexico (Ciudad Juarez)	Partially Criminalized	2010	Randomized control trial	213 FSWs-IDUs	Syringe confiscation	NA	- Safe injection	NA	aOR: 0.6 (0.4,1.0)
Quiao et al., 2014	China (Guangxi)	Criminalized	2011	Cross-sectional	794 FSWs	Ever arrested	5.7	- Consistent condom use	<39/NA	OR: 0.8 (0.4, 1.5)
								- Access HIV testing	<50/NA	aOR: 2.8 (1.2, 6.2)
								- Access HIV prevention services	73/NA	aOR: 4.6 (0.9, 23.3)
Shannon et al., 2009	Canada (Vancouver)	Partially Criminalized [b]	2006	Cross-sectional	205 FSWs-FTSWs	Displacement by police	44.4	- Pressured into unprotected sexual intercourse with client in	24.9/38.4	aOR: 3.1 (1.4, 7.4)

								last 6 months		
						Zoning restriction following previous charge	8.7	- Pressured into unprotected sexual intercourse with client in last 6 months	24.9/50.0	aOR: 3.4 (1.2, 9.4)
Strathdee et al., 2011	Mexico (Cuidad Juarez, Tijuana)	Partially Criminalized	2008-2009	Cross-sectional	620 FSWs-IDUs	Syringe confiscation	29.0	- Current HIV infection	5.3/8.1	aOR: 2.4 (1.2, 5.0)
Strathdee et al., 2013	Mexico (Cuidad Juarez)	Partially Criminalized	2008-2010	Randomized control trial	300 FSWs-IDUs	Arrested during 6 moths prior to enrollment	49.0	- HIV/STI incidence	67.4 (f)/NA	Not available
	Mexico (Tijuana)	Partially Criminalized	2008-2010	Randomized control trial	284 FSWs-IDUs	Arrested during 6 moths prior to enrollment	40.9	- HIV/STI incidence	44.3 (f)/NA	aRR: 2.7 (1.4,5.2) (c)
Zhang et al., 2013	China (Guangxi)	Criminalized	2011	Cross-sectional	720 FSWs	Experience of police arrest	NA	- Unprotected sex in the last sex act	NA	aOR: 2.6 (1.4, 4.7)

Table 2.1. Study and intervention characteristics, description HIV/STI outcomes and police measures

Notes

(a) Population-level estimates across communities of adjusted beta coefficient using linear regression
(b) The law changed in 2014 to decriminalize but this research was conducted prior to the change
(c) Population-level estimates from Poisson regression across different risk groups
(d) FSW= cis-female sex worker; FTSW= trans-female sex worker; IDU= injection drug user

(e) OR= Odds Ratio; aOR= adjusted Odds Ratio; aRR=adjusted Relative Risk; Beta=Beta coefficient from linear regression.
(f) HIV/STI incidence density over 12 months across four different intervention groups

2.4. Results

The search process is described in Figure 2, and results are displayed in Table 1. Overall, 16 quantitative studies(31, 45, 65, 66, 77-88) were identified that met our inclusion criteria. They represent a body of papers that contribute to the empirical examination of the theory that policing practices represent a significant micro-structural determinant for HIV-risk among sex workers.

2.4.1. Study Characteristics

The studies cover a fairly diverse range of geographic regions, given the number of studies, but the diversity of countries within regions was small. Five of the studies were conducted in Latin America of which four were in Mexico, the three in Eastern Europe were all based in Russia, one was in Central East Africa, one was in North America and three in Asia, two of which were in India. Just half (50%) of studies were conducted in settings where sex work is criminalized, the rest were conducted in settings that we have defined as partially decriminalized, defined as the removal of at least some criminal penalties in relation to sex work, based on a review of the countries legal frameworks(89).

One of the studies considered women inclusive of trans(45), with cis-female sex workers who inject drugs considered in 3 of the 16 papers. All of the studies except one included samples of sex workers from multiple sex work environments (e.g., brothels, street, motels), with the one exclusively focusing on truck stops as the sex work venue(77). Only 3 out of the 16 studies included <18 year olds in their sample (66, 80, 82).

2.4.2. Study design and measures

Fourteen of the studies (88%) used a cross-sectional study design. The remaining two studies (13%) employed a randomized controlled study design (84, 86) in the context of intervention studies. Of the three studies that were interventions only one set out to examine the intervention's impact on reductions in police measures (79). The other two intervention studies looked at an injection risk intervention. One evaluated the intervention's efficacy (86), where arrest was a control measure, and the other looked at the efficacy of the intervention in reducing receptive needle sharing, with police behaviors as moderators (i.e., arrest and syringe confiscation)(84).

In nine studies (56%) there was a single measure for police behavior. Considering 'legal enforcement practices' as set out in our conceptual framework, 5 studies look at arrest (i.e., arrest ever, or arrest in the last 6 months) as the only measure of police practices(77, 83, 85, 86, 88). Only one study defined arrest as arrest for sex worker related activity (83). The remaining four single measure studies look at what we term 'extra-legal policing practices.' Two measured syringe confiscation in the context of FSWs who inject drugs (84, 87) and 2 studies looked at sexual coercion by police (66, 82). The remaining seven studies (44%) considered between 2 and 5 measures to assess police practices towards sex workers. In three of these studies police measures were made up of 5 items(31, 65, 79), although 2 of these used the same data and measures. The predominant focus of measurement, where more than one police measurement was included was on 'extra-legal policing practices', including sexual abuse(31); sexual coercion (e.g., sex in exchange for leniency, or to avoid arrest or trouble)(31, 65, 66, 78, 79, 82); extortion (e.g., money, gifts, bribe) (31, 54, 65, 79);and condom confiscation(65, 79). Five of the 16 papers (31%) looked at day to day policing strategies aside

from arrest i.e., displacing sex workers and zoning restrictions(45); conducting workplace raids (65, 79); and general policing presence(80, 81).

2.4.3. Study outcomes

In thirteen studies (81%) HIV/STI was the main outcome, 10 of which found an association with at least one police behavior. Out of the 9 papers that looked at HIV/STI risk behaviors in addition to, or instead of HIV/STI as an outcome, all found an association with at least one police behavior. The most commonly measured HIV/STI risk behavior was inconsistent condom use(45, 65, 79, 83, 85).

Of those studies that were interventions (79, 84, 86) one considered the effectiveness of intervening on interactions between sex workers and the police(79). The study in question reports that both negative interactions between FSWs and police, and measures of HIV sexual risk declined over time from early in the intervention to full implementation. Although importantly, the authors also report that the strong association between police experiences and HIV risk remained stable and in some cases increased(79). The other intervention studies included both involved data from the same injection risk intervention (84, 86), one of which found that the intervention "buffered" the negative impacts of police behaviors on risky injection practice(84).

2.4.4. Quality assessment

As a whole, the studies in this analysis were of high quality. Overall scores ranged from 68% to 96%, with an average of 87%. However, only 4 of the 16 (25%) provided justification for their sample size, and only 7 of 16 (44%) reported response rates. In addition, 3 of the 11

studies (27%) that used HIV/STI's in their analysis used self-reported STI symptoms as opposed to biological testing. This is problematic because self-reported STI symptoms have not yet been validated as a proxy for STI prevalence(77). Furthermore, 4 of 16 (25%) failed to list or reference eligibility criteria. Lastly, 2 of the 16 studies (13%) did not discuss the legal status of sex work in the location data was collected. Because policies and regulations regarding sex work differ widely by location, all studies analyzing police practices should aim to describe the legal environment and how laws "on the books" are carried out in practice to provide context to the reader.

Table 2.2. Quality assessment of the 16 studies

First Author, Publication Date	Study Design[a]	Summary Score	
Beletsky, 2012	CS	20/23	87%
Chen, 2012	CS	19/23	83%
Decker, 2012	CS	21/23	91%
Decker, 2013	CS	22/23	96%
Erausquin, 2011	RCS	19/23	83%
Erausquin, 2014	CS	19/23	83%
Erickson, 2015	CS	20/22	91%
Gertler, 2011	CS	16/23	70%
Odinokova, 2014	CS	19/22	86%
Pando, 2013	CS	21/23	91%
Pitpitan, 2015[*]	RCT	26/28	93%
Quiao, 2014	CS	19/22	86%
Shannon, 2009	CS	21/23	91%
Strathdee, 2011	CS	21/23	91%
Strathdee, 2013[*]	RCT	28/29	97%
Zhang, 2013	CS	15/22	68%

[a] Study design abbreviations: CS=cross-sectional survey; RCT=randomized control trial; RCS=Repeated cross sectional

[*] To assess the quality of the two RCTs included in the review, 6 additional questions were added that focused on the reporting of the interventions, blinding, randomization, and loss to follow up.

2.5. Discussion

This systematic review points to an important but nascent field of quantitative evidence to support the significance of policing practices as an important structural HIV risk factor in the

lives of both trans and cis sex workers. Gaps remain, and the need for further quantitative studies to provide a strong evidence base from which to understand police practices significance as part of sex worker's broader physical HIV risk environment remains critical.

2.5.1. Progress in the field

Within the growing field of work on structural HIV determinants for sex work, police practices have received increasing attention, both in qualitative peer and grey literature. The studies included in this review represent the best evidence to support this broader body of work, and demonstrate a strong association between HIV outcomes and policing. A handful of the studies take as their primary focus policing's influence on sex workers' HIV risk environment, this lends to more detailed measurement of police behaviors and corresponding associations with HIV outcomes (31, 65, 79, 81, 82). These types of studies are encouraging, as they highlight the distinct ways policing can exert an effect on HIV risk, and provide a more nuanced understanding of the problem. This is critical for the development of evidence based structural interventions, which among other determinants, address policing practice. Although the epidemiological evidence base identified by this review is relatively small, it is nevertheless an important body of evidence linking police enforcement to sex workers' HIV risk.

2.5.2. Gaps and limitations

One of the most noticeable shortcomings of the 16 studies included in this review is the lack of diversity in settings. There are no studies in Central or Western Europe, and only one in a North American setting(45). In addition there is an overrepresentation of very specific settings, with 4 of the 16 studies conducted in Mexico (31, 84, 86, 87) and 3 in Russia(66, 78, 82). The lack of research findings in the USA reflects a dearth of domestic data in this country on sex

workers and HIV generally (90). However, it is important that future epidemiological studies on sex workers in a variety of settings consider the inclusion of specific measures of police related behaviors and practices in relation to HIV/STI outcomes. Arrest is an important measure of police enforcement activities towards sex workers and is positively associated with HIV/STI outcomes in all but one setting where it is measured (86). However, arrest alone is not the best measure of police enforcement and does not capture more nuanced police enforcement activities, as well as extra-legal policing practices towards sex work that may significantly influence sex workers' HIV risk environment. Only a handful of studies looked at 'legal enforcement practices' aside from arrest. More focus needs to be given to measuring these practices, given that results from these few studies suggest that activities carried out in the name of 'public safety' may have a considerable impact on sex workers' HIV risk, alongside more overt abuses of police power. The tendency for existing research to be focused in settings that have a weak normative human rights environment is reflected in the research focus on more egregious police practices. With respect to extra-legal police practices, mirroring the qualitative and grey literature, there is a strong focus on policing abuses within the context of sex workers' broader experience of sexual violence. This is an important focus, but also draws attention to the lack of empirical evidence to support important findings in the grey literature around other forms of police abuse and rights violations, for example, condom confiscation is reported in multiple settings(27, 28, 39, 68) yet it is only measured in two papers by the same author in the same setting (65, 79). It is also noteworthy that despite the considerable qualitative literature on physical abuse and harassment of sex workers this is not measured in any of the 16 papers.

Another gap in this group of studies is the exclusion of female transgender sex workers. Only one of the 16 studies considers 'females' inclusive of both cis and trans, and none consider just

trans women (45). A frequent justification for not including trans females within cis female sex worker studies is the unique individual, interpersonal, and structural vulnerabilities of transgender women, that require independent research. However, female transgender sex workers are recognized as sharing many of the structural risks as other sex workers, including with respect to the police (25, 91, 92). A large proportion of street-based FSWs are also drug users and face the dual risk of negative police interactions and arrest, as highlighted in 3 of our included papers (84, 86, 87)There is a need for more attention to be given to the inclusion of police measures that account for the broader range of negative police interactions that those sex workers who use drugs experience.

It is of note that only one study included in this review involved an intervention that sought to modify the impact of police behaviors on sex workers' HIV risk; while one other investigated the buffering effect of the intervention on sex workers' negative police experiences. Interventions that seek to target police practices are needed, but first and foremost is the empirical evidence to characterize the epidemiology of police enforcement as structural risk factor for sex workers' HIV.

2.5.3. Methodology

The majority of included studies are cross sectional, a study design often used for ease and practicality, particularly with respect to hard to reach populations, such as sex workers. However, this means temporality and causation are difficult to establish. Ideally there is a need for more prospective cohort designs, where longitudinal data will allow for more rigorous examination of the cumulative effects of negative police interactions on sex workers' HIV/STI risk. In the case of the one intervention study that sought to evaluate changes over time in

police interactions with FSWs, as part of a community mobilization intervention, a repeated cross sectional study design was used (79). The study points to positive effects of the intervention in reducing sex worker-police negative interactions, but with any structural intervention that seeks to target multiple structural domains, such designs suffer similar problems with respect to causal inference. The development of alternative evaluations such as hierarchical modeling approaches that take into account different aspects of the structural environment offer an important step forward(25).

2.5.4. Measurement

Few studies in this review focused on the measurement of police practices, and for the most part include only one survey item. In two of the papers (31, 82) the analysis explores the association of HIV/STI infection with police behavior as the outcome, highlighting that causation can be unclear. Looking forward, there is a need for more studies to hone in on the role of the micro-legal environment of policing practices on sex workers' HIV risk, this type of evidence base will aid the development of validated measures. Undoubtedly some aspects of police enforcement will be culturally specific, but across these studies, and the broader literature, we see that there is commonality across contexts. The majority of the studies included in this review suffer from relatively small sample sizes, which limits the precision of estimations, and the ability to find significance with respect to more nuanced police behaviors. This encourages reliance on indicators that offer a more crude measure i.e. arrest. One solution to this, and adopted in three of the studies (31, 65, 79), is to include a number of police measures that capture a range of interactions, but can be collapsed into a summary measure. An important step forward would be for future data collection with sex worker populations to prioritize the

inclusion of additional measures to capture sex workers' interactions with police, beyond arrest.

2.5.5. Limitations of study

The review's outcomes should be viewed in light of several limitations. Our inclusion criteria were set so as to produce a narrow critique of the quantitative literature around the role of micro-level policing practices as a structural cause or mitigating factor for risk, and potential median of structural interventions to reduce risk. We acknowledge the larger body of qualitative and grey literature that supports the role that police abuse and enforcement practices have on sex workers' HIV risk environment. However, this review was concerned with critiquing the strength, generalizability and quality of the present quantitative evidence base. We also exclude studies that looked at the association between police practices and sex workers' experience of violence. Acknowledging the extensive body of literature that supports the relationship(72), our focus was targeted to the influence policing practices have on more proximal HIV risk behaviors and HIV/STI outcomes among sex workers. Violence is more complicated in its association with HIV risk and has correspondingly been treated distinctly in the literature. The authors also recognize the broader legal and socio structural environment that can mitigate or potentiate sex worker's risk, of which police practices are only one part. However, it is important that individual structural determinants are critiqued and the evidence base for their place as 'key' determinants for sex worker's HIV risk is explored. We did not include male sex workers, due to their considerable diversity as a population and distinctiveness compared to female sex workers (93). However, we chose to include cis- and trans- female sex workers, not to undermine trans women's more complex constellation of vulnerabilities, but to present a female's experience of police as a structural risk factor. Finally,

a meta-analysis was not undertaken due to the heterogeneity in risk factors explored by different studies. Despite these limitations, this review offers the most comprehensive analysis to date of policing practices as a mechanism for HIV outcomes among sex worker populations.

2.6. Conclusions

This review supports the broader literature's findings that police practices are a significant structural determinant in the lives of sex workers, however the review exposes a relatively small pool of quantitative epidemiological evidence. The generalizability of the findings presented is limited by a dominance of focused research on police as a determinant in only a few settings, with other settings more often than not including sex worker's experience of arrest as the main measurement for operationalizing policing. There remains a pressing need for more epidemiology to better measure and more broadly document both legal and extra-legal enforcement practices as mechanisms through which sex worker's HIV risk is mediated. There is a considerably larger body of grey and social science literature in existence to support the finding that policing practices overwhelmingly undermine sex worker's safety and contribute to their HIV risk. It is important that such evidence is taken into account in the development of more complex quantitative measurement. It is of particular note that only one of the studies included transgender females, there is a need for this populations experiences of policing to be better quantified and represented in the literature. Only one of the studies documented in this review examined a structural interventions impact on modifying policing practices and women's HIV risk (79), suggesting a significant gap in evaluating interventions to mitigate the role of the policing on sex worker's environment. It is recognized that many such interventions occur at a grassroots level, and therefore are outside of the purview of this review(73). There remains a need for the science community to work in partnership with sex-work communities

and key stakeholders (e.g., police, legal service providers, brothel managers, etc.) to build evidence based evaluations that are grounded in sex worker's experiences with police. However, for such interventions to succeed it is vital that across varied settings researchers continue to work towards a more nuanced measurement of the role of police practices as a downstream legal determinant of sex worker's HIV risk environment.

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CHAPTER 3: METHODOLOGICAL APPROACHES FOR QUALITATIVE AND QUANTITATIVE STUDIES INTO THE RELATIONSHIP BETWEEN POLICE PRACTICES AND FSW'S HIV RISK ENVIRONMENT

(Unpublished)

3.1. Background

In order to study the complex relationship between the police and FSW's HIV risk environment, we need to consider both quantitative and qualitative approaches. Quantitative approaches can help provide risk estimates of how different specific risk behaviours and exposures are linked to specific outcomes (e.g., HIV infection, experiences of violence). However, we often do not know what behaviours are experienced by women. We also need to consider that FSWs only represent one side of the relationship with the police. Considering the role of the police requires an understanding of how police interact with FSW on a daily basis.

In this thesis I have used a mixed methods approach. Mixed methods approaches allow for the combination of qualitative and quantitative approaches, and can provide a better understanding of the research problem, in particular where complex phenomena are involved(*1*). Here mixed methods allowed for 'development' in that results from the systematic literature review were used to a) inform police indicator development for the quantitative work (Chapter 5) and b) obtain an understanding of gaps in the research around the operationalization of policing as a determinant of HIV risk that the police ethnography (Chapter 4) helped to expand upon. Finally an advantage of a mixed methods approach to this thesis was 'expansion' - the ability to extend the breadth and range of enquiry into policing as a structural determinant by using both quantitative and qualitative methods. In particular the ethnographic results helped to a) inform additional items for the quantitative work around day to day policing approaches in the study context and b) help better elucidate the possible pathways by which policing impacts FSWs' HIV risk in relation to experiences of violence (*2*).

In this chapter I set out the qualitative and quantitative methodological approaches I have used for the subsequent two chapters, both of which are published. Both of these studies are nested

in a cohort of street-based sex workers from Baltimore City in the US (the SAPPHIRE cohort), one of the largest longitudinal sex worker cohorts in the country. The overarching goal of the SAPPHIRE study is to examine the role of the police on the HIV risk environment of street-based cis and transgender female sex workers (over time. The study was comprised of two parts: a qualitative ethnographic component with the police which began prior to the sex worker cohort in July 2015 and a quantitative component, focused on the sex worker cohort.

3.2. Qualitative study

3.2.1 Study design and population

To investigate the drivers behind policing approaches to sex work in the U.S. context, I sought to qualitatively explore the ecological drivers surrounding policing practices and police attitudes to FSW in the context of Baltimore City, Maryland. The qualitative study involved a year-long ethnographic study with the Baltimore Police Department with observational ride-alongs (where a observer rides out in a police vehicle for a portion of a patrol shift) conducted across Baltimore City in districts identified through prostitution arrest data and preliminary stakeholder input (e.g., discussions with police, sex worker outreach organizations) as having a high concentration of street based FSW.

The aim of this study was to qualitatively explore street-based policing of FSW among patrol police and their superiors working in high crime areas of Baltimore City. The study completed 280 hours of observations with police patrol and 10 stakeholder interviews with senior police leadership in Baltimore City. I led the study design, data collection (including carrying out many observations and most key informant interviews myself) and analyses.

3.2.2. Which tools from the ethnographic toolkit?

Ethnography covers a wide range of methodological approaches(*3*). In this study the central ethnographic method employed was participant observations, this was triangulated with key informant interviews. Participant observations took the form of direct observations and informal interviews with patrol police in four districts in Baltimore City. In selecting an observation style the ethnographic study team I led, first conducted some initial field observations with patrol officers which revealed the necessity of 'moderate participation' while in the field, whereby the researcher sometimes joins the activities taking place, while also observing the phenomena(*4*). Police officers generally patrolled alone and were keen to engage in conversation, introduce observers to members of the public that they encountered, and generally involve the observer. Moderate participation allowed study staff to build a rapport with officers while maintaining the necessary detachment to remain objective. However, in participant observation the study staff's own discipline and background will also influence which events or conversations he or she considers are important and relevant to the research inquiry (*5*). For this reason a diverse ethnographic observational team was chosen, the team was made up of study staff that had training in anthropology, social epidemiology, criminology, law and/or experience of working with the police or of the social setting of Baltimore City. To compliment and ascribe meaning to the observational data collected we additionally collected data through key informant interviews with more senior police within the department (i.e., District level Commanders and Community Liaison Officers). District Commanders were deemed to have a more overarching understanding of current policing approaches to sex work in the context of broader district level policing priorities. Whilst Community Liasion Officers

were identified as being particularly familiar with community level complaints around sex work and how that influenced policing approaches.

3.2.3. Formulating and using observational and key informant interview guides

The field note is the key data source from observations and contains a written account of the observers' experiences and observations whilst in the field. A study field note aid (Appendix 1) was created by me to help partially standardize the type of information captured during observations, while acknowledging that there is no one right way to write a descriptive field note; an event or encounter may be prescribed different meanings and interpretations by different observers in the writing up (*6*). The fieldnote aid was made up of five key topics: shift features (e.g., routines of officers within a shift, descriptions of the neighborhoods visited); police practices (e.g., types of discretion, common practices); community interactions (e.g., who and how do officers interact with the community, including sex workers); police officer attitudes and views (e.g., what language do they use in talking about sex workers, what direct opinions do they express) and observer reflections. I used this framework to ensure that all study staff paid attention to key features of both the environment, interactions occurring within that environment, as well as officer styles and attitudes, while not being overly prescriptive. In addition to the field note aid I created an encounter form (Appendix 2) to help capture specific elements of police-FSW encounters (e.g., location, nature of incident, actions, use of discretion). All study staff received training from an ethnographer on how to write field notes and were provided with a field notebook and had a copy of the field note aid and encounter form as a reference point and to use during writing up.

The addition of key informants to this ethnographic enquiry was restricted to District and Special Operations Commanders and District Community Liasion Officers, as these were seen to be the best additional source of information on police policy and practice around the policing of sex work. In line with the iterative nature of data collection, the study Key Informant guide (Appendix 3) was amended after commencing ride-alongs. This ensured that what we learnt in the field from patrol officers was further scrutinized through key informant interviews with more senior officers. Specifically through the key informant interviews we sought to better understand organizational attitudes among senior officers around policing sex work, attitudes towards public health orientated approaches to policing marginalized populations, opportunities and challenges to improving relationships with the sex worker community, and alternative policing approaches towards the FSW community in Baltimore City.

All ethnographic instruments were informed and developed with reference to my conceptual framework (See Chapter 1 Figure 1), literature and broader police ethnographies and theory that indicated the importance of understanding the ecological environment in which officers work as the key to understanding the exercise of their discretion and police culture. Key domains covered by the instruments described above included, exploring the significance and influence of: 1) the physical and temporal geography of areas policed; community factors; social stigma identified through police attitudes and police organizational priorities; and a legal setting of criminalization.

3.2.4. Selecting observational units and participants

In selecting the police districts to include within our ethnography we first looked at open-access Baltimore arrest data between 2013 and 2015 for prostitution and drug arrests, selecting arrest

records for cis-females only(*7*). Districts that had higher levels of prostitution or prostitution and drug arrest activity were selected. Secondly, we held meetings with the Commanders at identified districts and leadership at outreach organizations (e.g., Baltimore Needle Exchange Program) who validated our initial choice of districts based on the arrest data, this yielded four districts. Although initially we aimed to sample police patrol officers for ride outs within these districts to reflect maximum diversity in relation to categories that we theorized would shape police officer's attitudes and practices towards policing sex work (e.g., gender, age, race, time in police work and time in District) in reality this was not possible. The selection of officers to ride out with was done by the district Shift Commander at the time of the study staff arrival and was based on who was available. Instead diversity was sought at the unit of observation, with ride-alongs conducted throughout the year during a variety of shift times to maximize variation in observations and officers. Key informant interviews (n=10) were conducted with police leadership (i.e., District Commanders and Community Liaison Officers). Sampling was purposive, based on the knowledge of our police liaison for the study Sergeant Derek Loeffler who worked at the Baltimore City Police Department headquarters, and opportunistic, with interviews limited to those available and willing.

3.2.5. Police observations - process

A total of 54 ride-alongs (281 hours) were completed between July 16th 2015 and February 25th 2016 with 64 unique officers. The majority of ride-alongs (n=46) were with routine patrol, and a small number were with two specialized units, n=2 with Vice and n=6 with District Drug Operations (DOP) officers located at the District level who are tasked with drug enforcement. Vice is a centralized unit that conducts undercover stings to arrest sex workers and undertakes sex trafficking related enforcement.

The research team was diverse enough in gender (mix of female and male staff), ethnicity (2 staff were non-white) and social background (2 staff were local to Baltimore) to ensure that we were able to minimize observational biases(*8*). All staff underwent additional training in ethnographic data collection and safety training before commencing field observations. The SAPPHIRE study field coordinator worked with the shift commander at each of the 4 police districts selected to schedule shifts a month in advance based on study staff availability. Shift schedules were: 7am-5pm; 1pm -11pm; 4pm-2am; 10pm-8am and were on average 4hrs long, but some were as long as 10 hrs. There were no pre-screening or eligibility requirements for the ride-along. Police officers were either normal patrol officers or special operations officers from Vice or drug operations. Observations were staggered over 8 months of data collection, to ensure temporal factors such as shift time and season were taken into account. When the study staff member arrived at the district for a scheduled ride along they informed the front desk officer that he or she was there for a ride-along. When introduced to the officer the study staff member explained the purpose of the study and read through the oral consent form (Appendix 4), once consent was given the ride-out commenced. Field notes were handwritten in a notebook or typed on a smartphone due to difficult conditions (e.g., low lighting, moving vehicles etc.) No audio or visual files were collected as part of the study. The field note aid and encounter form helped field observers structure note taking (e.g., features of environment, policing priorities, officers' attitudes/views, interactions, routines and practices), capture specific elements of police-FSW encounters (e.g., location, nature of incident, actions, use of discretion), and ensure consistency across observations. At the same time fieldworkers were also encouraged to record observations, reflections, and even idiosyncratic details that enabled them to better contextualize their experience as it occurred in the moment, while preventing misinterpretations that might occur if quotes or observed details were decontextualized.

Observers generally rode along with a single officer and sat in the front of the vehicle, which aided conversation and rapport building. During street stops and citizen encounters observers would, if safe and appropriate, leave the patrol vehicle and observe exchanges. Additionally, during the ride out the study staff member collected demographic information on the officer(s) they rode out with in a demographic log: age, gender, time in police force. No compensation was provided, as this was against police policy. At the end of the ride out the study staff were dropped back at the District headquarters and would check in with the study field coordinator.

All field notes were written up in detail within 48 hours to avoid recall bias. Raw notes and electronic written notes were then transferred to me for secure storage. Debriefing on ride outs occurred with study staff on a fortnightly basis until data collection was concluded. In addition study meetings provided an opportunity for reflexivity(*9*). Study staff were encouraged to share their personal thoughts and feelings about how their life experiences, gender, sex, and other factors might influence their field-note taking, but also how it may influence how police officers engaged with them.

3.2.6. Interviews with key informants

Concurrent with observational data collection key informant interviews were carried out with District Commanders and Community Liaison Officers at each of the 4 police Districts included in the study. In addition a key informant interview was held with commanders of special operations, Vice due to their specific experience in coordinating city wide sting operations against street based sex work. Key informants were contacted directly by the field coordinator for the study and a time scheduled for me and a study staff member to visit the relevant district. Interviews were conducted in the key informants' own office or private

meeting room at the District. Before commencing the interview the key informant was taken through a written consent form (see Ethical Approvals and Considerations section below) and asked whether they were happy to be audio recorded or would prefer that just notes were taken. Of the 10 key informants interviewed some agreed to be audio recorded and the remainder elected to just have notes taken during the interview. A key informant guide (Appendix 3) was used to guide the interview and included topics such as: organizational attitudes among senior officers around policing of sex work; attitudes towards public-health orientated policing approaches; and opportunities and challenges to improving police and sex worker community relations. Interviews lasted on average 50 minutes.

3.2.7. Ethical approvals and protection of human subjects

Before commencing the study ethical approval was sought and obtained from the Johns Hopkins School of Public Health and LSHTM ethical committees. Here I briefly outline the processes that were put in place to guarantee participant confidentiality and anonymity, as well as voluntary participation in the study.

All staff engaged in the study had to successfully complete an online human subjects research ethics training program through CITI, the Collaborative Institutional Training Initiative.
Privacy and confidentiality of study participants is an ethical duty and was taken very seriously by study staff. Privacy risks relate to the ability to identify participants, and the potential harms they, or groups to which they belong, may experience from the collection, use and disclosure of personal information. Before and during the consent process study staff continually emphasized that participation in the study was completely voluntary and every action would be taken to protect their privacy.

Informed consent is crucial to securing participants' right to privacy, and was obtained from participants (both ride-along officers and key informants) before engaging in any study activities. The informed consent forms (Appendix 4) described the purpose of the study, the participant's role, any potential risks, and efforts that would be made to protect the individual. The person obtaining consent had to ensure that the participant's questions were answered and that the participant appeared to understand the study requirements and the risk/benefits. The consent process made clear to the participant that he or she is free not to participate, and that the choice to decline will not be shared with his or her employer. This was to take account of the fact that police may feel pressured to cooperate with the study, due to senior police-level support for the study. Consent was obtained directly prior to the conduct of a ride out or interview. The observer or interviewer provided the participant with a copy of the oral consent form containing a description of the purpose of the study and the nature of the interview. The interviewer read the form aloud to the participant. In particular the consent form made clear that participation was voluntary and refusal will not affect his or her employment or be transmitted to his or her supervisor. The interviewer then asked if the participant had any questions and answered any questions the participant may have had. If the participant consented, the interviewer wrote the KI/Participant ID number at the top of two copies of the form. He or she gave one copy to the participant and kept one in the study binder for file retention. If the participant consented verbally, the interview or ride out would then proceed. If consent was not obtained, the interview or ride out would not proceed.

All study data was stored securely in accordance with JHSPH and LSHTM data retention and protection policies. For police ride outs we did not have the individual names of officers, only demographic information which was held on a password-protected Microsoft Excel

spreadsheet. All handwritten field notes were stored in a locked cabinet in the study office and any notes on mobile phones deleted after hard copies of notes had been written up. Written up observational notes were transferred via a secure transfer system and stored in password protected online files. Key informant participants were supplied with non-identifiable ID numbers, which were used exclusively on all study materials linked with the participant to ensure confidentiality of their information. A master tracking sheet linking the names of the participants with their ID numbers was kept locked in the study office with limited access by only authorized study staff. Observers and interviewers were responsible for safeguarding all sensitive study materials while in their possession. Materials had to be secured on one's person, in the specified study folder and accounted for. Materials could not be left unattended, left loose in one's bag or otherwise untracked. All study materials were returned to the study office or designated locked cabinet as instructed by the Study Director at the first available opportunity after completion of a ride out or interview. All excerpts are presented anonymously, with any potentially-identifying biographical details, including districts in which police were stationed.

In addition, given the level of risk involved with police observations at a time when the city was seeing a historic spike in violence the study adopted strict safety protocols that are set out in a manual of procedures (MOP) written by me (see excerpt in Appendix 5). Included in the MOP were incident forms if observers witnessed police mistreatment that could be forwarded directly to the central police department.

3.2.8. Staff meetings and early analysis process

Throughout fieldwork and data collection fortnightly study team meetings provided an opportunity for the field observers to meet and discuss methodological and ethical considerations and any staff safety considerations. To help facilitate discussions around individual study staff observations we would circulate a different set of field notes to be looked over in advance of a meeting and then have a discussion around those notes including: the opportunity to constructively critique the writing up or style of the observation; similarities and differences between the observations; reflect on potential emergent themes in the ride outs (e.g., officer language around talking about sex work, types of discretion exercised) and areas requiring future exploration. Early emergent themes documented in my meeting notes and write ups included: different policing approaches based on space (e.g., drug markets v gentrified neighborhoods), police language to describe FSW and role of time in the field on police attitudes and practices. These notes informed later coding (see in-depth analysis below). Notes and findings from key informant interviews would also be shared and discussed in these meetings, providing an early opportunity to triangulate findings. Data collection concluded when saturation was reached, in that no new information was being gathered from observational ride outs with respect to observing police interactions with sex workers.

3.2.9. Analytical lens

Having identified a gap in public health and sex worker researchers empirical knowledge around what drives policing approaches to sex work, I identified a priori literature and concepts that might help shed light on my research question and help me understand policing of sex work as a underexplored social phenomena (See Chapter 1). In particular as depicted in my conceptual framework (See Figure 1.1. Chapter 1) I was particularly interested in exploring

how ecological factors might influence police culture and practice. Observational and ethnographic methods particularly lent themselves to my enquiry in that ethnography engenders analysis that attends to the variance in and contextual specificity of policing. Throughout data collection as I read through data I sought to engage in an ongoing process of reflexivity asking how what I was seeing in the observations added to or fell outside the scope of the initial research enquiry and ensuring that observational data collection was meeting the overarching goal of the study - to better understand the factors that underscore and shape police practices towards sex workers.

3.2.10. In-depth analysis

Ethnographic data was analyzed adapting a pluralistic theory and data driven approach, that was both inductive and deductive(*10*). Preliminary data analysis began during the process of data collection, with team discussions and team notes informing subsequent observations. Concurrent with data collection field notes were reviewed by me on an ongoing basis to familiarize myself with the data, this involved analytical memo writing in which I would summarize broad emergent themes that I identified across observations specifically relevant to the area of my research enquiry into policing of sex work and similarities and differences between observations e.g., difference in police district styles that was often driven more by social environment (e.g., gentrifed residential vs open air drug markets) in which police officers operated. Towards the end of data collection initial open-coding by myself involved reading and line-by-line analysis of typed field notes from all four districts and key informant interviews to categorize and conceptualize the data by hand and identify both inductive, in vivo codes driven by the text and deductive codes driven by my research question. This process was informed by memos made during field study team meetings that contained early interpretations

of data. This led to an initial codebook that was applied by the coding team using Nvivo software to an additional number of fieldnotes and then revised iteratively by the coding team to improve the scope of the codes and subcodes. The process of revision was done through meetings with the coding team before a final codebook was applied to all the data. Consistency in coding was achieved through a process that involved the following key elements: ensuring the final coding team were familiar with the codebook and had sufficient input on the final codebook; training and practice coding, where differences in application or interpretation of codes was discussed; ensuring where possible coders coded their own fieldnotes; and regular checking of coding by myself for consistency in interpretation and application of the codebook.

Once the first round of coding of data had been completed by the coding team I began to work with the data to move from first level coded data to second level coding, and concept level categories. This process was in particular informed by the concept of police culture (*11*), including how broader ecological factors can shape police culture(*12*), as well as complementary criminological and sociological literature exploring the more explicitly spatial exercise of police discretion(*13*, *14*). Team feedback on emergent categories built an audit trail to ensure the inclusion of multiple perspectives and enhance reliability(*15*). This process ended up in the distillation of the core conceptual categories of Chapter 4.

3.3. Quantitative methods for Chapter 5

To understand the role of law as a structural driver for HIV risk among FSW I sought to quantitatively explore the type and frequency of police encounters with FSW and their associations with client violence, as an identified HIV risk factor in the context of Baltimore City, Maryland. The study is published in American Journal of Public Health (*16*), and is based

on data collected from the SAPPHIRE cohort. Here I set out supplemental details on the methods used in this data collection and analysis.

3.3.1 Participatory research approach

In sex worker research, participatory approaches look to position community members actively within the research (as opposed to being passive subjects), and can help ensure sex workers have a greater say over the research(*17*, *18*). In particular it provides an important way to recognize them as legitimate producers of knowledge(*19*). From the outset of the design of the SAPPHIRE Study it was recognized by all study leadership, including myself, that to ensure the legitimacy of the research and root the study within the community it was intended to benefit we needed to find opportunities to incorporate sex worker community participation. To this end we established a Community Advisory Board (CAB) made up of current and former sex workers living in Baltimore City. CAB members were compensated for their time and met on a monthly basis for the duration of the study. Their role included at the outset providing feedback on survey questions (e.g., appropriateness of language), input on what services and referrals would be useful to women, or what additional items (e.g, shampoo, condoms, warm socks in winter) might be available. Most importantly the CAB provided a continuing space for researcher accountability and reflection, and ensured our work remained grounded in the realities of FSWs' lived experiences.

3.3.2. Recruitment of participants

The cohort of street-based FSW were followed across 12 months with five study visits in total (baseline, and 3-, 6-, 9-, 12-month follow-up). Women were recruited through targeted sampling at street-based locations, which was informed by ethnographic work and geospatial mapping of city-level sex work arrest data and a variety of other data related to this

population(*7*). Women were approached on the street and if interested, screened on the study van. Eligibility criteria were: (1) age ≥ 18 years; (2) sold or traded oral, vaginal or anal sex "for money or things like food, drugs or favors"; (3) picked up clients on the street or at public places ≥ 3 times in the past 3 months; and (4) willing to undergo HIV and STI testing. After providing informed consent, participants completed a standardized 50-minute computer assisted personal interview (CAPI) with a trained interviewer and HIV/STI testing. Participants were permitted to complete any study visit as long as they were within the window period regardless of whether they had completed their previous visit. Participants were compensated with $70 for the baseline visit 12-month visits, and $45 for 3-, 6- and 9-month follow-up visits.

3.3.3. Testing for HIV and STIs

Trained staff performed oral HIV tests (OraQuick© Advanced Rapid HIV-1/2 test kit). In addition, biological specimens were collected for STI testing using self-administered vaginal swabs and sent for gonorrhea (GC), chlamydia (CT), and trichomoniasis (TC). Laboratory testing used nucleic acid amplification tests (NAAT) (Hologic, Marlborough, Massachusetts, USA). Participants received on the spot counseling for positive HIV tests and were referred to a provider of their choice. All testing was confidential and described in the consent process, results were forwarded to the Baltimore City Health Department for patient follow-up to ensure they were engaged in care. Participants were notified of their STI results by Disease Intervention Specialists with the Baltimore City Health Department or during follow-up interviews and provided with resources on where to seek treatment. Referrals to a range of local health and social service organizations (e.g., case management, counseling, drug treatment programs) were offered to all participants.

3.3.4. Questionnaires

We used a computer assisted personal interview (CAPI) with a trained interviewer to ask a series of questions to all participants.

3.3.4.1. Measures obtained from the questionnaires

We used the questionnaires to collect information on demographics, drug use, and sexual behavior. In addition, we collected information about FSWs' recent experiences with the police, as well as other identified structural determinants of HIV risk (e.g., homlessness, food insecurity) not the focus of this study. Police practices were divided into patrol enforcement practices and abusive practices that were informed by the police ethnography and broader review of the literature.

More specifically, we collected the following information on each participant

- **Drug use.** Drug use was defined as self report of using any of the following illicit drugs: heroin, crack cocaine, opioid and benzodiazepine pills (illegally obtained).

- **Time in and frequency of sex work**

- **Police interaction measures.** A list of different police interactions was developed from my systematic review of previous studies (Chapter 2) (27) and refined by a police ethnography conducted in Baltimore City (Chapter 4), and input from a Community Advisory Board (comprised of current and former sex workers). Police interactions were divided into two groups: patrol/enforcement practices and abusive practices. There were seven patrol/enforcement practices: asking the women to move along; performing a routine stop; offering assistance (being helped without expecting anything in return or being referred to health/social services e.g. drug/alcohol treatment, violence

shelter); conducting a search of person or property; confiscating drugs/drug paraphernalia; confiscating condoms; and arrest. The survey was unable to capture whether the circumstances made individual interactions legal or extrajudicial (e.g., confiscating needles obtained from a needle exchange program would be against policy directives in the State of Maryland). Abusive practices consisted of seven egregious acts, outside the scope of enforcement practices: verbal or emotional harassment (defined as verbal insults or attempts to intimidate non-verbally); sexual harassment or assault (defined as unwanted verbal or pysyical sexual attention or actual sexual contact); damage of property; physical violence; pressuring the woman into having sex in exchange for no arrest; acceptance of money or other goods in exchange for no arrest; and having police becoming clients. Each of the questions was answered with a 'yes' if the women had ever experienced that practice and 'no' otherwise. The only exception was police as clients, where only the prior three months were considered. We also created two aggregate measures: aggregate patrol/enforcement exposure (calculated as the total discrete number of different patrol/enforcement practices ever experienced) and aggregate abusive exposure (total discrete number of different abusive interactions ever experienced).

- **Client violence.** Clients were defined as "people you've had oral, vaginal or anal sex with for money, food, drugs or favors". We measured client violence (sexual and physical) using a 3-item adapted version of the Revised Conflict Tactic Scale.[26] We asked whether they had been hit, punched, slapped or otherwise physically hurt, threatened with a weapon or had a weapon used against them, or physically forced to have vaginal or anal sex when they didn't want to. Individuals were coded '1' if they had experienced client violence in the prior three months and '0' otherwise.

- **Infectious disease infection status.** As measured through testing performed at the survey time.

3.3.5. Data Analysis

We used bivariate and multivariable analysis to assess the quantitative relationship between police behaviours and the risk of experiencing client violence.

In bivariate analyses, we explored the associations of different demographic characteristics, working conditions, drug use and sexual risk behaviors covariates on the odds of having experienced any client violence in the past 3-months using Pearson's chi-square tests. For these measures and for the different police encounters, we also used a bivariate logistic regression model to evaluate the associations with recent client violence, adjusting for intra-zone correlations for women recruited from the same zone.

In multivariable analysis, variables from a set of a priori selected variables based on theory and areas of interest that were marginally significant in the bivariate logistic regressions ($P < 0.20$) were included in a multivariable logistic model with generalized estimating equations (GEE) with an exchangeable correlation structure and robust variance to adjust for zone clustering. As we were interested in the overall association of patrol/enforcement and abusive police practices with client-perpetrated violence, we considered the aggregate rather than the individual police measures in multivariable analysis. This approach assumes that each of the exposures included within the aggregate measures are of equal weight. We also assumed that a linear relationship between the number of interactions and the log-odds of violence, supported by observing an approximate linear effect when considering this factor as a discrete rather than

continuous covariate. As a sensitivity analysis, we also estimated relative risks in the final multivariable model using robust Poisson regression. Multicollinearity was assessed by uncentered Variance Inflation Factors. Analyses were conducted in Stata/SE 14.2 (College Station, Texas).

3.3.6. Ethical considerations

The SAPPHIRE Study was approved by the Johns Hopkins Institutional Review Board (IRB Number: 00005939) and additional approval for this dissertation was provided by the LSHTM (Ethics Reference Number:14163). Study participants were recruited and screened to participate in a baseline survey and four additional follow up surveys. Women were excluded if they were too high, too intoxicated or cognitively impaired at the time of screening. Women were protected against risks of participating in the study via a number of mechanisms including, written informed consent that occurred in a private location on the study van where the interviews were held.

Trained and experienced staff read through the consent form which described the purpose of the study, the procedures to be followed, and the risks and benefits of participation, in accordance with applicable regulations. Protections against loss of confidentiality were particularly important. Given the sensitive nature of the data collected (e.g., illegal sexual and drug use behaviors) a Certificate of Confidentiality was obtained to protect the privacy of study participants by withholding their identities (e.g., name and other identifying information) from all persons not connected with the research. It allows for, in some circumstances, refusal to give out study information about participants without their consent in legal proceedings. The

certificate of Confidentiality was explained to all participants during the consent process and any additional questions they had answered.

At least one staff member on the van must have completed the HIV/AIDS Counseling and Testing Skills Level 1 course and was required to give the participant their HIV test results and post-test counseling. Once HIV and STI testing were completed the participant would be offered additional relevant information (e.g. health providers, hours of operation, hours to call) and provided health and service pamphlets that were relevant to their needs based on staff assessment and questioning. For those who tested HIV positive it was essential that a member of staff trained in HIV/AIDS Counseling evaluated their immediate plans and needs, (where were they going, did they have someone they could talk to), a follow up check in was then provided by the field-coordinator within 48 hours. For STI testing participants would receive notification of results from the Field Coordinator within two weeks. Trained staff or health department disease intervention specialists attempted to contact all infected participants and refer them for treatment.

In addition to the sensitive nature of HIV and STI testing, other items covered in the survey raised topics of a potentially sensitive or traumatizing nature including raising difficult and painful memories. All staff received training in trauma informed care to help support staff in their discussions with participants around experiences of violence and adversity. Staff were trained on and had access to a large folder of local resource contacts and warm referrals to social and health related services. Part way through the study staff additionally received overdose training and all staff carried Nalaxolone.

Detailed quality assurance and quality control (QAQC) procedures were put in place for the collection and storage of data. A database management system maintained and tracked all data, which was stripped of identifiers and stored on a password-protected computer. Participant contact information was stored in a locked cabinet with limited staff access. Detailed QAQC procedures can be found in the SAPPHIRE studies manual of procedures that was written by me for the study (Appendix 5).

The study also had extensive field safety protocols in place to ensure the safety of staff who were often on the study van late at night or early hours of the morning in Baltimore neighborhoods that had incidents of drug related and gang violence. These safety protocols can be found in the SAPPHIRE's manual of procedures (Appendix 5). In addition to safety, the mental wellbeing of the staff was of paramount concern, given the serious nature of many women's experiences of sexual and physical violence and poor health and physical condition, and the fact that we were an observational study. We had staff check ins and a designated counsellor available to speak to staff.

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CHAPTER 4: ACHIEVING IMPROVED HEALTH AND HUMAN RIGHTS FOR STREET-BASED SEX WORKERS - AN ETHNOGRAPHIC EXPLORATION OF FACTORS THAT DRIVE POLICING OF FEMALE SEX WORKERS IN A U.S. SETTING

4.1. Abstract

"An ethnographic exploration of factors that drive policing of street-based female sex workers in a U.S. setting - identifying opportunities for intervention."

Background: Building on a broader sociological discourse around policing approaches towards vulnerable populations, increasing public health and human rights evidence points to policing practices as a key health determinant, particularly among street-based sex workers. Despite the importance of policing as a structural health determinant, few studies have sought to understand the factors that underlie and shape harmful policing practices towards sex workers. This study therefore aimed to explore the drivers for policing attitudes and practices towards street-based cisgender female sex workers.

Methods: Drawing on ethnographic methods, 280 hours of observations with police patrol and 10 stakeholder interviews with senior police leadership in Baltimore City, USA were carried out to better understand the drivers for policing strategies towards cisgender female sex workers. Analysis was data- and theory-driven, drawing on the concepts of police culture and complementary criminological and sociological literature that aided exploration of the influence of the ecological and structural environment on policing practices.

Results: Ecological factors at the structural (e.g., criminalization), organizational (e.g., violent crime control), community and individual level (e.g., stigmatizing attitudes) emerged as key to shaping individual police practices and attitudes towards cisgender female sex workers in this setting. Findings indicate senior police support for increased alignment with public health and human rights goals. However, the study highlights that interventions need to move beyond

individual officer training and address the broader structural and organizational setting in which harmful police practices towards sex work operate.

Conclusions: A more in-depth understanding of the circumstances that drive law enforcement approaches to street-based sex work is critical to the collaborative design of interventions with police in different settings. In considering public health-police partnerships to address the rights and health of sex worker populations in the U.S. and elsewhere, this study supports existing calls for decriminalization of sex work, supported by institutional and policy reforms, neighborhood-level dialogues that shift the cultural landscape around sex work within both the police and larger community, and innovative individual-level police trainings.

4.2. Background

The criminal justice system has been identified as a prominent apparatus for reinforcing stigmatization amongst vulnerable groups (*1*). Goffman wrote that stigma removes a persons' 'social acceptance' leaving them with a spoiled identity'(*2*). Stigmatization includes forms of labelling, stereotyping and discrimination(*3*) that lead to both individual and social exclusion, which has in turn been linked to a range of negative physical and mental health outcomes for vulnerable populations, including sex workers(*4*, *5*). Police interactions are an omnipresent feature in the lives of many marginalized communities, shaping their everyday existence (*6*). Extensive criminological and sociological literature has explored the role of policing in the social control of urban spaces and the communities within them (e.g., homeless persons, black youth, people who use drugs) (*7–10*). These works have included an examination of how policing drives socio-economic exclusion and 'system avoidance' whereby marginalized groups fail to access healthcare and other forms of social support that make up fundamental

social rights(*11*). Street-based cisgender female sex workers (FSW) represent one such important marginalized group, whose working conditions (e.g., criminalization of sex work, community stigma, client violence, frequent drug use)(*12*) place them in frequent contact with the police. Criminalization and police enforcement of sex work has increasingly been associated with negative health-related outcomes and human rights abuses among FSW including, increased risk of experiencing different forms of violence and sexually transmitted diseases(*13*).

FSW have been identified as a population who face a complex constellation of structural vulnerabilities (e.g., poverty, low health care access, exposure to violence, drug use)(*14*). Within this broader portrait of social and material adversity, research has begun to map the pathways by which policing of FSW influences individual (e.g., condomless sex) and interpersonal (e.g., client violence) HIV related risk(*15*, *16*). Laws relating to sex work furnish police with considerable discretion, which in turn has been shown to lead to exploitation in many contexts(*17*). Across different global settings research has documented human rights abuses by police towards FSW, including harassment, sexual and physical violence, and coerced sex under the threat of arrest (*18*). These types of violations impact women's safety (undermining FSWs' ability to seek police protection) and HIV risk (police-perpetrated sexual violence is often unprotected and associated with STI/HIV infection)(*18*). Studies have additionally measured enforcement strategies (e.g., police crackdowns, arrest, condom confiscation) which can similarly impact women's safety and harm reduction around STI and HIV transmission and infection(*19*). For instance, frequent arrest, crackdowns, and move along-tactics that displace FSW to unfamiliar areas can increase vulnerability to violence and move women further away from outreach and HIV prevention services(*20*) and are associated with client violence (Footer 2018). Condom confiscation can prompt unprotected sex and has

been associated with STI infection (*21*, *22*). A large proportion of street-based FSW in settings including the U.S. are also illicit drug users and regularly face the dual risk of negative police interactions and arrest associated with drug use (*23–25*). Studies have shown the adverse impacts of drug-related enforcement practices on HIV, including a positive association between syringe confiscation and HIV infection among injection drug users (*26*, *27*). Law enforcement practices such as enhanced police surveillance represent a major impediment to utilization of syringe services programs and other harm reduction approaches (*28*, *29*) that represent one of the most effective ways to protect rights and limit the human suffering associated with addiction.

In response to this accumulating evidence, attempts to forge partnerships between sex worker organizations and the police across diverse settings (including India, Nepal, Thailand, Australia) have been documented. Interventions have included improving communication between the local sex worker community and law enforcers, police trainings, and introduction of new policies to improve sex worker safety(*30*). In the U.S. there is a dearth of intervention work directly addressing the policing of sex workers. However, in the broader context of the failed 'war on drugs' (*31*) - a campaign in the United States since the 1970s to combat illegal drug use by large increases in enforcement, penalties, and incarceration for drug offenders - the U.S. is now mainstreaming public health-oriented harm reduction interventions aimed at illicit drug use (*27*, *32–34*) which has implications for many FSW who also use drugs. Studies have evaluated the effectiveness of police trainings and policy changes (e.g., diversion programmes) aimed at shifting police attitudes and practices, while securing police buy-in through a lens of occupational health and reducing rates of recidivism (*35–37*).

Despite some examples of positive steps to address policing's contribution to the HIV risk environment of two overlapping vulnerable populations, evidence suggests that shifting police culture and gearing day to day patrol practices towards public health orientated goals is both complex and challenging. In Krusi et al. (2016), a qualitative exploration of FSWs' policing experiences under a new Canadian policing policy intended to prioritize sex worker safety, the authors found that stigmatizing attitudes overshadowed and undermined any improvements to police protection (*38*). More studies are needed that focus on understanding the mechanisms and drivers that underlie police behavior and decision making. Such insights are critical to the design of interventions and police public health partnerships that address the health and rights of FSW and other marginalized populations. Current research is heavily based on quantitative epidemiological surveys and/or self-report qualitative interviews with FSW, but not police. Burris (2004) has suggested that research has missed the opportunity to focus on looking at the behavior of the police towards vulnerable populations and the drivers for it, thereby creating avenues from which to design interventions that address the underlying causes of the negative health and human rights impacts of policing *(39)*.

Ethnography engenders analysis that attends to the variance in and contextual specificity of policing taken towards marginalized groups. This approach allows for an examination of the gap between 'laws on the books'(*39*) (i.e., criminalization of sex work that demands arrest) and the realities of patrol officers' day to day practices. Bittner's (1967) formative work on Skid Row and many subsequent ethnographic studies have emphasized the discretion and autonomy with which street-level officers deploy the law and legal enforcement policies, with law often providing the legitimacy and authority to impose a variety of unchecked practices (*9, 40*). To understand what shapes police behavior towards vulnerable groups, the concept of police culture, defined as the shared norms, beliefs and values that shape police behavior (*41*),

is important. Traditional accounts of police culture suggest a homogenous police mentality whose values can be highly problematic with respect to vulnerable groups and human rights compliant policing. Cultural racism, for instance, has manifested in over-policing and abusive practices towards black and other minority groups (*42*, *43*).

In the field of domestic violence policing, elements of traditional police culture and a masculine ethos that frames 'real policing' as the policing of violent crime or large drug seizures, has been shown to influence officers' exercise of discretion and dismissive attitudes to domestic violence work (*44*). More contemporary accounts of police culture have moved away from a 'monolithic' interpretation of police culture, instead exploring the influence of broader social and political conditions, organizational considerations (e.g., leadership, supervisory styles) and individual officer occupational styles and agency in shaping behavior (*43*). Neighborhood context has also been shown to influence police behavior. (*45*) in his theory of policing explores the connection between police decision making and their ecological environments, putting forward the proposition that officers police less in high crime areas (e.g., viewing victims as less deserving, and crime as more normalized(*45*). Work by (*46*)exemplifies further efforts to understand the impact of the broader 'policing environment' in shaping officers' working culture.

This study seeks to identify some of the underlying drivers shaping police practices that have been previously examined in terms of their impact on FSWs' health and HIV risk. In particular, the present study aims to explore what factors influence: *a)* police practices already identified in the literature as adversely affecting street-based FSWs' HIV risk and human rights; and *b)* police officers' ability and willingness to adopt a more public health and rights orientated approach to street-based sex work. Through the observation of patrol officers in Baltimore, a

major U.S. city, we explore these factors, with particular attention to the broader ecological environment in which policing occurs. By ecological environment/context we are referring to economic, social and political factors, in addition to broader physical environmental influences (*39*). 'Street-based' sex workers refer to those who almost exclusively solicit clients on the street or in public places (e.g., parks), and are the focus of this study. Although street-based FSW represent a small section of those working in the broader sex industry, they are also the most visible and therefore vulnerable to policing tactics and abuse(*47*), as well as most urgently in need of improved police protection from violence(*12*). Our methods were designed to produce a nuanced description of the policing of street-based sex work to better inform future health and human rights and public safety interventions that mitigate the established negative health impacts of policing on street-based sex workers.

4.2.1 Context and research setting

Baltimore is an East Coast city that has been challenged by a sustained history of social and economic hardship, largely divided along racial lines, with white prospering neighborhoods sitting in stark contrast to impoverished and largely African American ones. A 2011-2015 U.S. census report highlighted that 23.7% of city residents live below the poverty line (American Community Survey, 2011-2015). Deeply embedded structural inequities are rooted in the decline of the city's manufacturing industry which led to major demographic change within the city, often referred to as the 'white flight', but also marked by the later exodus of Baltimore's black middle class (*48*). Today Baltimore's low-density city is best described as enclaves of wealth nested within expanses of city terrain characterized by open-air drug markets and high rates of violence. Street-based sex work, all aspects of which are criminalized (buying and selling) in the state of Maryland, is predominantly located in spaces that are within

or on the borders of Baltimore's surviving working class communities and the most hollowed-out neighborhoods. In the latter, boarded-up row houses often outnumber inhabited homes and the stoops are occupied by the runners of an illicit drug economy that perpetuates the city's violent crime. Street-based FSW in this setting are characterized by high rates of STI infection and co-morbidities related to drug use and violence (*49–51*). In particular, studies in this setting highlight the magnitude of the overlap between street based sex work and injection drug use. Amongst a cohort of 250 cis-FSW recruited in Baltimore City, 70% reported daily heroin use and 60% reported ever having drugs or drug paraphernalia confiscated (*50*). Despite the city's predominant black population, a number of the main sex worker strolls in Baltimore are dominated by white drug-using women, a group who in many ways embody the city's growing urban poverty.

Dating back to the early 1990s, the police response to sex work and illicit drug use was one of 'zero tolerance', characterized by large number of stops, searches, and arrests (*52*). During the time that this study was conducted, Baltimore city saw a surge in murder rates, with 344 murders recorded for the year of 2015 when data collection commenced (up from 211 murders in 2014) and a police department under unprecedented scrutiny and pressure (*53*). This scrutiny was occasioned by the death of Freddie Grey, a 25-year old black African American whilst in police custody. A subsequent report by the US Department of Justice concluded that Baltimore Police Department (BPD) requires widespread reform. Findings included unconstitutional stop and searches, and excessive use of force by officers, further eroding already fragile community trust in law enforcement. Although sex workers were not considered as a distinct population by the Department of Justice investigations, the report suggested that there could be a gender bias affecting police treatment of vulnerable women in the reporting of sexual assault, including FSW (Department of Justice Report, 2016 pg. 11). Our ride-alongs occurred in police

districts characterized by these abuses and police deficiencies, as well as the socioeconomic disparities that foster the police department's ongoing major enforcement challenges.

4.3. Methods

Ethnographic methods (i.e., key informant interviews, observational ride-alongs with police officers during their shifts) were employed in four police districts in Baltimore. In selecting these police districts, we first looked at open-access Baltimore arrest data between 2013 and 2015 for prostitution and drug arrests, selecting arrest records for females only (Open Source Baltimore). Districts that had higher levels of prostitution or prostitution and drug arrest activity were selected. Secondly, we held meetings with the Commanders at identified districts and leadership at outreach organizations (e.g., Baltimore Needle Exchange Program) who validated our initial choice of districts based on the arrest data. This paper reports on observational fieldwork conducted in these districts between 2015 and 2016.

The research team consisted of six field observers all trained in ethnographic observation techniques including social epidemiologists (KF, SP, SL), a criminologist (BS), an anthropologist (VK) and a research assistant with extensive knowledge of Baltimore City and our target population (SH). Observational ride-alongs with officers were conducted throughout the year during a variety of shift times to maximize variation in observations and officers. In addition to routine patrol officers, ride-alongs were done with two other specialized units that focused on sex work and drug policing. A total of 54 ride-alongs (281 hours) were completed between July 16th 2015 and February 25th 2016 with 64 unique officers. The majority of ride-alongs (n=46) were with routine patrol, and a small number were with two specialized units, described below, n=2 with Vice and n=6 with District Operations.

Vice is a centralized unit that conducts undercover stings to arrest sex workers and clients, and conducts enforcement around sex trafficking. In addition, district-level operations units consist of plainclothes officers whose role includes conducting undercover drug purchases and street stops investigations to build cases against violent offenders and drug organizations. All officers provided verbal informed consent and field observers accompanied them for a 2-10 hour period of a 10-hour shift, with an average ride-along lasting 5 hours. A field note aid and an encounter form were used to help field observers structure note taking (e.g., features of environment, policing priorities, officers' attitudes/views, interactions, routines and practices), capture specific elements of police-FSW encounters (e.g., location, nature of incident, actions, use of discretion), and ensure consistency across observations. At the same time fieldworkers were also encouraged to record observations, reflections, and even idiosyncratic details that enabled them to better contextualize their experience as it occurred in the moment, while preventing misinterpretations that might occur if quotes or observed details were decontextualized. Observers generally rode along with a single officer and sat in the front of the vehicle, which aided conversation and rapport building. During street stops and citizen encounters observers would, if safe and appropriate, leave the patrol vehicle and observe exchanges. Field-notes were written up within 48 hours by observers to minimize recall bias. Stand-alone quotes from field notes or quotes integrated within a field note are italicized to denote they are the direct quotes. All identifying information has been removed to ensure anonymity of the police districts and those observed. Field notes and interview extracts are labeled with the ride-along officer(s) type or rank, gender, race and age. In addition, any other individuals directly quoted in the field note are additionally identified (i.e., FSW, local resident).

Key informant interviews (n=10) were conducted with police leadership (e.g., District Commanders, Community Liaisons, Vice). Sampling was purposive, based on knowledge of the research team and opportunistic, with interviews limited to those available and willing. All key informants provided verbal informed consent and were interviewed in a quiet private location, usually their office. Seven key informant interviews were audio recorded. Extensive notes were taken during the 3 remaining interviews. Notes were written up within 48 hours of an interview and audios transcribed verbatim. Key informant interviews explored organizational attitudes among senior officers around policing sex work, attitudes towards public health-orientated approaches to policing marginalized populations, opportunities and challenges to improve relationships, and alternative policing approaches towards the FSW community in Baltimore City. All key informant quotes are anonymized except for the type of officer interviewed (e.g., District Commander, Vice).

Ethnographic data was analyzed adapting a pluralistic theory and data driven approach, that was both inductive and deductive (Meyer and Ward 2014). Initial open-coding involved reading and line-by-line analysis of typed field notes from all 4 districts and key informant interviews by the first author to categorize and conceptualize the data by hand. This led to an initial codebook that was applied by the coding team using Nvivo software to an additional number of field notes and then revised iteratively by the coding team to improve the scope of the final codes and sub-codes. Team feedback on emergent categories built an audit trail to ensure the inclusion of multiple perspectives and enhance reliability (*54*). Once coding was complete the first author moved to concept level categories, informed by the concept of police culture (Loftus 2009), including how broader ecological factors can shape police culture (Klinger 1997), as well as complementary criminological and sociological literature exploring the more explicitly spatial exercise of police discretion (Herbert 1997; Hubbard 2004).

Approval for the study was obtained from the ethics committee at Johns Hopkins Bloomberg School of Public Health and conducted in accordance with a pre-obtained memorandum of understanding entered with Johns Hopkins Bloomberg School of Public Health and the Baltimore Police Department.

4.4. Results

Of the 64 officers in our study, 86 percent identified as male and 14 percent identified as female. Approximately 63 percent of ride-along participants were white and 27 percent were black, the remaining were Asian or other. Thirteen percent of participating officers identified as Hispanic. Officers' years of experience ranged from less than one year up to 34 years, with the average being seven years. Most officers reported that they did not live within Baltimore City.

Our observations with police in Baltimore City and key informant interviews with police leadership identified important themes that: 1) influence ongoing enforcement practices known to have a detrimental impact on FSWs' health and rights; 2) impact non-enforcement that have implications for FSWs' health and safety; 3) shape police's continuing failure to protect FSW, including addressing sexual violence and 4) impede a shift towards a more public health and human rights orientated approach to policing sex work. Our results point to ecological factors at the structural, organizational, and community levels that shape individual level police practices and underpin police attitudes. Based on our findings, the discussion addresses the implications of this study for intervention and policy development to drive forward a public health and human rights centric policing of sex work.

4.4.1 Factors influencing 'police enforcement' practices towards FSW

Observations in this study highlight key ecological factors driving police enforcement approaches. Patrol officers, whilst rarely able to arrest sex workers for prostitution (due to the high evidential requirements), are under intense pressure from community associations and residents to actively police sex work, particularly where it becomes concentrated in gentrifying neighborhoods. As this observation note illustrates, both the physical and temporal geography of the area has a significant impact on policing practices:

> The officer explains that he likes to keep them [FSW] north of [street omitted]. If they go too far south of there he gets a lot of complaints. He doesn't really get any complaints if they're kept in the *"seedier areas."* The same is somewhat true for times, he explains he gets really concerned if it's 7AM and the kids are going to school with the sex workers on the street, where as 4AM is not so much of a problem. (Patrol Officer, Male, White, 26)

The majority of officers' approach in these residential spaces focuses on 'move along' tactics aimed at displacing women back to areas where communities are less likely to complain. Instead of arrest, other tools of law enforcement (e.g., contact sheets, open warrant checks, parking and watching FSW) are utilized to lessen sex work visibility. No patrol officers or command seemed to be aware of the public health and safety implications of move along tactics on FSWs' health and safety, but most agreed that displacement of FSW was not an effective solution to policing sex work. Rather it appears to be a police response to prevailing and persistent community intolerance of FSW in more gentrified communities:

> The officer explained that he received a lot of community complaints from the wealthier 'white' residents, both sex worker related and non-sex worker related, *"They might as well call you a neighborhood watch."* (Patrol Officer, Male, Black, 32)

Consistent with other literature (*55*, *56*), our findings also pointed to community association and homeowner complaints being a strong driving force behind FSW-targeted Vice 'sweeps.' Vice, unlike patrol, are responsible for conducting 'stings,' during which plainclothes officers solicit services from women to provide the necessary grounds for a prostitution arrest. However, an additional ecological factor driving these 'sweeps,' alongside community pressure, is the periodic need to respond to upticks in violent crime, such as shootings.

> *"There has been a crime initiative the last two weeks as the crime is out of control, so we put boots on the ground including Vice. The last two weeks we've just been out rounding the women up* [FSW].*"* (Vice Command)

While FSW themselves do not commit these violent crimes, they often observe crimes occurring on the street and can provide the police with valuable information. As this Vice officer explained during an observation of a sting operation:

> I took the opportunity to ask the officers whether they thought what they were doing was getting women (FSW) off the streets. The Vice officer responded as he let out a laugh: *"Ha. Not at all. They'll be walking the streets again as soon as they get out (of jail). We're out here for information basically."* (Vice Officer)

4.4.2 Factors influencing 'non-enforcement' approaches to sex work

Observations revealed that in marginalized and high-crime city locations, patrol officers do not police sex work as aggressively as they do in more residential and gentrified areas. Marginalized neighborhoods are characterized by few residential complaints and high levels of drug activity and violence. Observers' field notes consistently documented that most

police take no action to displace FSW in these areas, despite frequent sightings of sex workers actively working the strolls. Additional factors shape patrol officers' approach to enforcing or not enforcing drug laws. A neighborhood context in which illicit drug use, in particular heroin, is ubiquitous and police prioritize calls for service associated with violent crime, is coupled with variations in individual officers' outlooks. Whilst 'rookies' seem more enthusiastic about making low-level drug arrests, more seasoned officers seem more cognizant of the bureaucracy entailed in arresting vulnerable groups such as FSW, and of the limitations on their time. As this patrol officer explained:

> *"She* [FSW] *probably had a warrant if I had run it."* However, he doesn't want to find out because *"if she goes to central booking, she won't pass medical and then I have to take her to the hospital and stay until she's cleared before taking her back to booking."* He says they're already short on officers, *"We try to avoid locking up certain groups …handicapped people,"* or other people who might not pass their medical. *"Once you have a couple years on you, you know these things,"* he says. (Patrol Officer, Male, Asian, 32)

However, the mere potential to invoke drug related arrests, remakes FSW as important assets for intelligence. District commanders described FSW as *"the Google search engine of the street."* Although some FSW are paid informants, more commonly the exchange of information is informal and drives the frequency of interactions in marginalized spaces between police patrol and FSW. These exchanges are predominantly characterized as simply 'checking in' and being friendly to FSW, although as this quote illustrates there is almost always the underlying coercive threat of enforcement:

> The officer started talking about FSW as informants, *"We will buy them food all the time, or now with it getting colder, we'll get them hot chocolate or coffee. They will*

literally tell you everything." Another officer chimes in, *"The dealers and stuff don't treat them good, so they have no problem giving up information on them.*" He elaborated, *"We have a good relationship with them. We leave them alone* [i.e. don't arrest]*, and in return they give us information."* (District Operations, Male, White, 24)

It appeared that these exchanges primarily contribute to many officers' intimate knowledge of FSWs' lives and vulnerabilities (e.g. homelessness, lack of employment opportunities, hunger, need for wound care). However, we rarely witnessed officers utilize this knowledge and daily contact with FSW to offer any bridge to health or social services. Instead, observations highlighted that where help is given it is often ad hoc and predominantly reflects a complexity of moralistic, gendered and paternalistic attitudes by individual officers, with no guiding organizational norms around public health policing:

> *"Sometimes I do run into women who are genuinely selling their pussy to make ends meet – feed their kids, pay rent, etc., and when that happens I try to connect them with some services."* (Patrol Officer, Female, Black, 35)

> *"I try to help them, I really want to help them. I'll give them my cell and tell them to call*

> *me on a specific date, if they call me on that date then I know they are serious and will do what I can to get them help."* I ask the officer how many have called on the date, *"One,"* he replies. (Patrol Officer, Male, White, 37)

4.4.3 Factors hindering police protection and assistance to FSW

The majority of officers appeared to view violence towards FSW as an inescapable part of the street existence, as opposed to crimes against vulnerable women that properly deserve police attention.

The first thing the female officer brought up was how they [FSW] are routinely victimized while engaging in sex work, such as being robbed or assaulted by clients. She then stated, *"After they get messed with, they call us and report it! Can you believe that?! And we have to deal with it. Could you imagine if a drug dealer reported to us that someone beat him up while selling or took all his drugs? It's unbelievable!"* (Patrol Officer, Female, Black, 35)

Officers' attitudes towards FSW as less deserving of police assistance and protection emerged as closely linked to broader stigmatizing attitudes to FSW in this context, shaped by both their identity as sex workers and drug users. This was underscored by the frequent documentation during ride outs of dehumanizing police banter including phrases such as *"pregnant prostitute junkie"*, *"skanky"*, *"disgusting"* and descriptions of FSW drug related sores and poor physical condition. One officer referred to a FSW he knew on the strolls simply as *"abscess"*. Some of the most dehumanizing language involved the use of animal imagery, including describing FSW as junkies waking up for *"feeding."*

A small number of officers did describe FSW safety as more of a priority and provided examples of proactively addressing FSWs' needs. This emerged at the level of the individual officer and did not appear to translate into a more generalized organizational concern to address and prioritize FSW safety. Although, during key informant interviews police commanders

would give anecdotal examples of their officers assisting women by buying food, bringing them warm clothes, and taking them to local service providers.

During the time that ride-alongs were conducted, a significant institutional shift towards the broadening of collaborations between public health and public safety was instigated by the BPD. This involves officers carrying Naloxolone (narcan) for overdose victims. However, as this vignette illustrates, patrol officers' attitudes often embodied a lack of sensitivity and embedded 'canteen (discriminatory) culture'(*57*) towards FSW who inject drugs:

> She [FSW] had nodded out from heroin and was laying on the steps but was still breathing. *"Wake up, ma'am! Ma'am! Ma'am wake up!"* the officer said to her, with no response. He then shouted, *"Narcan!"* and was about to use it but she shot up to her feet instantly and began walking away. She made it about a block and a half away when she hunched over and fell asleep standing up. He again yelled, *"Narcan!"* and she woke right back up and walked away. *"Man! This Narcan stuff is great! It works so good you don't even have to use it!"* he said. Everyone shared a laugh and the female officer showed us a video entitled 'Baltimore Gold' of a women nodding out from heroin in a parking lot and a male that was with her trying to keep her awake. (Patrol Officer, Male, White, 29)

4.4.4. Identifying barriers to more public health and human rights orientated policing of FSW

In interviews with district commanders the phrase *"you can't arrest your way out of the problem,"* was frequently quoted with respect to FSW. However, in talking about the alternatives, there was recognition at an organizational level of the complexity and scope of

FSWs' vulnerabilities and the considerable gap between understanding traditional law enforcement isn't the solution, and viable public health and rights orientated policing approach.

> The Captain reflected, *"How do you stem the tide? When you get one off the street, get them in a re-entry type of program to provide services, what do you do with the next one? How many officers do you need to deal with all the women on* [stroll name omitted]*? We need long term goals.*" (Key Informant, Major)

Command also recognized the realities of day-to-day patrol policing and organizational resource constraints (e.g., shortages of officers, other policing priorities, lack of specific training) considerably hamper a proactive response. This was backed up by observations with patrol where field observers noted understaffed shifts, backed up calls for service, and a focus on the surge in violent crime. Interviews with District Command advocated for organizational level improvements to officer trainings, aimed at better equipping officers for the *"social worker aspects of policing"* (District Commander, Male, White, 45). However, most patrol officers sense of low self-efficacy around helping FSW focused on the more structurally embedded lack of external support from other agencies, coupled with a fatalistic attitude towards FSWs' prospects of finding a way out.

> *"People expect too many things from us – we're not social workers."* He says, *"I feel sorry for them, same as for young guys on the corner selling drugs. But it's not our primary duty to deal with them directly. There are other agencies getting paid* [to provide these sort of services]*, but where are they? It takes an act of God, damn near, to get them to help them* [the women] *– they are failing all of us."* (Patrol Officer, Male, White, 35)

The officer explains that in his experience there's not really much you can do - sex workers are stuck in what he calls a *"revolving door."* (Patrol Officer, Male, White, 47)

Crucially, the broader structural context of criminalization and stigmatization emerged as hampering a shift in policing at an individual officer and organizational level towards public health and human rights approaches. Despite many patrol officers' negative attitudes to FSW, many advocated that a first step would be to move away from criminalization:

"Don't tie my name to this but they just need to decriminalize it. From talking to these girls out here you see they have so many issues and they see drugs and prostitution as their only way out. If it was decriminalized, and I don't know what kind of [employment] benefits they would have or what that would look like, maybe you can figure that out, but then they could get the help they need." (District Operations, Male, White, 24)

The same sentiment was reflected by almost all senior police leadership at the time of the study. Although Vice officers did not specifically mention decriminalization, Vice command indicated that the units resources and core work had shifted to investigation of human sex trafficking.

4.5. Discussion

Our ethnography provides some of the first evidence generated from studying police that both elucidates and confirms factors shaping police practices towards FSW, largely absent from the public health and social science literature to date. The study seeks to complement and bridge

the divide in the existing literature, which on the one hand has included prominent policing ethnographies (*7, 8, 58*) investigating police practices towards other vulnerable populations, and on the other socio-epidemiological literature specifically focused on documenting police's contribution to FSWs' risk environment (*13, 16*). In seeking to identify the underlying factors that influence the policing of FSW, our findings provide a platform from which to discuss how to most effectively intervene to alleviate the negative health and human rights impacts surrounding the policing of FSW in both the U.S. and other contexts.

Social-spatial control through law enforcement tactics has been highlighted by criminologists and sociologists to aid the 'cleaning up' of urban spaces (*45, 59, 60*). In this study, "move along" tactics by patrol and 'sweeps' by Vice, were shaped by an ecological context in which more affluent neighborhoods are dominated by communities' moral concerns (e.g., children seeing sexual activity on the way to school, discarded condoms on porches). Interestingly, many patrol officers expressed frustration toward community complaints, which they viewed as born of social anxieties rather than actual crimes, and disproportionately drawing on already overextended patrol resources. These findings confirm existing literature (*38, 56*) that point to the importance of gentrification and community level stigma in driving an ultimately ineffective police response to sex work that compromises FSWs' safety. An interesting additional contextual factor shaping displacement of FSW by the police, are the periodic upticks in violent crime that characterize cities such as Baltimore. Spikes in violent crime prompt crackdowns by Vice; these sweeps are not intended to address sex work, but utilize the threat of arrest to coerce FSW into providing criminal intelligence. These tactics displace FSW from their usual strolls as they attempt to avoid such crackdowns, and highlight the coercive nature of police relations with FSW that can contribute to a climate of vulnerability in which FSW rarely view police as interested in their rights as individuals or collective wellbeing.

Public health research additionally highlights the direct and indirect impact these different spatial displacement tactics can have on FSWs' safety and HIV risk factors (e.g., client violence, condom use, current STIs)(*13*).

Our results indicate that neither patrol nor command view legal enforcement tactics as effectively addressing sex work. Instead officers are engaged in reproducing socially dominant ideas from local communities about what is criminal conduct, regardless of actual evidentiary standards for those crimes and despite its potential to undermine FSW safety. Interventions need to focus on educating police departments and the communities they serve about the public health implications of these policing tactics. Through public safety and health partnerships and officer training, police departments could work in these communities to highlight the ineffectiveness of existing policing approaches and question communities' categorization of FSW as a public nuisance, rather than a public health issue. Such steps could do much to alleviate the presently damaging spatial control of FSW in this study context, and others. Additionally, in the Baltimore context thought needs to be given to incentivizing police officers to live within the city (at present the majority do not) as a way of gaining community consent and legitimacy. It is potentially harder to address organizational police policies that utilize prostitution enforcement as a tool for gathering criminal intelligence, where there is such obvious police capital. Instead this example of police misuse of power serves to support and emphasize the importance of decriminalization in dismantling the legal apparatus under which police discretion is used to exploit sex workers in ways that not only undermine their health and human rights, but limit any trust that could be fostered between this population and the police.

In line with other policing studies, enforcement practices in 'marginalized spaces' such as open-air drug markets contrasted enforcement in 'prime spaces' such as more affluent residential neighborhoods discussed above. As Stuart (2014) explains, 'police discretion is, first and foremost, contingent upon how officers conceive the neighborhoods they patrol' (*61*). Within the milieu of the open-air drug trade, FSW were not prioritized as targets of sex work-related patrol enforcement at all, instead it was their identity as injection drug users that shaped patrol interactions. Observations revealed considerable variation in drug enforcement based on patrol officers' discretion. Less experienced patrol officers were characterized as being more willing to conduct drug arrests, while more experienced officers recognized the bureaucracy entailed in low level arrests and the lack of real police capital. In contrast, all officers utilized the underlying threat of drug arrests to extract information on violent crime. Many police officers tended to achieve this by building relationships with FSW, developing considerable knowledge of women's vulnerabilities along the way. Interventions that seek to shift police's role towards helping women (e.g., on the spot referrals for HIV testing and counselling), could consider how such frequent day-to-day interactions with FSW and knowledge can be utilized to bolster FSW right to access social and health related services. This would require a shift away from what Blankenship et al. characterized as the '*diffusion of criminalization*' (*62*), whereby FSW and people who use drugs have their identities defined and limited to that of a criminal, as opposed to women working in a risky environment. Although during observations police interactions with FSW often appeared friendly and good-natured, they are underscored by unequal power dynamics and continuously shaped by the broader structural forces of criminalization of sex work and illicit drug use.

Consistent with findings in other settings (*63, 64*) police confirmed high levels of violence experienced by FSW, which has been linked in the public health and human rights literature to

FSWs' risk of HIV acquisition. In addition, studies - most recently in the U.S. - have found that FSW who have experienced abusive police practices are more likely to experience client violence (*50*). Officers acceptance of FSWs' violence as inevitable was reinforced by the violent context in which FSWs' lives are situated, and appeared to act as a normalizing factor underscoring officer attitudes. In addition, it is likely that officer's tendency to rank FSWs' experience of sexual violence as a low policing priority compared to other violent crime is also rooted in larger gendered patterning of police culture, including victim blaming and patriarchal attitudes towards women (*65, 66*). Consistent with broader criminology literature(*67*) female officers observed in this study appeared to project a hegemonic masculine police culture. This was reflected in the way most female officers, as well as male, dismissed FSW as deserving victims in cases of client rape and the gendered language they used to describe women during ride outs. Additional research is needed amongst FSW populations to unpack the complexity and layering of the relationship of female officers to FSW as victims of crime. This should include understanding the silencing of some forms of violence against FSW based not only on gender but on race, social class and other stigmatized identities such as sex work and illicit drug use(*66*).

Only a small number of officers' patrol interactions with FSW reflected a more guardian (i.e., protective policing) style. Furthermore, observations in this setting revealed little evidence of police proactively helping women (e.g., with social service, drug program referrals), coupled with evidence of deeply embedded stigmatizing attitudes. Studies have highlighted the dehumanization of vulnerable populations by the police, often connected to the spaces they occupy (*7, 8, 40*). In this study, both male and female officers' language (e.g., 'pregnant prostitute junky') reflected intersecting stigmatizing normative attitudes toward FSWs' sex work and injection drug use as spoiled identities and manifested in police officers attitudes of

FSW as undeserving victims. There was an extraordinary tension between many officers' intimate knowledge of FSW lives and moments of empathy, and their frequent dialogue of 'othering'. Legal literature has highlighted the role of legal controls in reinforcing negative stereotypes and perpetuating social exclusion and vulnerability (*68*). Similarly, Blankenship et al. in their qualitative study exploring injection drug using FSW experiences with police in Colorado, USA found that women's "…identity is reduced by both law enforcement and the public health system to a single act that is illegal…That many individuals have families is forgotten." (*62*). Here observations suggested that the relentless exhaustion and sense of futility embodied in police attitudes and practices are amplified by a structural environment of poverty, criminalization of sex work and substance use that reinforces officers' stigmatizing attitudes.

Collectively our findings highlight the need for more far reaching structural changes to address the broader environmental context in which the policing of sex work operates. In particular, patrol officers cited the need to remove criminalization of sex work and ensure there is adequate and integrated external support from health and social services as key to better human rights orientated public health and safety partnering. Police command also pointed to the very real organizational limitations to prioritizing public health partnering around vulnerable populations, such as sex workers. Limitations include a lack of dedicated financial resources and considerable constraints on police time, with drastically understaffed shifts being the norm. It is these bigger shifts in the structural landscape that will ultimately pave the way to a new era of public health informed policing towards sex work, and could ensure similar systemic changes to those that occurred around the policing of mental health (*69*). Additionally, further unpacking and addressing the complexity of intersecting stigmatizing assumptions of police officers towards women in this setting is critical. Police sensitivity trainings conducted in other settings (*17*), including peer education of officers in collaboration with sex worker

organizations (*30*) could be explored in this context. In particular, such collaborations need to address the complex overlap between stigmatization of sex work, illicit drug use, poverty and the situational 'othering' of FSW, for whom normal social entitlements do not apply (*70*). Trainings however are insufficient without an organizational shift towards prioritizing FSWs' human rights and health, in particular, introducing policies and systems of accountability that require police to respond equitably to FSWs' experiences of violent crime. Another important dimension of officers' embedded stigmatization towards FSW surrounds their injection drug use. In line with ongoing political and policy shifts at a national and state level to introduce pre-booking diversion for low level offences in the U.S., Baltimore City has recently joined the 'LEAD' program(*37*). LEAD introduces diversion to drug and social services at the point of arrest, albeit currently targeted specifically at drug using populations, rather than FSW specifically. Despite this, it presents an opportunity to better institutionalize harm reduction and public health thinking into policing practices around vulnerable populations drug use. It also has the potential to ensure a more uniform approach to police officers current highly discretionary interactions with low level drug users, including FSW.

The study was characterized by several limitations. In setting out to conduct this ethnography with the Baltimore Police Department, the scrutiny around police practices may have led police to be less frank in their opinions. The purposive and opportunistic nature of our observational sampling meant that there may have been the opportunity for districts to pick 'by the book' officers for field observers to ride-along with, meaning we missed the perspectives of more frank officers. The nature of observations also meant that there were no expectations around witnessing the most egregious police behaviors towards FSW during ride-alongs, despite these having been documented in work with FSW in this setting. Despite these limitations, the study was able to establish an open and frank dialogue with the police department around the aims

of the study through initial key informant interviews, allowing us to capture an honest portrayal of policing approaches and priorities towards FSW. Although the presence of observers in the field can influence officers' actions, field notes revealed the extent to which officers let down their guard and shared frank opinions during observations. In turn it is acknowledged that the ethnographers involved in this study carry with them their own sources of bias, particularly working with stigmatized populations like sex worker populations. Diversity in background and experience (including gender, time in the city, previous work with the police) was intended to help mitigate the effect. A further limitation of the data relates to the lack of focus on race as a socio-structural category that may have had a bearing on our understanding police-sex worker interactions. FSW that were observed and encountered during ride-alongs tended to be white. It is beyond the scope of this paper to unpack the reasons for encountering a predominantly white street-based FSW population in the context of a city where economically deprived neighborhoods are disproportionately black. The predominance of white FSW could be tied to the relationship between street-based sex work and the drug economy, or a preference among other FSW populations to utilize indoor venues.

4.6. Conclusions

In conclusion, much can already be garnered from current public health and human rights literature on the types of police practices that compromise FSWs' health and safety, particularly as it relates to HIV and violence. Still, a more in-depth understanding from the policing side of the circumstances that drive law enforcement approaches to street-based sex work has been lacking. Such an understanding is critical to the collaborative design of interventions with police in different settings. In considering public health-police partnerships to address the needs of FSW populations in the U.S. and elsewhere, this study supports existing calls for

decriminalization of sex work, supported by institutional and policy reforms (e.g., around coercive police practices, FSW street safety), neighborhood-level dialogues that shift the cultural landscape around sex work within both the police and larger community and innovative individual-level police trainings (e.g., to address sex work and illicit drug related stigma). Points of leverage include the general acceptance of officers around the need for change and a frustration with ineffective policing strategies towards sex work. A shift in police culture that questions communities' moral sensibilities around sex work and categorization of FSW as a public nuisance, rather than a vulnerable group in need of health and social support could help alleviate the damaging spatial control of FSW that have been shown to promote HIV risk behaviors (e.g., rushing negotiations, screening clients, and condom use). Many officers of all ranks favored some form of legalization or decriminalization, which is a view is heavily supported by the public health literature that shows both the enormous negative health implications of criminalization for sex workers and the impact that decriminalization could have on the course of the HIV epidemic among sex worker populations (*13*, *16*). This study highlights police support for this type of legal change in the State of Maryland, and suggests common ground on which police and sex worker activist could unify to instigate change. The unpredictability and discretion of policing practices towards FSW has the potential to significantly erode trust, finding ways to introduce some uniformity into FSWs' interactions with police is key. One achievable policy reform that could promote trust and instigate a shift at the institutional level in the cultural landscape of policing sex work would be the introduction of a female sex worker liaison officer to facilitate follow up around FSW experiences of violence. However, police training for such a female police officer leadership role is crucial and would need to be rooted in an inclusive feminist perspective that moves away from the victim blaming of FSW.

Additionally, for such reforms to be effective, the study also highlights the importance of fostering extensive structural support for FSW and service referral options in collaboration with criminal justice reforms. Shifting police culture away from viewing the vulnerability of FSW as a resource to be exploited and towards viewing it as a harm to be reduced would require a seismic shift away from the current crime control climate, which is tightly bound to the city's ongoing epidemic of violence and to the broader socio economic problems of Baltimore city. Finally, FSW must themselves be empowered in their legal and social rights, thereby holding police and civil society accountable for promoting health and equity amongst this population.

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CHAPTER 5: POLICE-RELATED CORRELATES OF CLIENT-PERPETRATED VIOLENCE AMONG FEMALE SEX WORKERS IN BALTIMORE CITY, MARYLAND

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5.1. Abstract

To characterize interactions that female sex workers (FSW) have with the police and explore associations with client violence. Baseline data collected between 04/2016-01/2017 from 250 FSW from the Baltimore-based SAPPHIRE study. Questionnaires captured different patrol/enforcement and abusive police encounters, experiences of client violence and other risk factors, including drug use. 78% of participants reported lifetime abusive police encounters, 41% reported daily/weekly encounters of any type. 22% of participants experienced client violence in the prior three months. Heroin users (70% of participants) reported more abusive encounters (2.5 vs 1.6, p-value <0.001) and more client violence (26% vs 12%, p-value 0.02) than others. In multivariable analysis, each additional type of abusive interaction was associated with 1.3 times (95%CI: 1.1-1.5) increased odds of client violence. For patrol/enforcement encounters this value was 1.3 (95%CI: 1.0-1.7). Frequent exposures to abusive police practices contribute to an environment that promotes client violence. For FSW who inject drugs, both police exposure and client violence appear amplified. Structural interventions that address police-FSW interactions will help alleviate police's negative impact on FSWs' work environment.

5.2. Introduction

Globally, female sex workers (FSW) lifetime prevalence of experiencing violence in the workplace is 45-75%.(*1*) Street-based sex workers particularly experience high levels of violence, including physical, verbal and sexual abuse, robbery, kidnap and murder.(*2–5*) In addition to the immediate impact, violence against women has substantial longer-term health-related implications, including substance use, depression, post-traumatic stress, suicide, mortality and the acquisition of sexually transmitted infections, like HIV.(*6*)

International calls to make violence against sex workers a human rights and public health priority are well established.(*7*) A growing body of data linking violence against FSW with bio-assessed HIV/STI outcomes highlights the importance of violence to health outcomes.(*8, 9*) However, the drivers of violence against this vulnerable population are insufficiently understood. In particular, compared to individual and interpersonal determinants of violence, the role of structural level factors remains poorly articulated.(*10*) Given the high rates of violence, the criminal justice system and the police should have a custodial role in FSWs' protection, whether or not sex work is legal. However, a social environment of gendered norms and unequal power relations leave FSW vulnerable to abuse from police and other perpetrators.(*11*) In particular, evidence suggests that FSWs' HIV risk environment (*12*) can be exacerbated by a range of police practices, including enforcement (e.g., arrest, crackdowns)(*13, 14*) and extrajudicial practices (e.g., syringe confiscation, sexual coercion).(*8, 15*)

In settings where sex work is criminalized, evidence suggests a punitive and stigmatizing environment can normalize violence and deter FSW from reporting or seeking redress.(*2, 15– 18*) Existing evidence of the key role police play in FSWs' experience of violence is largely derived from qualitative studies. A recent systematic review of the correlates of violence against sex workers found only four studies (Canada, India and the UK) that quantitatively explored the role of the police, often as a secondary focus.(*1*) Nevertheless, these studies found that police behaviors (including, arrest, police violence and coercion), were independently associated with experiencing violence.(*10, 13, 19, 20*) Other studies point to the harmful impact of omnipresent and abusive policing practices on FSWs' risk avoidance (e.g., screening clients, choosing policed strolls)(*3, 21*) which may increase their likelihood of experiencing violence,

including that perpetrated by clients. Despite these findings, the potential additive effect of police exposures on aspects of FSWs' risk environment, including experiences of client violence remains underexplored. This is particularly true within the US, where no existing studies have systematically quantified FSW interactions with the police despite recent increases in scrutiny following highly-publicized human rights offences committed by police against vulnerable populations, including street-based sex workers.(*22*, *23*)

This study uses cross-sectional data from a cohort of street-based FSW in Baltimore City, Maryland, USA to describe the type and frequency of a wide range of FSW police related experiences and their association with client violence, adjusting for other key drivers of violence such as drug-use.

5.3. Methods

The data from this study comes from the Sex workers And Police Promoting Health In Risky Environments (SAPPHIRE) study, a prospective FSW cohort, recruited between 04/2016 and 01/2017.

5.3.1. Ethics statement

The study was approved by the Johns Hopkins Bloomberg School of Public Health Institutional Review Board.

5.3.2. Recruitment and data collection

Targeted sampling was used in fifteen zones across Baltimore city, identified as where street-based FSW worked.(*24*) In each zone, study staff approached potential participants and briefly described the study. Interested persons were invited to a study van, parked nearby, and screened. Eligibility criteria were: (1) age ≥ 15 years; (2) sold or traded oral, vaginal or anal sex "for money or things like food, drugs or favors"; (3) picked up clients on the street or at public places ≥ 3 times in the past 3 months; (4) willing to undergo HIV and STI testing. Exclusion criterion was: identifying as male or a man. Eligible participants who provided informed consent participated in a interviewer-administered computer assisted personal interview (CAPI) survey.

Trained staff performed oral HIV tests (OraQuick© Advanced Rapid HIV-1/2 test kit). Self-administered vaginal swabs were collected and sent for gonorrhea, chlamydia, and trichomoniasis testing. Participants received on the spot counseling for positive HIV tests and referred to a provider of their choice. Results were forwarded to the Baltimore City Health Department for patient follow-up to ensure they were engaged in care. Participants were notified of their STI results by Disease Intervention Specialists with the Baltimore City Health Department or during follow-up interviews and provided with resources on where to seek treatment. Referrals to a range of local health and social service organizations (e.g., case management, counseling, drug treatment programs) were offered to all participants. Participants were compensated with a pre-paid $70 VISA gift card for completing the baseline visit.

5.3.3. Measures

Sociodemographic and risk factor measures. We collected information on age, gender, ethnicity, types and frequency of drug use, time in sex work, and the frequency of sex work. Survey items were drawn from existing validated scales, the literature and previous studies.(*25*)

Client violence measures. Clients were defined as "people you've had oral, vaginal or anal sex with for money, food, drugs or favors". We measured client violence (sexual and physical) using an adapted version of the Revised Conflict Tactic Scale,(*26*) and asked whether they had been hit, punched, slapped or otherwise physically hurt or threatened by a client or been forcibly pressured to have vaginal or anal sex when they didn't want to. Individuals were coded '1' if they had experienced client violence in the prior three months and '0' otherwise.

Police interaction measures. A list of different police interactions were developed from a systematic review of previous studies,(*27*) and refined by a police ethnography conducted in Baltimore City, and input from a Community Advisory Board (comprised of current and former sexworkers). Police interactions were divided into two groups: patrol/enforcement practices and abusive practices. There were seven patrol/enforcement practices: asking the women to move along; performing a routine stop; offering assistance (being helped without expecting anything in return or being referred to health/social services e.g. drug/alcohol treatment, violence shelter); conducting a search of person or property; confiscating drugs/drug paraphernalia; confiscating condoms; and arrest. The survey was unable to capture whether the circumstances made individual interactions legal or extrajudicial (e.g., confiscating needles obtained from a needle exchange program would be against policy directives in the State of Maryland). Abusive practices consisted of seven egregious acts, outside the scope of enforcement practices: verbal or emotional harassment; sexual harassment or assault; damage

of property; physical violence; pressuring the woman into having sex in exchange for no arrest; acceptance of money or other goods in exchange for no arrest; and having police becoming clients. Each of the questions was answered with a 'yes' if the women had ever experienced that practice and 'no' otherwise. The only exception was police as clients, where only the prior three months was considered. We also created two aggregate measures: aggregate patrol/enforcement exposure (calculated as the total number of different patrol/enforcement practices ever experienced) and aggregate abusive exposure (total number of different abusive interactions ever experienced).

5.3.4. Statistical Analysis

Bivariate analyses. We explored the associations of different demographic characteristics, working conditions, drug use and sexual risk behaviors covariates on the odds of having experienced any client violence in the past 3-months using Pearson's chi-square tests. For these measures and for the different police encounters, we also used bivariate logistic regression model to evaluate the associations with recent client violence, adjusting for intra-zone correlations for women recruited from the same zone.

Multivariable analysis. Variables from a set of *a priori* selected variables based on theory and areas of interest that were marginally significant in the bivariate logistic regressions ($P < 0.20$) were included in a multivariable logistic model with generalized estimating equations (GEE) with an exchangeable correlation structure and robust variance to adjust for zone clustering. As we were interested in the overall association of patrol/enforcement and abusive police practices with client-perpetrated violence, we considered the aggregate rather than the individual police measures. This approach assumes that each of the exposures included within

the aggregate measures are of equal weight. We also assumed that a linear relationship between the number of interactions and the log-odds of violence, supported by observing an approximate linear effect when considering this factor as a discrete rather than continuous covariate. Multicollinearity was assessed by uncentered Variance Inflation Factors.

Analyses were conducted in Stata/SE 14.2 (College Station, Texas).

5.4. Results

We recruited 250 FSW from around Baltimore with a mean age of 36 (range 18-61) (Table 5.1). Most FSW had been arrested in their lifetime (82%), about half had entered street-based sex work within the past 5 years (48%), and 55% had ≥30 clients in the past three months. Drug use was common; 70% used heroin daily, 62% used crack cocaine daily and 12% used opioid/benzodiazepine daily. Some women were also involved in the drug trade (23%). Most (79%) of FSW who sold, touted or steered drugs in the past 3 months also used heroin or crack/powder cocaine daily. Daily heroin users were more likely to engage in daily sex work (74% vs 47%, p-value <0.001) than other participants. HIV prevalence was 5%, and 54% were infected with at least one STI (Chlamydia 10.5%, Gonorrhea 12.6%, Trichomoniasis 48.8%).

Table 5.1.: Descriptive Characteristics of a Sample of Street-based Female Sex Workers, Baltimore City, Maryland, USA (N=250)

	Overall	Client violence in past 3 months		
		Yes	No	p value
	N (%)	N (%)	N (%)	
Total, N	250 (100.0)	55 (22.0)	195 (78.0)	
Demographic characteristics				
Age				
18-29	66 (26.4)	17 (30.9)	49 (25.1)	
30-39	109 (43.6)	28 (50.9)	81 (41.5)	
40 years or older	75 (30.0)	10 (18.2)	65 (33.3)	0.096

Race/ethnicity				
Non-Hispanic White	166 (66.4)	45 (81.8)	121 (62.1)	
Non-Hispanic Black	57 (22.8)	2 (3.6)	55 (28.2)	
Hispanic or Other	27 (10.8)	8 (14.5)	19 (9.7)	**0.001**
Highest level of education attained				
Did not complete high school	131 (52.4)	27 (49.1)	92 (47.2)	
High school or greater	119 (47.6)	28 (50.9)	103 (52.8)	0.802
Working Conditions				
Length time in street based sex work				
1 year or less	44 (17.6)	7 (12.7)	37 (19.0)	
>1 -5 years	77 (30.8)	20 (36.4)	57 (29.2)	
> 5years	129 (51.6)	28 (50.9)	101 (51.8)	0.435
Frequency of street-based sex work				
Daily	85 (34.0)	12 (21.8)	73 (37.4)	
Weekly or monthly	165 (66.0)	43 (78.2)	122 (62.6)	**0.031**
Number of clients*				
1-29	111 (44.8)	21 (38.2)	90 (46.2)	
≥30	137 (55.2)	34 (61.8)	103 (52.8)	0.266
Drug use and involvement in the drug trade*				
Daily heroin use	175 (70.0)	46 (83.6)	129 (66.2)	**0.012**
Daily crack cocaine use	155 (62.0)	35 (63.6)	120 (61.5)	0.777
Daily opioid or benzodiazepine pill use**	29 (11.6)	3 (5.5)	26 (13.3)	0.107
Sold, touted or steered drugs	58 (23.2)	12 (21.8)	46 (23.6)	0.783
Sexual Risk				
HIV infection	13 (5.2)	--	--	--
STI infection***	136 (54.4)	35 (63.6)	101 (51.8)	0.119

*Past 3 months
**Not as prescribed by a doctor or nurse
***Gonorrhea, chlamydia or trichomoniasis infection

5.4.1. Frequency of police interactions

We found that all of the women had previous interactions with the police. The participants had, on average, experienced 6.2 different types of police interaction in their lifetime (out of the 14 that were considered), made up of an average of 4.1 patrol/enforcement activities and 2.1 abusive encounters (Table 5.2). The most common patrol/enforcement experiences included being arrested and routine stops. Of the abusive encounters, the most common were verbal/emotional harassment and sexual harassment/assault. One in ten women had daily police encounters, 41% had at least one encounter on at least a weekly basis and 23% at least two

encounters over this timeframe (Table 5.3). Excluding arrest, 92% had experienced at least one patrol/enforcement activity and 78% had experienced at least one abusive encounter. Patrol/enforcement encounters occurred more frequently than abusive ones, with 37% of women experiencing patrol/enforcement activities on at least a weekly basis compared to 12% for abusive activities.

Drug use appeared key to the frequency and type of police encounters. FSW who reported daily heroin use had a wider range of police encounters than FSW who did not. Daily heroin users experienced an average of 4.3 different lifetime patrol/enforcement activities compared to 3.6 patrol/enforcement activities for other participants (p-value for difference 0.009) and 2.5 abusive encounters compared to 1.6 among other participants (p-value <0.001). Forty-two percent of daily heroin users reported that at least one patrol/enforcement activity occurred weekly and 14% reported that at least one abusive encounter occurred over the same time frame compared to 25% and 5%, respectively among other participants.

5.4.2. Associations with client violence

Fifty-five (22%) women had experienced physical or sexual client violence in the past 3 months: 19% of women had experienced physical violence; 16% sexual violence; and 12% both.

Table 5.2.: Police Encounters and Recent Client Violence of FSW, Baltimore City, Maryland, USA (N=250)

	Total	Client violence in past 3 months		
		Yes, n (%)	*No, n (%)*	*p value*
Patrol/enforcement activities, ever				
Police arrested respondent	206 (82.4)	51 (92.7)	155 (79.5)	**0.023**
Police asked respondent to move along	202 (80.8)	51 (92.7)	151 (77.4)	**0.016**
Police conducted a routine stop (e.g., ID, warrant check)	215 (86.8)	54 (98.2)	162 (83.1)	**0.021**
Police conducted a search of person or property	159 (63.6)	41 (74.5)	118 (60.5)	0.059

Police confiscated drugs or drug paraphernalia	150 (60.0)	38 (69.1)	112 (57.4)	0.131
Police confiscated condoms	13 (5.2)	5 (9.1)	8 (4.1)	0.142
Police offered assistance (e.g., referral, ride to services)	75 (30.0)	20 (26.7)	35 (20.0)	0.245
Mean number of patrol practices experienced (SD)	4.1 (1.7)	4.7 (1.3)	3.9 (1.8)	**<0.001**
Abusive practices, ever				
Police verbally or emotionally harassed respondent	174 (69.6)	44 (80.0)	130 (66.7)	0.061
Police sexually harassed or assaulted respondent	120 (48.0)	36 (65.5)	84 (43.1)	**0.004**
Police damaged respondent's property	77 (30.8)	28 (50.9)	49 (25.1)	**<0.001**
Police physical violence (threatened or enacted)	64 (25.6)	20 (36.4)	44 (22.6)	**0.04**
Police pressured respondent to have sex in exchange for no arrest	58 (23.2)	24 (43.6)	34 (17.4)	**<0.001**
Police accepted money/other goods to avoid trouble	16 (6.4)	4 (7.3)	12 (6.2)	0.772
Had police as clients (past 3 months)	41 (16.7)	16 (29.1)	25 (12.8)	**0.004**
Mean number of abusive practices experienced (SD)	2.1 (1.8)	3.1 (2.0)	1.9 (1.6)	**<0.001**
Total practices, ever				
Mean number of different practices experienced (SD)	6.2 (3.0)	7.9 (2.6)	5.9 (2.9)	**<0.01**

Experiencing client violence was significantly associated with: being non-Hispanic white, engaging in daily sex work, daily use of heroin, as well as 10 of the 14 different police measures considered (Tables 5.1 and 5.2). Client violence was particularly high among drug users with FSW who reported daily heroin use reporting 2.2 times as much client violence than those who did not (26% vs 12%, p-value 0.02).

In bivariate analysis (Table 5.4), we found that the odds of recently experiencing client violence were higher for FSW who conducted daily sex work (odds ratio [OR] 2.10, 95% confidence interval [CI]: 1.34-3.29) and used heroin daily (OR 2.58, 95% CI: 1.37-4.84). Of the patrol/enforcement practices, arrest, routine stops, being searched, drug/paraphernalia confiscations, and providing assistance were significantly associated with client violence. Abusive practices were also linked to client violence, including verbal/emotional harassment, sexual harassment/assault by the police, police damaging their property and police being recent clients.

In our adjusted model, for each additional type of patrol/enforcement practice experienced, FSW had 1.3 times the odds of experiencing client violence (95% CI: 1.0-1.6). In addition, each additional type of abusive practice experienced was associated with a 1.3 times increase in the odds of experiencing client violence (95% CI: 1.1-1.5). The association of daily heroin use with client violence attenuated to non-significance in the adjusted model (p=0.50).

Table 5.3. Frequency of different police interactions among respondents.

	Daily	Weekly	Monthly	1-3 months	>3 months	Never
Patrol/enforcement activities (excluding arrest)						
Respondent asked to move along	7.2	22.9	8.4	28.9	13.3	19.3
Routine stop	4.0	18.1	11.6	33.3	19.7	13.3
Search of person/property	1.2	6.8	5.6	26.0	24.0	36.4
Condom confiscation	0.0	0.4	0.4	2.8	1.6	94.8
Drug confiscation	0.4	3.2	1.2	20.9	34.5	39.8
Police offered assistance	0.4	2.4	1.2	16.4	9.6	70.0
At least 1 patrol/enforcement practice	8.8	28.4	12.8	31.6	10.4	8.0
At least 2 patrol/enforcement practice	3.2	16.0	8.8	36.4	24.0	11.6
Abusive activity (excluding police as client)						
Police verbally or emotionally harassed respondent	0.4	6.5	7.7	16.1	38.7	30.6
Police sexually harassed or assaulted respondent	2.0	4.8	1.2	9.6	30.5	51.8
Police damaged respondent's property	0.0	0.8	0.4	4.0	25.6	69.2
Police physical violence (threatened or enacted)	0.0	0.0	0.0	1.6	23.7	74.7
Police pressured respondent to have sex	0.0	0.0	0.4	2.4	20.4	76.8
Police accepted money/other goods to avoid trouble	0.0	0.0	0.8	0.4	5.2	93.6
At least 1 abusive activity	2.4	9.2	6.8	19.6	40.0	22.0
At least 2 abusive activity	0.0	2.8	2.4	8.8	40.8	45.2
Overall						
At least 1 activity (patrol or abusive)	10.0	30.8	14.4	28.0	10.0	6.8

At least 2 activities (patrol or abusive)	4.4	18.8	11.2	37.6	18.8	9.2

Descriptive characteristics	Simple		Adjusted	
	OR (95% CI)	p	Adjusted OR	P
Age (per year increase)	0.96 (0.92, 0.99)	**0.013**	0.96 (0.92, 1.00)	0.068
Black, Hispanic or other (vs. White)	0.35 (0.13, 0.92)	**0.034**	0.44 (0.19, 1.01)	0.053
Daily sex work	2.10 (1.34, 3.29)	**0.001**	1.99 (0.94, 4.20)	0.072
Daily heroin use	2.58 (1.37, 4.84)	**0.003**	1.26 (0.65, 2.44)	0.495
Patrol/enforcement practices, ever				
Police arrested respondent	3.29 (1.06, 10.21)	**0.039**		
Police asked respondent to move along	3.67 (1.35, 9.97)	**0.011**		
Police conducted a routine stop of respondent (e.g., ID, warrant check)	9.93 (1.88, 52.47)	**0.007**		
Police conducted a search of person or property of respondent	1.91 (1.01-3.61)	**0.048**		
Police confiscated drugs or drug paraphernalia of respondent	1.62 (0.90, 2.93)	0.111		
Police confiscated condoms	2.20 (0.37, 13.13)	0.388		
Police offered assistance to respondent (e.g., referral, ride to services)	1.45 (0.86, 2.43)	0.161		
Number of patrol/enforcement practices	1.42 (1.18, 1.70)	**<0.001**	1.27 (0.96, 1.69)	0.089
Abusive practices, ever				
Police verbally or emotionally harassed respondent	1.95 (1.32, 2.88)	**0.001**		
Police sexually harassed or assaulted respondent	2.48 (1.54, 3.99)	**<0.001**		
Police damaged respondent's property	3.06 (2.52, 3.71)	**<0.001**		
Police physical violence (threatened or enacted)	2.01 (1.03, 3.94)	**0.042**		
Police pressured respondent to have sex in exchange for no arrest	3.62 (1.69, 7.77)	**0.001**		
Police accepted money/other goods to avoid trouble	1.16 (0.41, 3.24)	0.782		

Had police as clients	2.74 (1.53, 4.90)	**0.001**		
Number of abusive practices	1.46 (1.22, 1.75)	**<0.001**	1.29 (1.09, 1.54)	**0.005**

Table 5.4.: Association of police practices and client violence among female sex workers in Baltimore City, Maryland, USA (N=246) using bivariate (left) and multivariate (right) logistic regression with GEE and robust variance, adjusted for zone clustering.

5.5. Discussion

It is known that criminalization, alongside social marginalization, place FSW in vulnerable positions, including putting them at risk for work-related client perpetrated violence. However, the role of the police had previously been poorly understood. In particular, it has been unclear the extent to which FSW encounter the police and whether these encounters are associated with changes in their risk environment. In order to fill this knowledge gap, this study characterized FSW encounters with the police and explored the contribution that both day-to-day and abusive police practices may have on a risk environment that promotes client perpetrated violence.

The complex social and structural risk environment in which FSW operate means that it is unlikely that specific police behaviors directly result in experiences of client violence. Instead, a build-up of frequent negative interactions accumulated over months and years may promote mistrust or fear of the police. This has previously been linked to different types of riskiness, including rushing of client negotiations and moving to unfamiliar/unsafe areas.(*11*, *28*, *29*) It is proposed that these and other types of risk have an additive impact on FSWs' likelihood of exposure to the situational vulnerability that promotes the experience of client violence. This hypothesis is supported by qualitative studies that have highlighted police's role in promoting sex work and drug using populations experience of structural violence, manifested in a complex

interplay of unequal power relations, that reinforce a cycle of individual and interpersonal risk taking (*30*).

We found that our entire cohort population had at least one type of interaction with the police in their lifetime and that ten out of the fourteen different police measures, across both routine and abusive practices, were significantly associated with client violence in bivariate analyses. We found evidence that police interactions had a profoundly negative association with each additional type of abusive interaction being associated with client violence in adjusted analysis. While marginally non-significant, the association of the patrol-enforcement activities in adjusted analysis with client violence were of the same magnitude as the abusive interactions. These findings suggest that even non-abusive encounters, which occur on a much more frequent basis than abusive ones, also contribute to a risk environment that can facilitate client-perpetrated violence.

Seventy per cent of women in this population used heroin daily. Previous work has identified drug use as strongly linked to client violence.(*1*, *31*) We also found a strong association between the two, with daily heroin users having more than two times the odds of experiencing client violence compared to those that did not use heroin daily. FSW who used heroin daily also had more encounters with the police (abusive and non-abusive) and were more likely to engage in sex work on a daily basis compared to other participants, likely linked to increased financial need for their drug dependency. These findings point to a complex layering of risk where those with the highest dependence on drugs have increased exposure to the police due their dual criminalized status and physical location in highly policed open air drug markets. In addition higher frequency of engagement in sex work potentiates encounters with violent clients. In multivariable regression, when adjusting for police interactions, we found that heroin

use was no longer significantly associated with client violence. This provides some evidence that police encounters may mediate at least some of the complex relationship between drug use and client violence. Findings from this study suggest that research with FSW-IDUs should take into consideration the dynamics and the intertwined nature of drug use and police interactions on experiences of client violence.

Although this study identified policing measures as important correlates of client violence among street-based FSW, account must be taken of the complexity of women's underlying vulnerability. These include more proximal and upstream risk factors including, choice of work environment (e.g., indoor vs outdoor), financial need, and gendered power dynamics that may contribute to FSW overall risk.(*1*) For instance, we found evidence that in this population, black FSW experienced less violence than their white counterparts. Mechanisms that could explain this observation are unclear; however, different confounding factors by ethnicity may be relevant (e.g., predominant work environment [i.e. indoor or outdoor], immediacy of financial need [i.e. drug driven - 60% of black FSW in this population used heroin daily compared to 75% white FSW]). Further research is needed to disentangle the factors that may explain these differences. We also found that positive police interactions, such as providing assistance, were also associated with increases in risk of client violence. This finding should be considered in the context where such interactions are still typically coercive in nature (i.e., instigated to promote FSW compliance with the provision of information).

While this study adds to the knowledge base on the relationship between policing and client-perpetrated abuse among FSW, a number of limitations must be noted. We used aggregate measures to capture the overall level of abusive and patrol/enforcement activities experienced by the women, which requires a relatively strong assumptions that each of the individual

measures are of equal weight. Further work is needed to develop robust police exposure measurement tools that can help identify the relative importance of individual measures for specific outcomes. While this represents one of the largest FSW cohorts in the US, the sample size may have been insufficient to identify some risk factors and as with all studies of this nature, there remains the real possibility of unmeasured confounding from factors we did not capture. In addition, we cannot ascertain the degree to which our targeted sampling strategy was able to generate a representative sample of FSW. Results should also be viewed in light of the fact that despite 63% of the population of Baltimore being black,(*32*) this cis-female cohort was overwhelmingly white. Reasons for this may include that black FSW engage in sex work away from the street, including indoor venues such as exotic dance clubs and private homes.(*33*) Owing to the self-reported nature of the data there is the possibility of response or social desirability bias on the part of participants with respect to violence and police measures. However, studies have shown a tendency to underreport issues around which there is sensitivity, particularly among populations such as FSW, given the stigmatized and criminalized nature of their work.(*34*) The use of interview administered surveys was intended to help clarify questions and improve survey reliability. Despite this, it is acknowledged that some survey items overlapped and may have been difficult for participants to distinguish between, even with explanation (e.g., verbal/emotional harassment vs sexual harassment). Although data is taken from an ongoing cohort study, the data analyzed here is cross-sectional, thereby limiting our understanding of causality. Finally, the focus of this study is on street-based FSW in the context of a North American setting, the majority of whom are people who inject drugs. Given the variety of FSW venues, the types of legal and social settings where sex work is undertaken, results may not be generalizable to all sex worker environments.

This study highlights the need to support and foster the development of police-sex worker partnerships and violence prevention strategies that can modify key elements of FSWs' risk environment. Evidence in other settings has pointed to the positive impact of police sensitivity trainings, alongside FSW empowerment and rights awareness in reducing rates of violence.(*35*) Modifying the enabling environment for client violence, including legal enforcement approaches and abuses, that may contribute to a climate of impunity around client perpetrated violence and police misconduct is critical. Such interventions should target the upstream legal and policy environment in which policing of sex work occurs (e.g., introducing policies that prioritize FSW safety) as well as tackling downstream day-to-day practices of police officers (e.g., police sensitivity trainings, designated sexworker liaison officers). Development of interventions should also consider the duality of risk experienced by many FSW, who also inject drugs. The impact of women's drug use on their risk environment, as evidenced in this study's findings, points to the importance of intervention approaches that also reduce barriers to drug treatment.

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CHAPTER 6: DISCUSSION

6.1. Overview

The overall aim of this PhD thesis was to firstly understand the role of law as a structural driver for HIV risk among FSW and secondly investigate the ecological drivers behind policing approaches to sex work in the U.S. context. Three specific research aims were addressed and completed as described in the three manuscripts of the dissertation. Through Chapter 2 an examination of global peer reviewed literature presents a global picture of how police practices have, to date, been operationalized and linked to FSWs' risk of HIV infection. Chapter 4 presents one of the few ethnographic explorations of policing practices towards FSW through an exploration of the ecological drivers surrounding policing practices and police attitudes in the context of Baltimore City, Maryland. Findings better elucidate external drivers for policing practices, thereby informing future intervention and program development to address the policing of sex workers and other vulnerable populations with the goal of improving women's health and safety. Finally, Chapter 5 sought to quantitatively explore the type and frequency of police encounters with FSW and their associations with client violence, as an identified HIV risk factor globally and in the context of Baltimore City, Maryland. The findings provide a more nuanced understanding of the typologies of police abuse and practices and their differential and cumulative role in FSWs' HIV risk environment in the context of a high-risk street based work environment. This discussion chapter seeks to provide a summary of results and conclusions for each dissertation objective.

6.2. Summary of findings

6.2.1. Objective one

The first objective was to explore our existing understanding of police practices as a structural determinant of HIV risk amongst sex workers. Chapter 2 addresses this objective by presenting the results of a systematic literature review that looks exclusively at quantitative research and examining police practices as an exposure, mediator, or moderator for HIV/STI infection or HIV related-outcomes, including studies that examined the prevalence and correlates of police practices against sex workers (i.e., police behaviors as the outcome). PRISMA guidelines were followed for the review and the search was limited to articles published between September 1st 2006 and September 18th 2015. A conceptual model drawing on ecological(*1*) and risk environment frameworks(*2*, *3*) guided the review. In particular the model draws attention to the micro level of policing practices, distinguishing between enforcement practices within the law, and those outside of it, which I defined as 'extra-legal' policing practices. A quality assessment was undertaken.

The search yielded 16 quantitative papers that met the inclusion and exclusion criteria of the review. The majority of studies used a cross sectional design and just over half only contained a single measure of police practices, with an equal split between 'legal' and 'extra-legal' police practices. The remaining studies contained between 2 and 5 police items with a predominant focus on extra-legal policing practices. In thirteen studies HIV/STI was the main outcome, 10 of which found an association with at least one police behavior. Out of the 9 papers that looked at HIV/STI risk behaviors in addition to, or instead of HIV/STI as an outcome, all found an association with at least one police behavior. The findings powerfully illustrate that police practices are a significant structural determinant for HIV in the lives of sex workers. However,

the review exposed a relatively small pool of quantitative epidemiological evidence. The generalizability was limited by a number of factors including, the lack of variation in study settings and arrest being the main measurement for operationalizing policing.

The systematic review is important in addressing one key aspect of the overall aim of the thesis - to understand the role of policing as a structural driver for HIV risk. It provided the first investigation (at the time of publication) of the quantitative evidence exploring police's contribution to the structural HIV risk environment of sex workers. In particular this study provides insight into prominent gaps in the literature, including the need for more studies to include TFSW as a distinct population; to explore the impact of policing longitudinally; and the need for studies to include a greater number of police indicators, including ones that measure the potentially insidious impact on women's health and safety of more routine day to day practices, in addition to more egregious and abusive police practices. Although the remainder of the thesis work focuses on FSW, the findings around the dearth of research into TFSW as a separate population prompted the inclusion of a supplementary cohort within the SAPPHIRE study that looked specifically at TFSW and has broadened the literature in this area(*4–6*).

6.2.2. Objective two

Objective 2 builds on the findings of Chapter 2, and the fact that little attention in the public health literature has been given to a more nuanced exploration of day to day policing and the drivers for those practices. The paper addresses the second key aspect of the thesis's overarching aim - investigating the ecological drivers behind policing approaches to sex work in the U.S. context. As set out in Chapter 4, using ethnographic methods, I describe police

practices towards street based FSW in Baltimore City and examine the role of ecological drivers in shaping police enforcement and use of discretion. This study was designed to inform and support the need for structural interventions in partnership with the police to improve the health and safety of street based sex workers. Initial findings around policing practices also informed the development of indicators that were included in the SAPPHIRE survey and ensured the additional measurement of more routine day to day practices relevant to our study population.

A pluralistic theory and data driven approach(*7*) was employed in this Chapter, and uncovered a number of ecological factors at the structural (e.g., criminalization), organizational (e.g., violent crime control), community and individual level (e.g., stigmatizing attitudes) that appeared key to driving individual police practices and attitudes towards FSW in the setting of Baltimore City. In this study, "move along" tactics by patrol and 'sweeps' by Vice, were shaped by an ecological context in which more affluent neighborhoods are dominated by communities' moral concerns (e.g., children seeing sexual activity on the way to school, discarded condoms on porches). An interesting new finding around the contextual factors shaping displacement of FSW by the police, are the periodic upticks in violent crime that characterize cities such as Baltimore. Spikes in violent crime prompt crackdowns by Vice; these sweeps are not intended to address sex work, but utilize the threat of arrest to coerce FSW into providing criminal intelligence. In line with other policing studies (*8*, *9*), enforcement practices in 'marginalized spaces', such as open-air drug markets, contrasted enforcement in 'prime spaces' such as more affluent residential neighborhoods discussed above. Within the milieu of the open-air drug trade, FSW were not prioritized as targets of sex work-related patrol enforcement at all, instead it was their identity as drug users that shaped patrol interactions.

In addition, the paper helps elucidate the role of policing as a key determinant of HIV risk. Despite the overwhelming current approach put forward in the public health literature to forge successful partnerships with emphasis on dialogue, training, and a shift to community orientated social service models*(25,26,33)*, findings from Chapter 4 highlight police have little understanding of the potentially negative implications of their enforcement strategies (e.g., move along tactics) in the generation of HIV risk. This finding emphasises the potential importance a lack of public health orientated policing culture may have in perpetuating police's role in FSW HIV risk generation. In addition, the paper confirms reports by FSW in the global literature of police stigmatization. Consistent with international literature exploring FSW stigmatizing experiences of policing (*10*, *11*), we identified gendered assumptions and a collective masculine police culture, amongst both male and female officers, which influenced the ranking of sexual violence as a low policing priority, compared to other violent crime. Only a small number of officers' patrol interactions with FSW reflected a more guardian (i.e., protective policing) style. Furthermore, observations in this setting revealed little evidence of police proactively helping women (e.g., with social service, drug program referrals).

In considering public health-police partnerships to address the needs of FSW populations in the U.S. and elsewhere, this study supports existing calls for decriminalization of sex work, supported by institutional and policy reforms (e.g., around coercive police practices, FSW street safety), neighborhood-level dialogues that shift the cultural landscape around sex work within both the police and larger community and innovative individual-level police trainings (e.g., to address sex work and drug related stigma).

6.2.3. Objective three

Objective three was to quantitatively describe the type and frequency of a larger range of police practices towards FSW, and investigate the relationship between those practices and client violence. In line with the overall aim of the thesis to understand the role of law as a structural driver for HIV risk among FSW, I focused on client violence as it represents a direct negative health experienced by FSW and is strongly linked to HIV risk. Chapter 5 summarizes the findings of this objective. I used cross-sectional data from a cohort of street-based FSW in Baltimore City, Maryland, USA that asked very detailed questions about police experiences by FSW. In particular, it was able to separately explore the impact of both routine police behaviours and egregious behaviours. While it is difficult to draw a simple line between these two types of behaviours, broadly speaking, I considered routine behaviours to be those that the police would generally consider as part of normal patrol activities, including moving FSW along, conducting searches for drugs. Egregious behaviours including violent or abusive acts, or threats of violence. The results show that virtually all FSW experience both routine and egregious acts from the police. Further, egregious acts were independently associated with increased risk of experiencing recent client violence. Given that violence has been identified in the broader literature as a key HIV risk factor, with violence being associated with HIV and individual level risk behaviors linked to infection (e.g., non-condom use)(*12*, *13*), these findings point to a key role that the police have in affecting the risk environment of this vulnerable population. The findings from this study were also consistent with the findings of a systematic literature review by Platt et al., that repressive policing practices are consistently associated with increased risk of client violence across countries where it is measured (*10*). This further supports that such policing practices are linked to increased risks of client violence across different contexts. These results form a strong piece of evidence that can be used in policy discussions in helping change policing practices in this study context.

6.3. Triangulation of findings

Across all three manuscripts, my findings consistently identify policing as an important structural determinant operating within the HIV risk environment of FSW. The findings of the systematic review (Chapter 2), show that existing literature supports an association between police behaviors and a HIV/STI outcome or related risk behavior that warrants more in-depth research. In particular findings were limited by context, and importantly did not include results from the USA. My quantitative paper (Chapter 5) highlights how frequent exposures to abusive police practices appear to contribute to an environment where client violence is regularly experienced by FSW, as well as evidence of police driven sexual risk by FSW in the USA context. The finding that even non-abusive police encounters, which occur on a much more frequent basis than abusive ones, also contribute to a risk environment that can facilitate client-perpetrated violence is further contextualized by our police ethnography findings (Chapter 4).

Here I found that police in this study context view violence towards FSW as an inescapable part of the street existence and not a policing priority. This palpable apathy towards women's safety and absence of a police culture and accompanying practices that seek to better address and prevent client violence towards women highlights how policing practices towards sex workers may indirectly contribute to increasing FSWs' vulnerability. Ethnographic findings helped me hypothesize why even positive police interactions, such as providing assistance, were also associated with increases in risk of client violence. My ethnographic findings pointed to the fact that many police interactions that appear friendly, are in fact when viewed in context, typically coercive in nature, for instance instigated to promote FSW compliance with the provision of information on drug related crimes. This hypothesis is supported by literature in

this and other settings exploring people who inject drugs and FSW experiences with the police (*14–17*). In particular, fear of police, including arrest, drives police avoidance strategies, with knock on implications for HIV harm reduction. It is hypothesized here that FSW very likely look to avoid even police assistance, particularly given its coercive nature and situated as it is within a context of more abusive police experiences. Avoidance tactics could include moving to unsafe remote areas to find clients, which existing research highlights limits women's harm reduction strategies (e.g., screening clients, condom negotiation) and generates greater vulnerability to client violence and other forms of violences(*18–20*). My ethnography work has specifically identified that displacing women is a common policing strategy, and that police have little understanding of how such strategies compromise the safety of women or their HIV risk implications, including as Chapter 5 illustrates an increased risk of client violence.

Taken together the three papers provide a compelling illustration of the impact of a spectrum of police behaviors from routine day to day practices through to abusive practices and their significant contribution to women's day to day risk environment.

6.4. Study strengths and limitations

6.4.1. Limitations

The findings from this thesis should be viewed in light of several limitations including sources of potential bias and lack of generalizability. In the case of the literature review (Chapter 2) the inclusion criteria were set so as to produce a narrow critique of the quantitative literature around the role of micro-level policing practices as a structural cause or mitigating factor for risk, and potential median of structural interventions to reduce risk. We acknowledge the larger body of

qualitative and grey literature that supports the role that police abuse and enforcement practices have on sex workers' HIV risk environment. This larger body of work has since been more thoroughly examined in a follow up review by Platt and colleagues (*10*). A meta-analysis was not undertaken due to the heterogeneity in risk factors explored by different studies.

With respect to the ethnography (Chapter 4) with the Baltimore Police Department, the scrutiny around police practices may have led police to be less frank in their opinions, or for districts to pick 'by the book' officers for field observers to ride-along with. The nature of observations also meant that there were no expectations around witnessing the most egregious police behaviors towards FSW during ride-alongs. It was also the case that some ethnographers involved in police ride-outs went on to help with survey data collection as part of the SAPPHIRE Study, thus potentially creating a risk that staff would not be viewed as neutral, but be associated with the police. However, in reality no FSW appeared to associate the two arms of data collection or mentioned seeing a staff member on police ride-outs, with very positive feedback on SAPPHIRE staff throughout data collection. In addition to this all ethnographers noted that FSW, who they explained their presence to and talked with about the study during ride-outs, were pleased to see researchers out observing the police and appeared to view the ethnographers' presence as a positive attempt to improve policing within the sex work community. A further limitation of the data relates to the lack of focus on race as a socio-structural category that may have had a bearing on police-sex worker interactions. FSW that were observed and encountered during ride-alongs and in cohort data collection tended to be white, this racial disparity was also reflected in the cohort data. It was beyond the scope of the papers to unpack the reasons for encountering a predominantly white street-based FSW population in the context of a city where economically deprived neighborhoods are disproportionately black. The predominance of white FSW could be tied to the relationship

between street-based sex work and the drug economy, or a preference among other FSW populations to utilize indoor venues. In turn it is acknowledged that the ethnographers involved in the study carry with them their own sources of bias, particularly working with stigmatized populations like sex worker populations. Diversity in background and experience (including gender, time in the city, previous work with the police) was intended to help mitigate the effect.

Finally, with respect to Chapter 5, while this study adds to the knowledge base on the relationship between policing and client-perpetrated abuse among FSW, a number of limitations were noted. I used aggregate measures to capture the overall level of abusive and patrol/enforcement activities experienced by the women, which requires a relatively strong assumption that each of the individual measures are of equal weight. It is interesting to note that while four of the patrol/enforcement practices were significant in bivariate analysis, the single aggregate measure in multivariable analysis was not. Further work is needed to develop robust police exposure measurement tools that can help identify the relative importance of individual measures for specific outcomes. The study also excluded TFSW, this was due to the fact that data collection for the transgender cohort was still ongoing at the time of the analysis, and they formed an additional supplementary cohort.

Finally, there are a number of more overarching limitations to the thesis. The first is the focus on just policing, when the literature(*21*) clearly points to multiple other related determinants affecting FSW health that a interlinked with criminalization of sex work and policing. These include food insecurity and homlessness (*22*), gender identity(*6*), stigma(*11*) and availability of services(*10*, *15*). Further work is needed to consider this broad range of potential determinants of HIV risk environment within single analytical frameworks. Secondly, the focus of my thesis was on client perpetrated violence as a determinant of HIV risk and not HIV

incidence itself. HIV prevalence was low among FSW in Baltimore (<5%) and only a handful of women became infected over the course of the study. This means there was not the power to explore drivers of HIV incidence itself. Nevertheless, client violence has been shown to be strongly linked to the HIV risk environment and is, an important health measure in its own right. In addition, in this study setting, violence emerged as a frequent daily experience for women, and therefore a key driver of HIV risk to focus on.

6.4.2. Strengths

The study is also characterized by a number of strengths. At the time of publication, the review (Chapter 2) offered the most comprehensive analysis to date of policing practices as a mechanism for HIV outcomes among sex worker populations. It also clearly demonstrated how little evidence there currently existed in quantifying the link between police actions and FSW health, with clear policy implications. My police ethnography work (Chapter 4) also had important strengths. Prior to this study, there had been few efforts that had engaged police departments and examined their behaviours directly. Nearly all previous efforts had focused on secondary reports from affected communities (e.g., through asking FSWs about police exposures), with clear potential implications for biases in reporting. The police ethnography also allowed the establishment of an open and frank dialogue with the police department around the aims of the study through initial key informant interviews, allowing me to capture an honest portrayal of policing approaches and priorities towards FSW. Although the presence of observers in the field can influence officers' actions, field notes revealed the extent to which officers let down their guard and shared frank opinions during observations. Finally, the data and inferences made in the quantitative analysis (Chapter 5) presents arguably the most detailed examination of the range of different policing experiences had by FSW. Previous efforts (as outlined in Chapter 2) had largely considered simple measures of policing (e.g., ever arrest),

usually as a secondary-level aim as part of larger study. The inclusion of a Community Advisory Board made up of former and current FSW living in Baltimore City was also an important attempt by the study leadership, including myself, to ensure the genuine participation of sex workers in research. The board was instrumental in a number of ways, providing feedback on study instruments, providing input on referral and support material used during data collection and holding us accountable throughout data collection through regular CAB meetings. My work has generated a more nuanced understanding of the role of the police and demonstrated a clear quantitative relationship between negative police behaviours and the HIV risk environment.

6.5. Program and policy implications of research

The results of this thesis show that criminalization of sex work and the policing practices that accompany it directly increase women's HIV risk and compound overlapping vulnerabilities that constrain women's individual level agency. Results from Chapter 2 show that where sex work is criminalized, both routine (e.g. arrest) and abusive (e.g. sexual assault) policing practices have been associated with adverse outcomes for FSW, including HIV, and sexually transmitted infections (STI), via inconsistent condom use. Results from Chapter 4 point to FSWs vulnerability at the interpersonal level to client violence and at the individual level to drug addiction and the strong association with abusive policing practices. Unfortunately, I did not have the statistical power to look at HIV incidence or prevalence. Results from Chapter 5 point to some of the key drivers behind day to day policing approaches that must be considered in any future programming and policy shifts, including community intolerance, organizational and structural constraints on policing's response, and social stigma towards sex work. Results from all three manuscripts support the development of a community-based programs that

address HIV prevention, both through the provision of basic biomedical services e.g., HIV/STI testing and counseling, drug treatment) behavioral (e.g., HIV/STI risk reduction), but also structural (e.g., know your rights training, bad date reporting, legal aid services). In response to this need a follow-on project is currently supporting a women's drop in centre in West Baltimore that primarily serves street based FSW. The drop-in center offers women-identified clients low-barrier health and social services, a safe space to relax and socialize, and laundry and shower facilities, among other services. Extensive outreach activities are also conducted in the surrounding areas. Since its inception several partner agencies, which have experience working with marginalized populations in Baltimore City, are providing services at the center: the Baltimore City Health Department offers HIV/STI testing and counseling, and reproductive health services by a nurse practitioner and medical assistant; Healthcare for the Homeless, which provides individual and group therapy through licensed clinical social worker; Legal Aid, which offers free legal services in the Center; and the Behavioral Health Leadership Institute, which supports addiction management through inducting and maintaining women on suboxone and providing referrals to long-term drug treatment.

In considering public health-police partnerships to address the needs of FSW populations in the U.S. and elsewhere, this study supports existing calls for decriminalization of sex work, supported by institutional and policy reforms (e.g., around coercive police practices, FSW street safety), neighborhood-level dialogues that shift the cultural landscape around sex work within both the police and larger community and innovative individual-level police trainings (e.g., to address sex work and drug related stigma). Other achievable policy reforms include a shift at the institutional level in the cultural landscape of policing sex work (e.g., introducing a sex worker liaison officer to facilitate follow up around FSW experiences of violence.) However, for such reforms to be effective, the study also highlights the importance of fostering

extensive structural support for FSW (e.g., housing, educational/vocational training) and service referral options (e.g., drug treatment) in collaboration with criminal justice reforms. Shifting police culture away from viewing the vulnerability of FSW as a resource to be exploited and towards viewing it as a harm to be reduced would require a seismic shift away from the current crime control climate, which is tightly bound to the city's ongoing epidemic of violence and to the broader socioeconomic problems of Baltimore city. Addressing the prevalent gendered and stigmatizing assumptions of police officers towards FSW has been tackled through police sensitivity trainings in other settings(*23*), including peer education of officers in collaboration with sex worker organizations(*24*), and should be explored in this context. Training, however, is insufficient without an organizational shift towards prioritizing FSWs' human rights and health, in particular, introducing policies and systems of accountability requiring police to respond equitably to FSWs' experiences of violent crime.

Another important dimension of officers' embedded stigmatization towards FSW surrounds their drug use. Centering police in harm reduction is challenging in a context where illicit drug use
remains widely criminalized and where systemic discriminatory enforcement and overpolicing has resulted in mass incarceration along racial and socioeconomic lines(*25*). Drug policy reform that includes decriminalization of low-level drug use in relation to possession should be a serious consideration in this study context, given that findings from the police ethnography highlighted a growing apathy amongst patrol police to arrest for low-level drug possession. In line with ongoing political and policy shifts at a national and state level to introduce pre-booking diversion for low level offences in the U.S., Baltimore City has recently joined the 'LEAD' program(*15*). LEAD introduces diversion to drug and social services at the point of arrest, albeit currently targeted specifically at drug using populations, rather than FSW

specifically. Despite this, it presents an opportunity to better institutionalize harm reduction and public health thinking into policing practices around vulnerable populations drug use. It also has the potential to ensure a more uniform approach to police officers current highly discretionary interactions with low level drug users, including FSW. In a Seattle evaluation, odds of arrest and felony charges were significantly reduced among LEAD participants, who were also more likely to obtain housing and legal employment compared to a similar population of arrested individuals(*26*). However, diversion is subject to officer discretion and officers' attitudes towards vulnerable populations, and recent evidence from Baltimore City suggests that police comfort in making social service referrals is not uniform(*27*). Further, while LEAD offers potential to engage officers in public health, concerns about police gatekeeping remain and exposure to law enforcement – with its inherent exacerbation of social inequity has been posited as a threat to public health in itself (*28*).

6.6. Study implications for future research

Findings from each manuscript point to several avenues of research that would contribute to a more thorough understanding of the role of policing as a structural determinant of HIV risk among sex worker populations, as well as avenues for law enforcement public health partnering in the context of the U.S. and elsewhere.

Chapter 2 highlights the the need for more studies to include transgender women who sell sex as a distinct population. In response to this research need, later into the SAPPHIRE study we included an additional cohort of N=62 Transgender Female Sex Workers (TFSW) to explore the impact of policing as a risk factor for HIV infection. Results comparing TFSW and FSW structural vulnerability and experiences with the police have since been published. Findings included identifying a high level of police encounters, changes to harm reduction practices in

response to police presence (e.g., carrying condoms, moving to unsafe areas) and high exposure to police and client violence among the TFSW cohort (*4*). Chapter 2 also identified the need for studies to include a greater number of police indicators, including ones that measure the more routine day to day practices, in addition to more egregious and abusive police practices. In response to this lacuna in the scales literature we developed a 6 -item Police Practices Scale (PPS)(*29*). The PPS provides an important and novel contribution in measuring aggregate exposure to routine policing, though there is scope and need for further validation. It is hoped that the scale could be used by others in the field to evaluate the impact of policing on vulnerable populations' health outcomes, including HIV risk.

Chapter 4 provides an important contribution to the literature in this field, highlighting the usefulness of ethnographic research as a tool for elucidating the drivers behind police practices. Further research of this nature is needed in other contexts as a basis from which public health partnering with law enforcement can be informed. In particular the findings of Chapter 4 highlight the importance of fostering extensive structural support for FSW and service referral options in collaboration with criminal justice reforms and FSW empowerment. The theme of the 19th International AIDS Conference in July of 2012 was "Turning the Tide Together", despite the gains in new policies and tools to combat HIV, research such as this shows that to effectively combat HIV risk a holistic approach is needed that engages, understands and works with key drivers for the epidemic among vulnerable populations, such as the law enforcement.

Finally Chapter 5 while highlighting the importance of policing as an important correlate of client violence among street-based FSW takes note of the overarching complexity of women's underlying vulnerability and risk environment. Future-studies need to build upon this observation in this and other settings and look to both measure and understand the intersecting

social-environmental factors that contribute to the risk environment for client-perpetrated violence toward FSWs. As noted in J. Erausquin's editorial comment(*30*) system science approaches (i.e. understanding the complex system in which HIV risk is generated) could be helpful in the conceptualization and analysis of the complex web of contributors.

6.7. Concluding remarks

Baltimore City Police Department, like many cities throughout the U.S. has a broken relationship with its residents, highlighted most starkly during data collection for this thesis, with the death of a young black man in police custody Freddie Gray and the resulting Justice Department investigation and consent decree(*31*). However, recent deaths of black men in other major U.S. cities shows how deeply rooted the culture of police violence is in the U.S. and has sparked a new narrative. A growing coalition of activists in the U.S. advocate a move away from moderate policy reform and individual officer training to a more radical model for reducing police power. Rather than focusing on individual behaviors that arguably cannot fix deeply embedded cultural problems, the call is for dismantling police departments and creating new models for safety(*32*).

How does this current narrative fit with this thesis findings and my own personal concluding thoughts and reflections? This thesis highlights how police practices contribute to the continued escalation of HIV risk among FSW and scrutinizes the drivers behind day to day policing practices that contribute to this risk environment. In line with current public health narratives around public health police partnering, this thesis suggests a variety of policy changes, broader macro-structural shifts needed in the social environment of sex workers and individual level officer trainings as the current best way forward. However, as my research has continued in

the setting of Baltimore City and the current narrative around de-funding the police in the USA unfolds, there is scope for more radical ways of thinking. In the absence of decriminalization, a radical policy shift that saw police forced to step back altogether from policing low-level criminals, such as sex workers and drug users, could allow a space for harm reduction programs to flourish independently. This could arguably remove the need for strained public health partnerships that ultimately fail to walk the tight-rope of harm reduction, criminalization and embedded police culture. However, the reality is that police will always be in the same neighborhoods that FSW work, and as first responders are required to, for instance, answer calls for service from aggravated residents or respond to 911 calls related to overdoses or violence. It seems key therefore that efforts continue to shift police culture to more harm reduction and human rights orientated policing practices, alongside increasing public expenditure to support the underlying determinants of sex workers health and safety (i.e. that create safer work environments, address housing needs, education and drug treatment).

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APPENDIX 1. Study field note aid

RIDE/WALK ALONG – FIELD NOTE
"CHEAT SHEET"

Throughout the duration of your observation you will take field notes, these are in addition to the specific facts and recordings you make in relation to any "Encounter(s)". These field notes should depict the setting and people in a way that provides the reader with a visual description of your entire observation, make your notes chronological to aid recall when you write up.

In your field note diary you should pay attention to the following aspects of the ride/walk along and note down key police officer demographics on the form provided.

1. Shift features - Describe neighborhoods you visit, communities in the neighborhood, weather, routines in the shift, structure and pace of shift.

2. Police Practices – Look out for policing priorities, what guides them? What are the type of tasks police officers perform outside of "encounters"? What are their priorities, and what guides those priorities (e.g. self directed, superiors, community). What type of discretion did the officer show during the course of the shift, how did this relate to encounters?

3. Community Interactions (outside of people involved in "encounters") – generally how do the community interact with officers? Were social organizations encountered? Generally what type of people were they interacting with? How do people/community react to officers? What do they say or do?

4. Police Officer Attitude/Views – this will emerge from chatting in the patrol car and from your observations. What language do they use, how do they interact with sex workers and other citizens, how do they talk to you about their work, why they became an officer, what do they think about our study and their role?

5. Observer Reflections – through out the shift you can note down your own reflections on the shift, the officer, the people you meet, your role as an observer and your own interactions.

RIDE/WALK ALONG – ENCOUNTER FORM
"CITIZEN FACTS"
(Use one for each citizen involved in encounter)

Ride Along Number _____   Officer Study ID Number _____   Date of ride along (dd/mm/yy) _____

Shift start time (24hr) _____ Shift end time (24hr) _____ District and Sector _____

_____

RIDE/WALK ALONG – FIELD NOTE
"CHEAT SHEET"

Throughout the duration of your observation you will take field notes, these are in addition to the specific facts and recordings you make in relation to any "Encounter(s)". These field notes should depict the setting and people in a way that provides the reader with a visual description of your entire observation, make your notes chronological to aid recall when you write up.

Officer Rank **1**   **Patrol Officer**
                  2   **Detective**
                  3   **Sergeant**
                  4   **Other: _____**

Sex   **1**   **Male**
                  2   **Female**

Officer Age: _____

Officer Race: 1   **White**
(Best guess) 2   **Black/African American**
                  3   **Asian**
                  4   **Multiracial**
                  5   **Other (specify): _____**

Ethnicity   **1**   **Hisp/Latino**
                  2   **Non Hisp/Lati**

RIDE/WALK ALONG – ENCOUNTER FORM
"CITIZEN FACTS"
(Use one for each citizen involved in encounter)

Total time with Baltimore City Police (years/months):_____

Time on present sector (years/months): _____

Total years of service: _____

Names of previous police departments (if applicable): _____

What street intersections has this officer seen sex workers at in the last 12 months? _____

_____

Is this officer a suitable candidate for in-depth interview?   **1   Yes**
                                                                        2   No

Additional comments on suitability for in-depth interview: _____
_____

APPENDIX 2. Encounter form

In your field note diary you should note the following:

1. Descriptive timeline - This will be a quick chronological story of the incident, and will help you post shift to write up the encounter.

2. Descriptions - Below are some non-exhaustive probes to assist you in providing a richer description.
a. Location

Probes: Features of the location (e.g. presence cameras, isolated, busy); time of day; weather; role of space around the incident (e.g. how people involved were located in the space - standing here, sitting there etc.)
 b. Nature of Incident

Probes: What initiated the incident; what/who drew the officers' attention; was the law mentioned; physical aspects of the incident (e.g. chase, cuffing); atmosphere (e.g. friendly, tense); kind of "chat" occurred between police officers; chat between officers and citizen/sex worker.
c. Persons Involved

Probes: The people involved in the incident (e.g. bystander, victims, sex worker, other emergency responders, community members or organizations, other officers/ranks); How people relate to one another (e.g. how do they refer to one another); Levels of familiarity (e.g. have people met before, expect to meet again); Behavior/demeanor (e.g. under the influence of drugs/alcohol, signs mental health); Emotional State (e.g. angry, confused); Reaction to incident (e.g. resists arrests, abusive)
        d. Police Actions

Probes: Other agencies contacted (e.g. social services, fire department, ambulance); tasks the officer performs (e.g. search, identity check); priorities for the officer (e.g. getting medical attention, calling for back up, getting information etc.); what actions were taken to resolve the incident and bring exchange to a close (e.g. arrest, moving someone on); exercise of discretion (e.g. thinking around not making arrest, not running warrant check etc.)

3. Debriefing with Officer – This is an opportunity to capture the officer's thoughts and reactions to the incident. This should include their interpretation of the incident and their thinking processes around what they did or did not do, what they saw as important, what influenced their decision/response. How they felt about the interaction after it's over.

4. Observer Reflections: this is an opportunity for you to note down your thoughts on the incident.
Probes: What does this incident demonstrate about relations between police and non-police; What does it demonstrate about police decision-making and judgment; What was the overall tone or feel of the incident; Was there anything unclear or ambiguous about the interaction; Is there any crucial missing information?

Ride/walk along ID No. _____ **Encounter No. (e.g. 1/2) _____** **Date of ride along (MM/DD/YYYY) _____**

_____

Encounter start time (24hr) _____Encounter end time (24hr) _____ Location (street intersection) _____

How many other officers responded in addition to your patrol car: _____

Source of call **1** **Own Initiative** **2** **Dispatch**
3 **Supervisor at roll call** **4** **Request by another officer**
5 **Citizen – On scene** **6** **Other: _____**

Number of sex workers _____ **Number of other citizens _____** **Number of bystanders _____**

% of encounter observed _____ **Did the police seek information or help from another agency?** **0** **No**
1 **Yes**

Enter Agency type: _____

Request Police Report: 1 **Yes** **2** **No**

If yes, lease ask Officer for a report number and record the incident type below:

Police Report Number: _____
Incident Type: _____

Please fill out a Citizen fact sheet for each citizen directly involved (not bystanders).

RW Along ID No. _____   **Encounter No. (e.g. 1/2)** _____   **Date of ride along (MM/DD/YYYY)** _____

Encounter start time (24hr) _____ **Encounter end time (24hr)** _____ **Location (street intersection)** _____

_____

Sex	1	Male	**Age Range**	1	Youth (up to 17 years old)	**Race**	1	White
	2	Female	*(Best Guess)*	2	18-20 years of age		2	Black/AfrAm
	3	Transgender		3	21-29 years of age		3	Asian
				4	30-39 years of age			
				5	40-49 years of age	**Ethnicity**	1	Hisp/Latino
				6	50 -59 years of age		2	Non Hisp/Lati
				7	60 + years of age			
				8	Unknown			

Officer's Prior Knowledge
- 0   No Knowledge
- 1   Recognizes citizen
- 2   Knows by name/ little knowledge
- 3   Knows citizen well (personal background/history offending)
- 4   Unknown

Citizen Category
(all that apply)

	1	Sex Worker		2	Drug User
	3	Homeless person	4	Dealer	
	5	Community activist	6	Other _____	

Evidence of alcohol	0	No	**Evidence of drug use**	0	No
	1	Yes		1	Yes
	2	Unknown			

Sign of Physical injury	0	No	Prior criminal Record	0	No
	1	Yes		1	Yes
	2	Unknown		1 Unknown	

RW Along ID No. _____   Encounter No. (e.g. 1/2) _____   Date of ride along (MM/DD/YYYY) _____

Encounter start time (24hr) _____ Encounter end time (24hr) _____ Location (street intersection) _____

Type of Official Action Taken:	1	Charge(s) laid	10	Provided personal assistance
(Indicate all that apply)	2	Taken into custody	11	Do a referral to another agency
	3	Investigative Detention	12	Warrant Check
	4	Use of some degree of force	13	Body search
	5	Notify supervisor	14	PON (Possession of Narcotics)
	6	More than one responding unit	15	Other Citation
	7	Specialized unit requested	16	Unfounded Call
	8	Checked physical well being of citizen		
	9	Provided citizen with information	17 Other _____	

Additional notes:

APPENDIX 3. Key informant guide

Organizational Key Informant Guide for Police Leadership

> This interview guide provides general open-ended questions. Try to address each question during the interview; however, you may end up changing the order depending on the flow of the conversation. Under some questions a number of sample probes are included in italics. These are not intended as questions that must be asked during each interview. Rather, they are meant to facilitate your probing. General probes that you should call upon throughout the interview, where appropriate include:
> *Tell me more about that*
> *I didn't quite understand that – can you tell me more*
> *What do you mean no, why not yes*
> Shortly after each interview, turn to the reflections page and write down notes on potential additional questions for future interviews, probes that provided good insight, and any reflections on the interview content or external circumstances of the interview.

Thanks again for talking to me today. Remember, anything that you tell me is completely confidential. You don't have to answer anything that you don't want to answer. Although the interview is more like a conversation, I will look at the pages from time to time just to make sure I am covering everything.

1.0 Introductions and setting up the interview

1.1 It's a particular point in time for Baltimore, given the events around the death of Freddie Gray. What are your thoughts on how events might shape or change policing?

Probes:
What were policing priorities?
How have those changed?
How do you think things will look in the future?

2.0 Shifting the conversation to sex workers

2.1 How does street based sex work fit with what we've just talked about?

Probes:
What do you understand by the term "street based sex work?"
What is the approach to policing this population?
Has it changed?

2.2 What about your own experiences of policing sex workers?

Probes:
Can you recall experiences from when you were a patrol officer? (
What words would you use to describe sex workers ? (e.g. women, transgender, drug users etc)

3.0 Obtaining more detail on policing sex workers

3.1 What do you hear from your officers about sex workers?

Probes:
Do you get feedback form officers?
How do you think your officers interact with sex workers?

3.2 We have heard officers say, *"We can't police our way out the problem."* How do you feel about that statement?

Probes:
What kind of options do police have open to them in dealing with sex workers? (e.g. alternatives to arrest, charging options.)

3.3. Is there anything about sex work that makes it different from other types of illegal behavior that are targets for policing?

4.0 Talking about wider communities attitudes

4.1 What are the attitudes of other citizens in the city to sex workers?

Probes:
Community leaders
Individual citizens
Community groups

4.2 What do you think the communities view is of your role in policing sex workers?

5.0 Talking about the role of this study

5.1 We are exploring police culture around sex workers with the aim of working with the BCPD to develop alternatives to arrest, what's your view of this collaboration?

Probes:
Examples include, giving police meaningful alternatives to arrest, sensitization training etc.

5.2 What would you like to see come out of or work with the police?

5.3 Have you got anything more you'd like to add or any questions for me.

APPENDIX 4. Oral consent form

JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH

INFORMED CONSENT DOCUMENT

Ride and Walk- along

Study Title: The HIV risk environment of high-risk women and transgender: Interaction with public safety.
Principal Investigator: Susan Sherman
IRB No.: V1, September 25, 2014

Purpose of research project

We are conducting a qualitative study among police focused on the health of sex workers (SWs) in Baltimore City. The study is interested in the role police play in the health of sex workers. In order to be better immersed in the organizational culture of the police force and understand policing practices towards SWs we are using an ethnographic approach, which includes conducting walk/ride-alongs. This form explains the research study in detail. At any time during the consent process, please ask questions about things that need clarification or do not make sense.

We are interested in witnessing and exploring patrol police behaviors and choices during a typical shift. A member of the study team will accompany you for a 4-hour portion of your shift. The walk/ride along will give study staff a chance to observe your work, including your interactions with SWs, choices for arrest, as well as hearing your professional perspective on policing SWs and current policing approaches. These findings will help us to better understand the role police play in the lives of sex workers, and identify ways in which the police could possibly effect their health.

Why you are being asked to participate

You are being asked to participate in this part of the study because you work as a Police Office in Baltimore City. Forty-five Police Officers will be participating in this part of the study.

Procedures:

If you agree to join this part of the study, the following will happen solely for research purposes:

1) We will ask you to participate in ride or walk along
2) One study staff member will accompany you for approximately 4- hours

3) We will take notes on an observation form during the ride/walk-along

Risks/discomforts

The observational guide is designed to capture aspects of a typical police shift, including interactions with SWs and poses limited risk. However, please remember you do not have to answer any question if you feel uncomfortable doing so. Any information you provide about yourself or colleagues will not be linked directly to you, as we will not record your name.

Anticipated benefits:

There are no direct benefits from being a part of the study.

Payment

There are no payments associated with participation in this interview.

Protecting data confidentiality

We will do everything possible to keep the your responses private and confidential. We will not record your name, and use a code to refer to on the audio recording of your interview (if you agree) and any handwritten notes. Therefore the information you provide about yourself will not be linked directly to you. The digital tape with your interview, any handwritten notes and all transcriptions will be destroyed one year after the study is completed. You will not be personally identified in any reports that may result from this study. Nothing will ever be reported to any colleagues or your superiors.

To help us protect your privacy, we have obtained a Certificate of Confidentiality from the National Institute of Health. This Certificate does not mean that the government approves or disapproves of this study. This Certificate adds special protection for research information that identifies you. It allows us, in some circumstances, to refuse to give out study information about you without your consent when it is sought in a legal action. Still, we may disclose identifying information about you, if for example, you need medical help.

There are only a few reasons we would give out information about you The research team will give information to local or state authorities:
- If they suspect abuse or neglect of a child or dependent adult;
- If certain communicable diseases are present; and
- If the team learns that you plan to harm yourself or others

What happens if you leave the study early?

Your participation is completely voluntary, meaning that it is up to you. You may choose to stop taking part in the study at any time. To do so, you can tell me or another study staff person that you do not want to continue taking part in the study. If you choose to leave, we will use the data that you have given us while you were in the study.

Who do I call if I have questions or problems?
Call the Principal Investigator, Susan Sherman, at (410) 614-3518 if you have questions about the study.

Call or contact the Johns Hopkins Bloomberg School of Public Health IRB Office if you have questions about your rights as a study participant. Contact the IRB if you feel you have not been treated fairly or if you have other concerns. The IRB contact information is:

Address:	Johns Hopkins Bloomberg School of Public Health
	615 N. Wolfe Street, Suite E1100
	Baltimore, MD 21205
Telephone:	410-955-3193
Toll Free:	888-262-3242
Fax:	410-502-0584
E-mail:	irboffice@jhsph.edu

Permission to Proceed?

Do you agree to participate in this study?

___YES the person consents to participate in the study

___NO the person does not consent

_____
Print name of Study Person Obtaining Consent

_____   _____
Signature of Study Person Obtaining Consent   Date

IF Yes Record the Participant ID Number below:

_____ Participant ID Number

APPENDIX 5: Manual of procedures

Sex-workers And Police Promoting Health In
Risky Environments

SAPPHIRE
Study

Manual of Procedures

Phase IV

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INTRODUCTION

The purpose of this MOP **supplement** is to provide a Manual of Operating Procedures (MOP) that will facilitate consistency in protocol implementation and data collection of **Phase IV** activities.

It should be read by all staff joining the study and used as the first point of reference for information on the organization of the study.

The MOP and all other study documentation will be kept on the online cloud-based file storage and file-sharing service Johns Hopkins Box (JHBOX). JHBOX meets all HIPAA and FERPA compliance standards for safe and secure file sharing. The Study Director will create a study JHBOX for the Principle Investigator and authorized study personnel. The MOP is to be used in conjunction to the QA/QC Manual, also located in the study JHBOX.

SECTION 1: Study Overview

1.1 Study Synopsis

1.1.2 Phase I & II

To qualitatively explore police culture, attitudes towards, and experiences with sex workers (SWs) among police leadership (N=15) and street-level police through ride/walk-alongs (N=55) and in-depth Interviews (N=30) of police working in high crime areas of Baltimore City. The final sample size for each component of qualitative data collection may be subject to change depending on contextual factors and as deemed appropriate by the Principle Investigator.

The study will adapt an organizational ethnographic approach, which will allow for an in-depth examination of police culture and policies, as well as attitudes and experiences of leadership and patrol police in their own words.

For more details see the SAPPHIRE MOP for Phase & II field activities

1.1.3 Phase III

Targeted Sampling (TS) is a purposive method for sampling hidden and street-based populations in given geographic areas. It has been widely used in epidemiological research with street-based populations, such as injection drug users. It is well suited to the mobile nature of street-based SWs in Baltimore. TS will occur in three iterative steps: (1) Initial mapping via observational Windshield Tours of areas identified through secondary data and observations in order to develop maps of SW locations. (2) Ethnographic mapping via Walk Throughs and street-based key informant discussions to further refine maps of SW locations. And (3) Development of Sampling Plan to recruit SW's through analysis of data gathered in steps 1 & 2.

For more details see the SAPPHIRE MOP Supplement 1 for Phase III field activities

1.1.4 Phase IV

Phase IV will be comprised of a prospective cohort study of 250 street-based SWs in Baltimore City. Recruitment of cis-gender female and transgender female street-based SWs will occur at street-based SW locations in Baltimore city. Targeted sampling will be used to recruit participants. Locations will be selected using the sampling frame developed from Phase III. The study van will be driven to the field locations 1-5 days/week, depending on interview volume, with each day or night shift lasting approximately 3-5 hours and staffed by 1 field supervisor, and 2 interviewers. In addition, there will be a Sapphire Study Support Worker available for women to speak with on a weekly basis (shifts to be determined). Staff will park the study van in a suitable location informed by Phase III data collection activities. All Phase IV data collection activities will occur in the study van. Interviewer-administered quantitative survey data will be collected at baseline, 3, 6, 9, and 12 months. We will

also collect biological specimens at all points of data collection. Participants will be tested for HIV at baseline, 6 months, and 12 months. Chlamydia, gonorrhea, and trichomoniasis testing will be conducted at baseline, 3, 6, 9, and 12 months. This data will be used to examine the association between HIV/STIs and the dose and type of police interaction.

1.2 Study Flow Diagram Phase IV

BASELINE VISIT
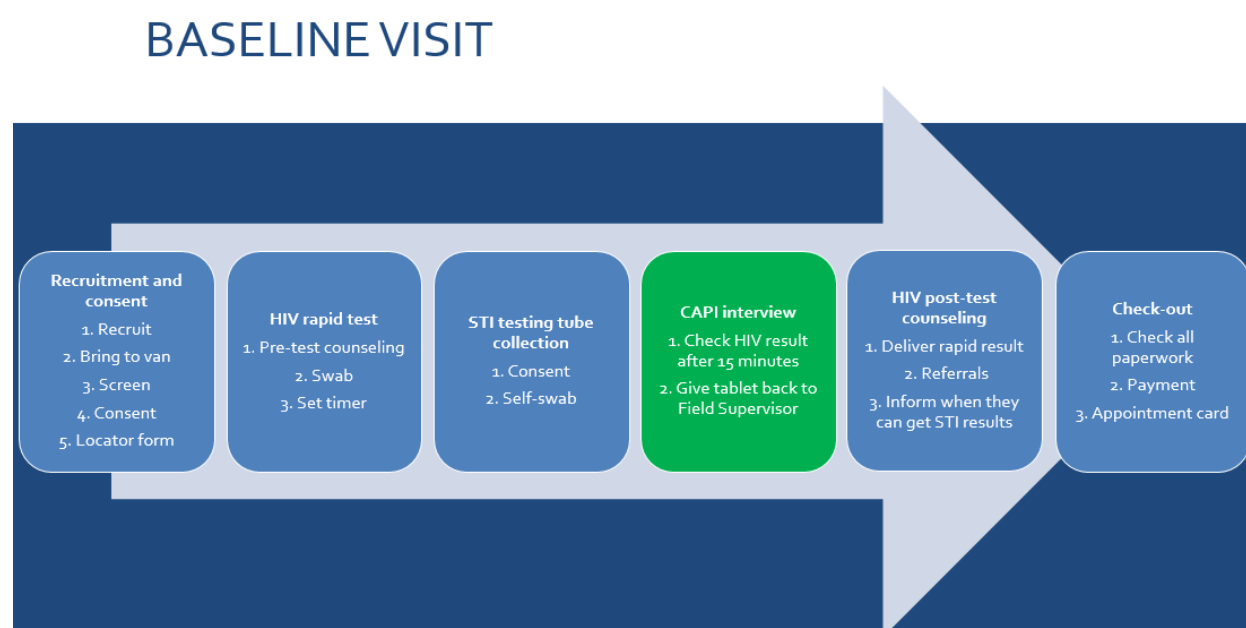
1.3 Study Organization and Responsibilities

1.3.1 Overview

JHSPH will be responsible for carrying out all core aspects of Phase IV study, including development of data flow and management procedures, quality control procedures, data collection, analysis and writing of papers etc.

1.3.2 Staff

The staff with main oversight for the study are listed in **Table 1** together with their roles, contact information and a notation relevant to staff who are the primary contact person with relation to specific situations or study related questions.

Table 1. Key Study Personnel

Name	Role	Contact Information	Notation
Susan Sherman	Principal Investigator	ssherman@jhu.edu (410) 614-3518 (443) 802-4038	Responsible for overseeing project implementation, including hiring of staff, assigning

			staff roles and responsibilities, obtaining IRB approval and compliance, serve as back-up for Study Director in event of absence.
Katherine Footer	Study Director, Field Supervisor	kfooter1@jhu.edu (443) 287-8777 (443) 962-8963	Primary point of contact for all data collection and management related activities.
Brad Silberzahn	Research Assistant, Field Supervisor	Bsilber5@jh.edu (443) 417-5433	Assist with data collection, entry, and management as well as supervise data collection in the field.
Steve Huettner	Field Coordinator	shuettn1@jhmi.edu (410) 302-2103	Primary point of contact for all field related activities, including reporting adverse events.
Rajani Gudlavalleti	Research Assistant, Community Advisory Board	Rgudlav1@jhu.edu (408) 204-2629	Primary point of contact for CAB related activities.
Ju Park	Data Manager and interviewer	ju.park@jhu.edu (202) 386-2834	Responsible for maintaining survey data; lab result data management
Sean Allen	Data Analyst	Sallen63@jhu.edu 859-338-1342	Responsible for sampling strategy and recruitment numbers, and oversight for data management.
Eddie Poole	Field Supervisor	Epoole2@jhu.edu 443-453-8916	Supervision of field activities.
Erin Wingo	Sapphire Study Support Worker	eewingo@gmail.com	Provide women with support services and referrals in the field.
Jackie Toppins	Field Supervisor	jtoppin1@jhmi.edu 443-703-8791	Supervision of field activities.

1.3.3 Community Advisory Board

A Community Advisory Board (CAB) will be created to provide a forum for discussion of the study's findings, and as a forum to begin to engage different parts of the study population (i.e. sex workers, police, community groups, relevant service providers) in a constructive dialogue. The CAB will evolve over time and include members of the broader community e.g. local community groups actively interested in addressing the issues surrounding sex work and policing in their neighborhoods.

SECTION 2: STAFF TRAINING

This section describes the training and certification plan, including timelines and meeting schedules, to train and certify all study staff.

2.1 Human Subjects' Training

All staff engaged in human subjects research must successfully complete an online human subjects research ethics training program through CITI, the Collaborative Institutional Training Initiative and email their certificate to the Study Director. All JHSPH investigators, study staff, and students who have not previously completed CITI human subjects research ethics training will be required to take the **JHSPH Human Subjects Research Basic Course**. JHSPH investigators, study staff, and students who previously completed CITI human subjects research training 5 years (or more) ago and need to renew certification will be required to take the **JHSPH Human Subjects Research Refresher Course 1, 2, or 3.** Relevant information can be found through the JHSPH Institutional Review Board Website: http://www.jhsph.edu/offices-and-services/institutional-review-board/training/citi-training/ A folder containing up to date certificates for all study staff members will be maintained by the Study Director, any questions related to human subject's training should be directed to the Study Director. An electronic list entitled Staff Training Log will be maintained on JHBOX to ensure that all staff members have up-to-date training and certification.

2.2 Training Sessions and Attendance

Four in-person training sessions will be conducted and attendance is compulsory.

Training Session 1: Will cover protocols to follow while in the field. Topics covered include conduct in the field, data collection and management procedures, van operation and maintenance, and staff safety.
Date: 9ᵗʰ Feb 5-8pm 2016

Training Session 2: The purpose of Training Session 2 is to go over the survey used for data collection as well as how to administer the QDS CAPI survey. (Annex 2A)
Date: 15ᵗʰ Feb 5-8pm 2016

Training Session 3: Led by Michele Decker, the focus of this training is on supporting both survivors and staff in research on violence and adversity. (Annex 2B)
Date: 24ᵗʰ Feb 3-4pm 2016

Training Session 4: Trans* Sensitivity Training. This training is led by Tonia Poteat and discusses language that is appropriate and respectful to the trans* community, outdated or offensive terms that are not appropriate to use, and provides information that will leave staff with understanding of the challenges that trans women in particular face within the broader community. (Annex 2C)

2.3 HIV Counseling Skills Level 1

This course is specifically designed for persons who will provide pre and post-test counseling and who will report HIV testing activity to PHPA and the Baltimore City HD. Select staff members who have not already been certified can, if interested, participate in the HIV Counseling Skills Level 1 course offered by the Institute of Human Virology at the University of Maryland. The course consists of an E-learning component as well as 3 days of face-to-face experiential training. Please speak with the Study Director if you are not certified, but are interested in gaining the accreditation.

2.4 Van Procedures and Operation

Those field staff who feel confident and wish to be a study van driver must schedule a time to meet with the Field Coordinator to learn how to properly operate the study van. An overview of Study Van Operations will be located on the van and will be reviewed by the Field Coordinator with all staff.

2.5 Ongoing study staff meeting schedule

There will be meetings for staff, the PI, Study Director,Field Coordinator and Data Manager to touch base with all study staff about their experiences in the field. These meetings primarily provide an opportunity to reflect on experiences and data collected in the prior two weeks, and how those experiences may reflect or change the approach to data collection going forward. The meetings also provide an opportunity for staff to express any concerns they have had whilst in the field.

Full Staff Field Meetings will initially take place weekly from 3pm to 4pm at Hampton House (Room 180A) and will eventually move to bi-weekly once the study is up and running and any problems/concerns have been worked out. If you cannot attend always inform the Field Coordinator in advance.

SECTION 3: COLLECTING PARTICIPANT INFORMATION

3.1 Field Staff conduct

3.1.1 Appearance and Demeanor

Staff are encouraged to wear comfortable clothes and shoes, and will be provided with a logo branded sweat shirt and t-shirt to be worn during field activities.

3.1.2 Study Rapport

Rapport is probably the most important tool of the interviewer, and it is achieved by being aware of and sensitive to the respondent and her social setting. During meetings with the Project Director and Field Coordinator, the interviewers will discuss approaches taken to recruit participants and attempt to define the reactions of potential participants, paying special attention to those who refused. Part of the interviewer's responsibility is to be aware of how they are being received. If the field

staff can predict and modify respondents' reactions, interviewers will be more successful in avoiding refusals. Please remember that building rapport does not include providing assistance outside the scope of the study. Interviewers should remain professional while being approachable and non-judgmental at all times, to ensure that methods of data collection do not encourage social desirability bias in survey responses.

Interviewers should be thoroughly convinced of the importance of the study. If the interviewers are not excited and knowledgeable about the project, the staff will not be effective salespeople, and potential participants will remain skeptical!

Over time, study staff will develop relationships with women given our street presence and continued contact with the women through follow-up. It is really important to be mindful of boundaries. We don't want women to have false notions of their relationship with study staff – although staff will be friendly, you are not "friends" – and if women start to confide outside of the survey it is important to remind them of the nature of your relationship in a humane way. There could also be a situation – albeit rare- when someone asks to borrow money or for a favor. Of course this is out of the question. Please let the Field Coordinator know when this happens as well as overall feelings of approaching boundaries with participants. It is only human but we just need to be mindful of our roles. For questions about local services or other resources (e.g., drug treatment, housing assistance), you can refer participants to different resources located in the Sapphire Study Referral Guide.

During this study phase staff will visit different pre-determined zones within Baltimore City. It is likely that particularly during initial visits to field sites study staff will be approached by the community with questions about their presence and activities. It is really important to maintain rapport with the community. During initial recruitment, you should be prepared to answer general questions about the study, similar in nature to the walk-throughs that were previously conducted. The Field Coordinator will ensure both relevant Community Associations and the Police Department for the District are aware and kept "in the loop" about when our study recruitment efforts will be in their area. Our ability to recruit women will be helped by a presence in the community that is noninvasive and respectful.

Most people are friendly and we expect many women will be keen to participate, but a few will have concerns, objections or fears about participating. Here are a few tips designed to reduce or eliminate refusals:

- Don't invite refusals; an air of apology can often trigger a refusal;
- Be assertive but not aggressive; a friendly, confident manner is likely to have the best results;
- Do not be overly apologetic; try to minimize the use of the word "sorry". This can subconsciously happen in an attempt to be polite but does not project confidence.
- Listen carefully the comments of potential participant/s and try to respond to their objections;
- Make sure that the respondent knows about the $70 reimbursement coupon for completing the first survey (5 in total ($45 for the 3 follow ups and $70 again for the exit interview = $275);

- Assure people that you are not selling anything, and use words such as "project," and "interview" to emphasize that point;
- Stress the confidentiality of the survey, and make sure potential participants know that their names will never be associated with the answers.

3.2 Scheduling, Recruitment and Enrollment Procedures

3.2.1 Field Zone Visits

To plan visits to zones where recruitment activities will take place, a venue-day time-sampling calendar will be created the week before the beginning of each month by the Study Field Coordinator and Post-Doc. The Field Coordinator will send out an email a week in advice in regard to staff's availability for the upcoming month. The monthly SAPPHIRE Study calendar will include: days, time, zones, teams working and will be posted online as well as emailed out to all study staff.

It will take more than one visit to a zone to complete recruitment, therefore as recruitment visits (and subsequent data collection activities) progress, the following will be continuously recorded on a master tracking sheet for each zone: number enrolled; Participant ID (PIDs) of those enrolled; number completing baseline (interview and HIV/STI testing); number completing follow- up (interview and HIV/STI testing). A designated study staff member will maintain the master list and update on a weekly basis.

3.2.2 Prior to a recruitment zone visit

Staff should meet at the van parking lot and drive to the zone together in the study van. Although, at the Field Supervisors discretion, staff are permitted to meet the supervisor at the shift location. However, they should always ask for permission from the Field Supervisor of the shift. If parking on the street staff should ensure their car is locked and all valuables are out of sight and locked in the trunk. For safety reasons the Field Supervisor for the shift should also text the Field Coordinator once they have arrived.

The Field Supervisor should check the laminated Field Supervisor shift checklist (Annex 3A) before setting out to ensure the van is appropriately stocked for the shift (e.g., extra forms and materials). A monthly calendar will be on the study van and can be used by the Field Supervisor to determine which zone the shift should be carried out. There will also be Van Parking Suggestions and Community Contacts List pinned up in the van (Annex 3B) that the field supervisor should look at before heading out to the zone. This will regularly be updated based on feedback to the Field Coordinator.

The study van will be driven to the zone locations 1-5 days/week, depending on interview volume, with each day or night shift lasting approximately 3-4 hours and staffed by 1 field supervisor, and 2 interviewers. Upon arrival, the field supervisor must assess the area for immediate safety concerns. The field team should look at the zone information cards which will be on the study van to familiarize themselves

with the area they are recruiting in. See Annex 3C for an example of a zone information card.

Once the shift is deemed operational, the field supervisor will then brief the study team on the recruitment area boundaries. Together, staff will gather items for recruitment (listed on the Recruitment Materials Checklist (Annex 3D)).

3.2.3 Zone Recruitment Form

The Zone Recruitment forms (Annex 3E) will be pre-printed for each zone and used by staff to tally the number of women approached, screened, and recruited. Staff should not duplicate these forms. One Zone Recruitment form should be completed by field staff teams for **EACH** visit to a designated zone. In the visit information box at the top of the form, interviewers must record zone ID, their name, the name of their shift partner and shift supervisor, the date of the visit, and start and end time of visit.

The Zone Recruitment forms purpose is to track and record recruitment and enrollment numbers. This is very important for estimating response rates for the study, therefore it must be completed carefully by the interviewers using the following steps:

Step 1: Tally the number of cis-trans women, who: you approach for recruitment; who come to the study van on their own; have previously participated; agreed to screening, completed screening; are eligible; and who verbally agree to participate in the study.

Step 2: Zone recruitment forms should be handed in at the end of the shift to the Field Supervisor who will put the recruitment forms in the correct file. Forms will be removed from the study van in a weekly visit conducted by a designated study staff member

3.2.4 Introducing yourself to an area and women

Field staff should canvas the area using the Zone Maps, discreetly approach any cis or trans female encountered in the pre-defined sampling area and briefly explain the study, completing the Zone Recruitment Form appropriately for each encounter.

Start by canvassing the areas closest to the van. **Under no circumstances are recruitment activities on the street to be conducted alone.** The following documents should be reviewed in advance of going to the field the first few times: Safety Operating Procedures (Annex 3F) and Frequently Asked Questions (Annex 3G.)

Prior to enrolling participants, interviewers should greet women in a friendly way, introduce themselves, and describe the study. See Frequently Asked Questions (Annex 3G), for a full list of discussion points and pointers on how to handle questions and concerns. A short template for introducing yourself and the study to women you encounters is provided below:

Hello, how are you doing today? My name is _____ and I am with Johns Hopkins. We are in the area conducting a paid study on women's health, is this something you would be interested in participating in?

Ok great. The study takes place right here in the neighborhood in our mobile study van. It is confidential, and consists of a questionnaire and STI/HIV testing and 4 follow up visits 3 months apart. The first and last visits will take approximately an hour. The other visits are check in's and will be shorter in duration, lasting only 20-30 minutes. You will be paid $70 dollars for your first and last visit, and $45 for the three check in's. You also will receive free STI/HIV testing.. Are you still interested in participating?

Awesome! If you could come back to our study van with us, we can explain the study in more detail and screen you to see if you are eligible to participate.

Interviewers should attempt to build rapport with women and any other community members they encounter and answer any questions about the study while emphasizing the anonymity of participants and identities to women interested in participating.

It is of key importance that field staff establish whether the potential participant has time to do an interview on the spot, explain how long it will take and briefly what's involved (i.e. completing a screener, locator, consent, survey and testing). Remind the women they will be paid $70 for 1 to 1.5 hours of their time. If they seem interested and able to spare the time then invite them back to the van for screening. If they do not have time, then explain that they will have other opportunities to participate, let them know how long the van is on site for that shift and when it will next be visiting. Provide the women with SWAG with the study contact number on it so they can follow up if interested.

3.2.4.1 Recruiting Women with Children

Some of the women we recruit may have children with them. Grown children (that can comprehend the survey content) are prohibited from coming onto the study van. Per the Field Supervisors discretion, women with toddlers may be allowed to participate if the infant can sit in their lap or on the study van couches. Low sugar snacks/juices, and coloring books will be available on the van to give to women with children.

NO STAFF SHOULD TAKE RESPONSIBILITY FOR A PARTICIPANTS CHILD. If a participant has a number of kids, grown children, or the FS does not feel comfortable having a toddler on the study van, staff should kindly explain to the participant that they are welcome to come back if she can find someone to watch over the kids.

3.2.4.2 Follow Up Interviews During Baseline Shifts

As recruitment continues, there will be an overlap between follow up and baseline interviews. During a baseline shift a women may come to the van or call the study phone who is eligible to complete a follow up interview. Due to the importance of

retaining participants, it is okay to complete a follow up interview during a recruitment shift. Procedures for follow up interviews are described in detail in **Section 5**.

3.2.5 Screening

Once back at the study van a potential participant should be screened by one of the field staff using the Recruitment/Screener Form (Annex 3H) on a study tablet.

While completing the screener, the interviewers can introduce themselves and the study in full, evaluate whether the participant meets the study eligibility criteria, and ask potential participants if they are willing to participate. Interviewers should make every effort to keep the eligibility criteria of the study non-transparent. We do not want people to start lying in an attempt to ensure they are eligible even if they may or may not have engaged in a specific behavior. Therefore we ask a number of questions in the recruitment script and screener that are irrelevant to our study. **Never give away the study eligibility criteria to a participant.** Always blame eligibility on the tablet, saying that you are not aware of the eligibility criteria.

3.2.5.1 Explanation of Gender Identity during screener

Part of the screener asks about participant's gender identity, and thus it is likely that staff will have to explain the meaning being cis and transgender to participants. It is important that staff are able to do this in a way that is simple and <u>non-offensive</u>. A few templates are given below. All field staff should practice these explanations so it is second nature to them <u>prior</u> to going out in the field.

For cis-female staff they can say: "So I'm a cisgender woman, meaning my gender identity matches the sex I was assigned at birth. So I identify as female and I was assigned female at birth. For some people they are assigned male or female at birth but later on find that their gender identity is something other than what they were assigned at birth and may choose to identify as a transgender person, that might be a transgender woman or transgender man or maybe they are gender fluid.

For cis-male staff they can say: "So I'm a cisgender man, meaning my gender identity matches the sex I was assigned at birth. So I identify as male and I was assigned male at birth. For some people they are assigned male or female at birth but later on find that their gender identity is something other than what they were assigned at birth and may choose to identify as a transgender person, that might be a transgender woman or transgender man or maybe they are gender fluid.

A More Conversational Explanation: "I am a cisgender <u>Male/Female</u>. That means the moment I was born, the doctor said, 'It's <u>girl/boy</u>! In that moment, the doctor assigned my gender based on my body. As I developed as a child and into adulthood, I continued to identify as a <u>boy/girl</u>. That is not the case for everyone. Some people are trans, gender fluid, or identify in other ways that are different from what was assigned to them at birth."

3.2.6 Steps to take after Assessing Eligibility

If the women is eligible and still willing to participate they should then be taken through the consent process (Section 3.3).

If the participant is **NOT** eligible, they should be thanked for their time and provided with SWAG. They should also be told that staff on the van are available to speak to all women about resources and services and just to have a chat to.

3.3 Consent and Locator Information

3.3.1 Minors

If the participant confirms that they are aged **18 years or above**, upon confirmation of eligibility and verbal agreement to participate in the study, the field staff member should proceed to the consent process (3.3.2).

If they are **15-17 years old**, staff should ensure that the potential participant speaks with a Field Supervisor before any personal locator information or the consent process occurs in a confidential room on the study van without the presence of any other staff. The FS must take extra time to explain the study and ensure that the participant is seeking specific advice with respect to sexual health (e.g., contraception, medical screening for HIV/STIs). Only if the Field Supervisor is satisfied that the minor is seeking specific advice on their sexual health and services in the form of HIV/STI testing should the participant be allowed to proceed. If the adolescent is no longer interested in participating in the study after speaking to a Field Supervisor then they should be thanked them for their time.

3.3.2 Consent Process

The process for obtaining consent is identical for both adults and minors, as minors will have had an opportunity to speak to a Field Supervisor prior to providing locator information.

Interviewers must read a paper Consent Form (Annex 3I), out loud to participants before obtaining consent. If the respondent indicates they no longer wish to participate for any reason then staff should tell the participant that it is no problem, thank them for their time, and offer them swag. If they still wish to continue, both participants and staff must sign and date two copies of the consent form. The participant should be offered a copy and we will retain a paper copy for our records. **Once a participant has been recruited, the outcome of that recruitment attempt should also be recorded on the Zone Recruitment Form.**

Once the consent form has been completed, the participant is officially enrolled in the study. The interviewer should then pull an unused Participant Folder from the study cabinet. Participant Folders will have all forms needed for the current phase of data collection. A unique participant ID will be listed on each pre-made folder, and will be applied to the current participant. This folder will be used to store forms for the participant through all phases of data collection.

3.3.3 Locator Form (Paper)

The Locator Form (Annex 3J), contained in the participant folder, should be completed for all eligible women who are willing to participate in the study, have been assigned a Participant ID number, and completed the consent process. The form has a script that should be read to each participant to explain why we are collecting locator information. Review the form to see what is included. Participants should have it explained to them that if their primary contact number is not working or they cannot be reached on it for their next follow up, then a member of the study team will reach out to their second contact. Field interviewers should emphasize that no information will be disclosed about the contents of the study. Instead we will simply say that we are calling from Johns Hopkins to schedule a follow up appointment, if you are not available to speak with us, we will ask the secondary contact to pass on the message and a contact number.

Once the locator Form has been completed, the Locator Form should be given to the Field Supervisor. The Field Supervisor should send a text to the participant (if they gave their own cell number) **from the Sapphire Study Phone** giving a generic message stating "This is the Sapphire Study. Thanks for participating and feel free to contact us at this number with any questions." This will allow us to check we are receiving legitimate contact information in a non-intrusive manner.

3.4 Baseline Interview & HIV/STI Testing

3.4.1 Process for baseline

During the baseline appointment we will be asking participants to complete an interview using a computer-assisted personal interviewing interview technique (CAPI), and to collect specimens for HIV, chlamydia, gonorrhea, and trichomoniasis testing. Once the participant is ready to start, complete the following activities in order.

Prior to interview

We want you to stress to participants, as much as possible, that the study is confidential and that we will never connect their name with their responses. <u>We need to try to do as much as possible to make people comfortable with us and with what we intend to do with the data.</u>

HIV Testing

HIV testing: Staff who have successfully completed the HIV Testing and Counseling Skills Level 1 training course (**Section 2.3**) will conduct a rapid oral fluid test using OraQuick™. Participants will be administered a swab to be held in the mouth for several seconds to collect saliva. After the swab is placed into the developer vial, the timer will be set to 20 minutes. The results will be ready for diagnosis at the end of the survey interview. Results should be recorded on the Baseline Participant Form

(Annex 3M) by the Field Supervisor. For step by step instruction please refer to pages 4 & 5 of the OraQuick Advance Rapid HIV-1/2 Antibody Test Package Insert (Annex 3N), a copy will also be on the study van.

On a weekly basis (Monday), a designated study staff member will conduct quality control tests to ensure that test kids are functioning properly. A control test log will be kept and maintained on JHBOX (Annex 3O).

In the event of a positive HIV test, staff should refer the participant to the Baltimore City Health Department to undergo venipuncture and standard confirmatory Western Blot testing by Baltimore City Health Department laboratories.

The Field Coordinator will be notified of all preliminary positives on a weekly basis as folders/forms are processed. In the event of a preliminary positive, both an HIV Lab Form (Annex 3P), as well as the Morbidity Report Form (3Q) will be faxed to the Health Department along with the participant's Locator Form and STI results by the Field Coordinator. Once faxed, all forms will be kept in a locked cabinet in the Field Coordinator's office.

Post-Test Counselling

HIV results should be given after all baseline procedures have been completed. Best practices for delivering test results to participants are explained in detail in the HIV/AIDS Counselling & Testing Skills Level 1 Participant Manual. A copy will be available on the study van for reference, however staff should read through it and be up to date prior to going out in the field. Although not exhaustive, some of the most important steps to take when delivering results are listed below.

Delivering a Negative

- Inform participant that these results indicate the absence of HIV their entire life up until 3 months ago, and they should be tested again in three months (which we will provide during their follow up visit)
- Assess their knowledge of HIV Transmission both sexually and intravenously, and educate them on ways to remain safe.

Delivering a Positive (in addition to referring them to the BCHD for supplementary testing)

- Using the Sapphire Study Resource Manual, go over relevant information (e.g. health providers, hours of operation, hours to call) and provide them with pamphlets.
- Evaluate their immediate plans and needs, (where are they going, do they have someone they can talk to.
- Check in with the participant in a day or two

Baseline Interview

The interviewer will conduct the 50-60 minute baseline survey on a one-to-one basis using the structured CAPI baseline interview on a study tablet. The field interviewer should request a tablet from the locked cabinet. **The Field Supervisor should not open the cabinet in view of the participant**. If there are problems with the tablet

use another tablet if you are near the beginning of the survey. If no tablets are available, use a hard copy, available on the study van. Any problems with the tablet or survey questions should be noted down by the field interviewer on the bottom of the participant form for the Data Manager, and she will follow up with them at the team meetings.

The interviewer should guide the participant through the interview process, using flashcards cards where applicable, full training will be provided to all staff on using CAPI before they go into the field.

Biological Testing

a) *Chlamydia/Gonorrhea and Trichomoniasis Testing*

We will offer vaginal swabs and urine sample (see Annex 3K for complete instructions). It is important to remain neutral during this process, as we will be working with both cis and transgender women.

If a participant reports during the screening process that she was assigned female at birth, staff should inform them that they will be required to do a vaginal swab.

If a participant reports during screening that she was assigned male at birth, the interviewer should inform her during the consent process that she will be asked to do both a urine test and a rectal swab. It is required to do both tests to participate. This information should be delivered in a neutral and matter-of-fact manner, but should it should be emphasized that both swabs are required. If the participant inquires as to why she is asks to do two tests, the interviewer should tell them that bacterial infections (chlamydia and gonorrhea) are localized infections, so both tests are needed to best capture any exposure she may have had and to support her health. If the participant says that she would not be exposed in one area (i.e. does not engage in receptive anal sex), the interviewer should acknowledge her concerns but inform her that tests need to be standardized for the study and it is still a requirement.

Field Supervisors can prepare the test kits for the field interviewer. Before handing to the participant remove the specimen tube and write down the date and time of sample collection and **patient specimen ID** on the tube label. DO NOT WRITE THE PARTICIPANT ID ON EITHER THE SPECIMEN OR THE LAB FORMS. The patient specimen ID naming convention is as follows:

NAMING CONVENTION: **First letter of patient's forename_First letter of patient's surname_month of birth_year of birth**

e.g. for Katherine Footer born May 1981: KF_0581 would be the study Director's Patient Sample ID.

Place the tube, a biohazard bag, and diagram with instructions in a brown paper bag (for transporting the kit to the study bathroom).

Hand the participant the brown bag holding the STI test kit and walk her through the steps to take the samples (use diagram with instructions if needed). Field supervisors should reiterate to participants what test(s) they will be doing, based on whether they are cis or transgender. Supervisors should be prepared to answer any

remaining questions the participant may have regarding the STI testing protocol.

In short, testing will be conducted as follows:

<u>Vaginal Swabs</u> - Staff should instruct the participant to go to the study van bathroom where they will use the swab to collect a sample from her vagina. The swab is then placed back inside the tube, the end is broken off, and the cap is sealed. The tube should be placed in a hazard bag and then placed within the brown paper bag.

<u>Rectal Swabs</u> - Staff should instruct the participant to go to the study van bathroom where they will use the swab to collect a sample from her rectum. The swab is then placed back inside the tube, the end is broken off, and the cap is sealed. The tube should be placed in a hazard bag and then placed within the brown paper bag.

<u>Urine Samples</u> – Staff should instruct the participant to go to the study van bathroom and provide a urine sample in a styrofoam cup. Participants should be instructed to leave the cup in the bathroom. After the participant has completed this, the staff supervisor should use the pipette included in the test kit to transfer urine into the test tube. The tube procedure should then be followed as described above. Any remaining urine should be dumped in the toilet, and te cup hould be discarded into the biohazard bin.

Once sample collection is complete the Field Supervisor should make sure the cap is sealed tight (gloves will be available on the study van for your protection). Fill out the Lab Collection Forms (Annex 3L) for chlamydia, gonorrhea, and trichomoniasis testing to be sent to the Baltimore City Health Department. **Again be sure NOT to put the Participant ID on the lab collection forms, use the patient specimen ID.** Be sure to create a copy using carbon paper between two lab slips. Place the top copy inside the lab slip pocket of each biohazard bag, place the bottom copy in the brown bag containing the whole kit. The Field Supervisor will store them on the study van in a cooler. Weekly, the whole brownbag with tests and slips will be picked up by a designated study staff memberand taken to the study office for qa/qc processing. All specimens will then be placed in a designated locked cabinet in the study office and will be collected and delivered to the JHU STD laboratory for testing.

Participants should receive notification of a positive test result from the Field Coordinator within two weeks. If the participant has questions about anything related to the test, she can contact the Field Coordinator (give her his business card). Trained staff or health department disease intervention specialists will attempt to contact all infected participants and refer them treatment. Participants should also be informed that they can make an appointment to visit the study van to collect their chlamydia, gonorrhea, and trichomoniasis results after their study visit.

3.4.2 Conclusion of Survey/Data Collection

Once the survey and biological specimens have been collected, baseline data collection is complete. At this time, staff should inform the respondent of their three-month follow up date. The participant should be told that if they cannot be reached for a follow up, we will call the person(s) listed on their locator form, but we will never disclose the reason for the call or their involvement in the study. Remind them that

they are welcome to visit the van at any time if they see us in the future and ask if they have any questions. Participants should be given a reminder card with their follow up appointment window and location, if the participant has a smart phone, she should be encouraged to take a photo of the appointment card, as it is likely the card itself will be lost.

Once any questions have been answered, thank them for their time and provide them with the $70 dollar prepaid credit card and any other swag (candy, toiletries, condoms) or resource brochures (NES schedule, safe injection guide) they may be interested in. The Field Coordinator's phone number is on swag, and participants should be instructed to call his number if they have any questions or concerns about the study.

The Field Supervisor should be the ONLY person who takes gift cards from the designated locked cabinet on the study van. Field Supervisors should remove the necessary number of prepaid cards per shift from the locked safe at the beginning of the shift. This **must** occur at the van parking lot **prior** to anyone other than study stuff coming on the van. We do not want individuals to see a large stash of pre-paid cards, as that will increase chances of adverse events happening such as the van being broken into or staff being robbed. When asked for a voucher the field supervisor should hand one to the interviewer and indicate the voucher number removed and the date on the checkout list in order to log voucher use. The card is redeemable at any participating store. The interviewer will ask the participant to sign (using initials or pseudonym) to acknowledge receipt of the card. The receipt should be filled out to include the date, card number (listed on envelope), participant ID number, participant initials, and signature of the staff member. Ensure that participants know how to activate the VISA card.

If useful, staff should put the Field Coordinator's card in each reimbursement envelope in case there are any follow up questions about test results, etc.

Once the participant has left the study van the field interviewer(s) should ensure that all sections of the Baseline Participant Form (Annex 3M) have been completed. **Staple the top white sheet of the participant's completed receipt to the Participant Form.** Ensure all paper forms relevant to the participant have been completed and placed in the Participant Folder. Once all steps have been completed, the Interviewer should give the Participant Folder to the Field Supervisor who will place it in a locked cabinet for pick up.

3.5 End of Recruitment Shift

3.5.1 Field interviewers

When field staff finish a recruitment shift please provide the Field Supervisor with the Recruitment Form (i.e. numbers approached, screened, eligible etc.) as well as each Participant Folder with the following completed paper forms:

✔ Consents;
✔ Locators;
✔ Completed Participant Form (Baseline)
✔ Top white voucher receipt

In addition:

✔ Put completed STI test and lab forms (in brown bag) in cooler
✔ Return the tablets to the Field Supervisor
✔ Email any problems with the tablets or recruitment process to the Study Director

3.5.2 Field Staff Supervisor

When the shift has ended, the field staff supervisor should refer to the Field Supervisor Shift Checklist (Annex 3A) to ensure completion of all post-field action items. In short, the Field Supervisor is responsible for storing all folders/forms, tablets, and lab samples in locked cabinets to be picked up by a designated study staff member on a weekly basis and taken to the study office for data entry (files/forms/tablets) and the JHU STD lab for testing (samples).

The study van should be returned to its location, and upon completion the Field Staff Supervisor should text the Field Coordinator letting him know everything is ok or if any adverse events occurred.

3.6 Staff Member Roles

Staff members will be assigned to 1 of 2 roles while out in the field: Field Supervisors or Field Interviewers. Each role is responsible for the following:

3.6.1 Field Supervisor
- Coordinating a time and place to meet with interviewers for recruitment shift.
- Picking up, operating, and returning the study van, following proper procedures as listed on the Van Protocol Sheet on the study van.
- Ensuring Van has all necessary supplies before the start of shift per the Field Supervisor Shift Checklist (Annex 3A)
- Ensuring tablets are charged and functioning before the shift starts.
- Ensuring study phone is charged and functioning before the shift starts.
- Assessing recruitment zone for safety before sending staff out in the field.
- Serving as the point of contact with Field Coordinator.
- Providing tablet to interviewer from locked cabinet.
- Providing voucher to interviewer and filling out voucher checkout list

- Back-up data collection tablets to USBs at the end of the shift per the Phase IV QA/QC Protocol (see Annex 3R)
- Go through the end of shift checklist on the Field Supervisor Shift Checklist (Annex 3A)
- Ensure the storage units for tablets and forms are locked at the end of the shift.

3.6.2 Field Interviewers
- Complete and return the Recruiter Form
- Complete the Participant Form
- Complete and collect consent and locator forms
- Double check all forms for completeness and legibility.
- Hand in each Participant Folder with all forms to the Field Supervisor.
- Prior to using the CAPI program on a tablet:
  - Check that tablet is charged more than 50%
  - Check time and date on tablet is correct
  - Check that the wifi is switched off
- Return tablet to the Field Supervisor at the end of each interview.
- Store Participant files away when not in use.
- Alert Field Supervisor if any supplies are running low.
- Make sure the van is tidy at the end of the shift (take out trash!).

3.7 Field Staff Safety and Wellbeing

This section covers aspects of safety of study staff during Phase IV activities and also describes processes for reporting any unanticipated issues.

3.7.1 Procedures to follow

Once stationed in a zone to conduct a recruitment shift inform the Field Coordinator via a text message that you are out in the field. When your shift is complete and you have returned the study van to its assigned location text the field coordinator again.

3.7.2 Safety Tips

Please refer to the Safety Operating Procedures (Annex 3F) for detailed advice on what to do in a number of scenarios you may encounter when out in the field, namely:

- A crime scene or significant police activity in your recruitment zone;
- Dealing with an overdose or other medical situation on the van
- Boyfriends and Pimps wanting to come onto the van

Below are some more general safety tips:

General tips include:
  - All fieldwork (e.g., recruitment, screening) is to be performed **in teams of two.** Stay with or keep an eye on your partner at all times while recruiting on the street. Interviews on the van can be conducted by a single interviewer, but never leave your partner when out and about on the street.
  - Stay alert, know where you are going and walk purposefully.
  - Keep your cell phone handy but not in the open.
  - If you encounter people on the street who ask you what you are doing, be friendly and briefly explain the study, you can offer SWAG depending on the people you encounter.
  - If doing an evening shift, avoid unlit areas and keep to populated streets at all times.
  - Don't wear jewelry; dress down and wear your study sweatshirt or t-shirt.
  - Always carry an ID and either your cell phone or a study cell phone in your pocket.
  - You will carry the paper forms (i.e., zone recruitment form) and SWAG in a bag but do not put your personal items in the bag.
  - The van should never leave without all study staff accounted for.

Guidance about social interactions:
  - Be friendly and confident with anyone you encounter. Let them know what you are doing but don't engage too much.
  - Have friendly and non-judgmental answers prepared for questions you are likely to be asked on the street, the types of question you may be asked will be covered in training.
  - It is completely up to you if you think someone is in the "state of mind" to be approached and screened. If you think that someone seems too drunk or too high, do not engage or say that you will be back on future occasions to recruit.

3.7.3 Staff Self-Care

Given the nature of the survey and topics touched upon (e.g., violence, trauma) participants may disclose experienced from their lives that are upsetting not only for them as participants but also to those conducting the interviews. It is important that staff focus on self-care and maintaining their own general wellbeing throughout the course of data collection. If staff find themselves overwhelmed or depressed by events that they hear about during the course of data collection, please reach out to either Erin Wingo, the Sapphire Support Worker or another staff member you feel comfortable speaking to. If helpful the Study Director or PI can facilitate a meeting with a JHSPH university counsellor. The most important thing is that staff take care of their own mental wellbeing and share with the Study leadership any concerns, so we can work together to address them.

3.8 Data Management Procedures relevant to field staff

(For data management procedure relevant to data managers refer to QA/QC for Phase IV activities (Annex 3R), available on JBOX).

The team must work together to ensure that study supplies and data remain protected.

3.8.1 Tablets

Tablets must remain in the van at all times. After a participant has consented to participate, the Field Supervisor will give the interviewer a tablet and collect the same tablet immediately after the interview ends so that tablets are not lying around. Please guard tablets as you would your cell phone and personal belongings. Tablets must only be used for survey administration and data entry. The wifi should never be switched on in the field. Tell the Field Supervisor immediately if there are any issues with a tablet. Only authorized personnel may transport the tablet to the study office.

3.8.2 Backing up survey data in the field

At the end of the shift the Field Supervisor will complete the following procedures. **Field supervisors should refer to this step by step process each time they do data transfer.**

One USB will be kept on the study van (VAN USB) in a designated locked filing draw and each field supervisor will have their own USB (FS USBs) that they are responsible for keeping secure and bringing to field team meetings. Each USB will contain a folder that syncs to the interview data folder once the SyncToy program is launched on each tablet.

At the conclusion of a shift, the field supervisor will do the following:
1. Plug in VAN USB into tablet 1.
2. Enter password in pop-up window.
3. Go to desktop.
4. Double click on Synctoy icon to launch sync program
5. Press run button (bottom right hand corner)
6. Close Synctoy window.
7. Eject USB.
8. Repeat steps 1 to 7 for tablet 2 and 3.
9. Repeat steps 1 to 8 for your FS USB.
10. Ensure that all tablets, the VAN USB, and study forms (consents, locator forms etc.) are stored in locked cabinets on the study van.

3.8.3 Backing up survey data in the study office

A designated study staff member will bring tablets and the VAN USB into the study office once a week for the Data Manager to conduct back-up, wiping of data, and windows update. Every Monday, the Data Manager will directly copy all interview data from tablets to the study data computer (in E6530) and transfer into QDS Warehouse Manager. The Data Manager will check every interview received against the Survey Log. She will check the VAN USB if there are any missing interviews. In the rare case that an interview is missing or corrupt on the tablet and the VAN USB, the FS USB will be checked at the next field team meeting. She will maintain a data error log of

any missing interviews (Stata do file) and alert the Study Director and Field Coordinator when it is detected.

3.8.4 Backing up data to shared network

The Data Manager will give the Field Coordinator a copy of the raw and cleaned full databases and data error log from the data computer (in E6530, Ju's desk) (copy 1) on the external hard drive (copy 2) to transfer to the JHU network drive where the EDC data was kept (copy 3). This ensures that there are 3 copies of the full raw and cleaned databases throughout data collection.

3.8.5 USB Management

At the field team meeting, the Data Manager will wipe data from FS USBs after confirming that the data is on the study computer and backed up on the shared drive.

3.8.6 Transferring paper forms and logs

A designated study staff member will transfer and file paper forms to the Study Office every Monday. He will photocopy the Survey Log once a week so that a revised copy is available in the Study Office at all times. He will maintain the password protected electronic participant locator log.

Section 4: Contacting Participants for Follow Up Interviews

Section 4 covers the protocol that should be used to notify participants of their follow up dates.

4.1 Pre Eligibility Notification

Using the study phone and the Follow Up Contact Script (Annex 4A), a study staff member will attempt to contact all participants at least 20 days before their scheduled follow up date using the information listed in the Locator Database (in JHBOX). All attempts to contact participants should be logged on the Follow Up Contact Log (Annex 4B).

When making follow up contact attempts, staff should begin with the most direct form of contact (phone calls, text messages, facebook messages, voicemails etc) and work outward until contact is made. If the participant indicated a preferred method of contact, that method of contact should be attempted first. Do not reach out to stable contacts on the first day of attempted contact (unless the only contacts they have are stable contacts), since subsequent attempts will be made. If the participant listed an email, Instagram, or Facebook then messages should be left notifying them of their appointment from the study social media accounts only. If contact is not made on the first day, the same attempts should be made again the following day, inclusive of calls, texts and voicemails to stable contacts.

Because we are leaving messages on participant's phones, social media accounts, and with stable contacts, it will not be uncommon to receive calls. Thus, the study

phone should be checked and monitored on a daily basis for messages and calls by and allocated staff member.

If contact is made and the respondent plans to come to the van during a scheduled shift it should be noted on the Follow Up Contact Log (Annex 4B), so we will know that we no longer need to attempt to reach that individual to initially notify them of follow up. In addition, the Shift Supervisor of the shift the participant plans to attend should be notified so that they can contact them when they arrive at the zone. If a respondent is unable to make the initially scheduled date, they should be informed of future dates we will be in the area.

Section 5: Follow Up Interview Shifts

During follow up shifts, staff are permitted and encouraged to interview anyone eligible for their 3, 6, 9 or 12 month interview. However, only follow up interviews are to be conducted. When conducting a follow up shift we want to prioritize retention of participants. As a result, new participants will only be recruited during baseline shifts. Follow up procedures are explained in detail below.

5.1 Arrival at a Zone/Locating Women

Upon arrival at a zone, staff should set up by placing the SAPPHIRE logo magnets on the van doors, making sure the sign indicating we are only doing follow ups is on the large RV door, and fill out a Follow Up Shift Form (Annex 5A).

The Field Supervisor and interviewers should first attempt to contact participants who indicated they would be coming to the van for a follow up interview. Participants contact information, attempt history, and assigned field tracker are listed on their Field Tracking Form (Annex 5B) in the Field Tracking Binder, located in the safe on the study van. When contacting participants, the FS should follow the scripts provided on the Follow Up Contact Script (Annex 4A). A list of all social media accounts and passwords will be kept in the locked safe on the study van. As contact attempts are being made, the FS should log the contact attempts on the participants Field Tracking Form. In the event a FS learns something drastic (e.g., a participant has passed away, no longer wants to participate, is incarcerated, a stable contact indicates they no longer wish to be contacted etc.) it is the Field Supervisors responsibility to inform the assigned Field Tracker ASAP, as well as notify the someone in the Sapphire Study Office at the end of the shift via email or cell depending on the time.

Once those interviews have been completed, or if all means of contacting them have been exhausted the FS should then attempt to contact participants located in that zone who are closest to being lost to follow up. This can be determined by checking the Expiration Date Calendar (Annex 5C). Field Supervisors must check the Follow Up/STI Tracking Sheet to determine if a participant has already completed their follow up appointment. This form is the most up to date record of completed FU interviews and lists the Participant ID, Specimen ID (Initials_D.O.B.), Follow Up Interview Date, as well as STI test results.

While the FS is contacting participants closest to missing their appointment window, Follow Up Interviewer's should canvas the area for potentially eligible women. When approaching women, staff should explain the study in brief. All staff must be sure <u>not to disclose the topic of the study or anything to do with sex work when speaking to anyone other than a participant.</u> Similar to baseline recruitment, staff should limit description of the study to the fact that it is a women's health study being conducted by Johns Hopkins University. After explaining the study in brief, field staff should ask if the individual has participated. If they think they may have participated, staff should invite them back to the van to determine their eligibility (explained in detail below).

5.1.1 Distributing Flyers

During Follow-Up Shifts staff should also distribute flyers (Annex 5D) to women on the street and establishments that women frequent (e.g., joe's laundromat, NY fried chicken etc.), however flyers cannot be left in mailboxes or in doors as this is illegal in Baltimore city. It is fine to ask women to pass flyers on to friends, but do not directly ask women about other women in the study unless they are listed as a contact person for that participant.

5.2 When Women Arrive at the Van

Whether a women comes to the van on her own or because she was called by the FS, the procedure for follow up enrollment is the same. Most women will no longer have their follow up appointment cards or remember their participant ID number so FS's should ask them their initials and date of birth. Using the Follow Up/STI Tracking Sheet, staff should match the participant's information with a Specimen ID to obtain the women's participant ID number. Once a women's Specimen and Participant ID are found the FS should check to make sure the participant was informed of her STI test results and referred to treatment. **ONLY FIELD SUPERVISORS SHOULD INFORM WOMEN OF THEIR STI TEST RESULTS,** and should ensure that results are given in a confidential manner.

If you are unable to find a woman's Participant ID using the specimen ID and Follow Up/STI Tracking Sheet, try searching for the participant by name on the password protected access database on tablet 3.

Women are eligible for follow up interviews if they 1) have an appointment scheduled for that day 2) Missed an appointment but it is within 6 weeks of the original scheduled date and 3) Their upcoming appointment is within two weeks. It is also okay to interview a woman in a different zone than the one in which she completed baseline. If it is determined that a women is eligible, an interviewer can begin the follow up interview.

If the women is not eligible for follow up, give her an appointment card and inform her that we will call her with more information closer to her follow up eligibility date and ask her if her contact info (phone number, address etc.) has changed. Any updated information should be recorded on the Follow Up Shift Form

If a women is eligible, the interviewer should first pull out a Follow Up Participant Form and blank Locator Form from the van cabinet. **A new Locator Form should be filled out** to ensure that we have the most up to date information. After completion of the Locator Form, interviews should be completed the same as baseline interviews with three exceptions.

1) HIV/STI testing is only to be administered at 6 and 12 month follow ups. **We will not be testing at 3 or 9 months**.
2) **Participants are to receive $45 gift cards** for 3, 6, and 9 month follow ups and will then again receive $70 for their final interview at 12 months.
3) Participants do not need to be re-consented. After an interview is completed, the interviewer should paper clip all of the participants forms together and give them the FS to be checked for completion and accuracy.

5.3 End of Shift

At the end of the shift the FS should:

1) Cross off the participant ID's of any woman who completed a follow up interview on the Follow Up/STI Tracking Sheet
2) Move all participants field tracking forms who completed an interview to the "completed section in the Field Tracking Binder, ensuring to keep the forms in order by participant ID from lowest to highest, as well as review all forms and place them in the safe on the study van.
3) Notified the field trackers and staff member in the study office of any participants they have interviewed or learned notable information about during the shift.

Section 6: Field Trackers

Even though we will be saturating an area to locate participants for their follow up appointments some are inevitably going to be missed. Section 6 details the procedures to be used by field trackers to locate and interview participants.

6.1 Allocating participants to Field Trackers

Participants who missed their follow up appointments will be allocated to Field Trackers (FT's) at weekly Field Tracker meetings (TBD). FT's will be given a bag with the following items:
- Swag,
- STI Kits, HIV Kits, biohazard bags and Gloves.
- Tablet & USB
- Field Tracking Forms (Annex 5B)
- Gift Receipts & Cards
- Locator Forms, Follow Up Forms, and Lab Forms
- Follow Up/STI Tracking Sheet, Zone List, and a list of all social media passwords
- Bug Spray

- Hand Sanitizer

FT's will be responsible for all of the above items. As interviews are completed, Forms will contain confidential information. As a result, bags should never be left unattended or stored in the trunk of a car for any period of time to ensure tablets, gift cards and/or data is not misplaced, damaged or stolen. In the event any study property is lost, contact the Field Coordinator Immediately.

6.1.1 Male Field Trackers

As a whole, participants have not had a problem being interviewed by male staff during baseline recruitment. However, a few have expressed concerns. If a women indicates she is not comfortable being interviewed by a male, please let the field coordinator know and the participant will be re-allocated to a female FT.

6.2 Locating Participants

The Field Tracking Form (Annex 5B) has a participants contact information, expiration date, and a summary of all contact attempts. This should be used as a starting point to locate the participant. All future contact attempts should also be logged on this form. In the event that you learn something drastic (e.g., a participant has passed away, no longer wants to participate, is incarcerated, a stable contact indicates they no longer wish to be contacted etc.) Field Trackers should email the Sapphire Study Office Worker ASAP so that they can notify any staff members that may be working on the van at that time or in the near future.

Participants should be tracked through two possible ways.

6.2.1 Scheduling an appointment

If you are able to get in touch with a women and schedule an appointment through any of the following means of communication (phone calls, texts, voicemails, email, stable contacts, social media etc.) the following procedures should be followed:

FT's must always have another staff member present with them. **Fieldwork should never be conducted alone.** A pool of staff members and their availability will be given to all FT's. It is the FT's responsibility to find another staff member from the pool to go into the field with them. If you cannot find someone from the pool to go with you contact the Field Coordinator immediately.

Interviews should be conducted <u>in a public place</u> in daytime hours such as a cafe, diner, fast-food venue, park or restaurant. Pick somewhere convenient and comfortable for both yourself and the participant. It is up to you which public place the interview occurs in - you have to feel comfortable wherever you are.

FT's are also permitted to conduct interviews in their personal vehicle. <u>Staff are not required to do this</u>, and should only do so if they feel comfortable.

When contacting participants, staff may learn that a women has moved from the location in which she was originally interviewed. Staff are permitted to travel up to one hour from Baltimore City to complete an interview. If you are traveling to interview a participant, an appointment should be made using the same procedures as outlined above. Be sure to contact the participant before heading to the interview to avoid the possibility of driving an hour away for a no show. If a participant is more than an hour away, FT's can complete the interview over the phone. Instructions for phone interviews are given below (section 6.3)

Notify the Field Coordinator by text or email the day before your appointment to let them know you will be meeting a participant. Note the time and location of appointment. If there are any last minute changes (the day of), inform the Field Coordinator by text or email.

6.2.2 Locating a Participant on the Street

Many of the women in our study live transient lives. Their phones may no longer be in service, or they may no longer be in contact with significant others, family, or other typically stable individuals. As a result, successful completion of follow up will sometimes come down to finding women on the street. As with all aspects of data collection, **staff safety is our first priority.** Below are some rules/general safety tips:

- As previously stated, fieldwork should never be conducted alone. Find someone from the pool before going out in the field.
- Notify the Field Coordinator before going out in the field and when you have returned
- FT's should only go to a zone to look for a participant **during daylight hours.**
- When driving in your personal vehicle, make sure the windows are up and doors are locked.
- Do not leave valuables out/visible.
- Be aware of your surroundings: stay in well-lit/open areas, look out for open air drug markets or threatening individuals.
- Don't wear jewelry, dress down.
- Keep your JHU ID visible.
- If you have to get out of your vehicle, do so purposively. It is fine to go check out a hangout/location to see if a participant may be there, but do not aimlessly walk around a zone.
- If at any time you feel unsafe, leave the area immediately and call the Field Coordinator, Study Director or PI if needed.

Tips for Locating Women
- Needle Exchange
- Listed places they like to hang out at
- Some stable contacts are neighborhood staples who regularly interact with the women (Carrol Park laundromat)
- John Website (USA Sex Guide)
- MD Judiciary Case Search

If you are able to locate a participant, emphasis should be made on completing the interview at that time. If you have to reschedule for a different day, you run the risk of losing the participant. If she is capable of completing the interview, find a mutually agreeable place and if necessary, have her meet you there. At weekly meetings FT's can share places they have found to be suitable for interviewing in different zones.

6.3 Completing the Interview

6.3.1 In-Person Interviews

Thirty minutes prior to driving to the interview, staff should contact the participant to confirm that they can make their appointment and inform the Field Coordinator that they are on their way to do the interview. If contact cannot be made then the staff should not go to the interview.

Either the FT or the additional staff member should complete the interview while the other person keeps an eye out for any potentially dangerous individuals or circumstances. Again, safety is our first priority. If at any time you feel unsafe, leave the area immediately and notify the Field Coordinator if necessary.

Interviews are to be completed in the same way they are during follow up shifts (section 5.2). As a reminder:

1) Participants do not need to be re-consented
2) We are not doing HIV testing at 3 and 9 Months
3) Participants receive $45 for 3, 6, and 9 month follow ups, and only again receive $70 for the 12 month (final) interview.
4) A new locator form should be filled out for each participant.
** If you interview a women over the phone or in an area other than a pre-defined zone, enter "O" for other when prompted by the tablet to specify which zone you are currently in.

As a courtesy to the business in which the interview is being held and to help keep the participant alert, FT's may purchase a snack or drink (roughly $5) for the participant. *Save the receipt…this is a reimbursable expense!*

After completing the interview, the FT should give the participant the $45 gift card and have them sign the gift receipt (Annex 3S)

Once the interview is completed, paperclip the participant form, locator form, lab form and gift receipt together to be turned in at the next staff meeting. In addition to collecting all forms, FT's must back up their tablets (Annex 6A) **after each interview** and notify the Field Coordinator once they have safely left the area.

6.3.2 Field Tracker HIV/STI Testing

Because Interviews conducted by Field Trackers are not taking place on the van, FT's must make sure that biological specimen collection and testing is done in a

manner that protects participant confidentiality and makes them feel as comfortable as possible.

a) *STI Testing*

STI swabs should be conducted in a bathroom. If a bathroom is not readily available in the interview location, staff should ask the participant if they know of anywhere they could go to do the swab. Women often know the area around them the best and will likely have ideas.

Staff who have not administered STI tests during baseline recruitment **must** familiarize themselves with the protocol before completing an interview (section 3.4) Since interviews are taking place in public, FT's should discretely give participants the STI kit in a brown bag as opposed to just handing them an STI kit.

b) *HIV Testing*

FT's must have completed the HIV Testing and Counseling Skills Level 1 training before they are permitted to conduct HIV Testing. If you have not completed the training please inform the Field Coordinator so that a training can be scheduled.

All FT's will be provided with a small soft sided cooler to use for HIV testing in the field. As discretely as possible, FT's should instruct the participant on how to complete the oral swab and then place the swab in the cooler. The majority of participants should not have difficulty with the mouth swab as they have already done it during the baseline interview.

FT's should keep the cooler in a discrete location (e.g., next to them in a restaurant booth or bench as opposed to on the counter or table). In addition, FT's should set up the cooler and solution vile prior to collecting the mouth swab so that the cooler does not have to be moved once the swab has been inserted. If coolers are moved once the test is in progress we run the risk of knocking over the equipment and having to start the process over. Similarly, staff should also refrain from picking up the cooler when examining test results. Once the test is completed, staff should place all testing equipment into a biohazard waste bag. Waste bags should be kept in a pocket of the soft sided cooler and turned in for disposal during data drops at the study office.

Delivering Results

FT's are responsible for giving STI results from previous surveys to participants who have not already been notified by Orline or Deb (they may not have given a valid phone number or address etc.) as well as HIV results from the current survey. Staff should wait until the end of the survey to deliver both results and should ensure that results are given in a confidential manner as interviews are likely to occur in public spaces.

When delivering HIV test results, FT's should refer to their HIV Testing and Counseling training. A brief summary of Post Test Counselling instructions is provided above in **section 3.4.1**.

6.3.3 Telephone Interviews

If conducting an interview over the phone, make sure both you and the participant are in a quiet area. The FT will then read the survey to the participant, entering their responses for them on the tablet. It is okay to read the flashcards to the participant during phone interviews.

HIV/STI testing will not be conducted for participants who complete follow-up interviews over the phone. Although the participant is not providing a lab sample, they will still receive $45 for participating.

Once the interview is complete, FT's should inform the participant that we will be mailing the $45 gift card to them and make sure they understand, that **once we send one we cannot send another.** Therefor they must give a legitimate address or they will not receive the gift card. The procedure for mailing gift cards is outlined below (section 6.5)

6.4 Optimized VDT's

In addition to being allocated individual participants, FT's will also spend time at specific zones looking for any eligible participants, as opposed to looking for specific individuals. Every Friday FT's will receive a schedule for the upcoming week (Monday-Sunday) indicating which day's and times they are required visit a zone. VDT's will be allocated based on the staff availability provided at the beginning of the month. As with field tracking, FT's should never conduct fieldwork alone. It is the FT's responsibility to find an additional staff member from the pool to attend the shift with them.

Once at the VDT, the shift will operate similarly to follow up shifts on the study van. The FT and additional staff member will approach women in the zone, explain the study, and determine if a woman has participated/is eligible using the Follow Up/STI Tracking Sheet. If the women is eligible, staff should interview the participant using the same safety and interview protocols outlined above.

6.5 Relaying information to staff

Follow up shifts (on the van) will be running simultaneously with Field Tracking (both individual participant tracking and visit's to optimized VDT's). As a result, communication among staff members is key. We do not want to interview a women twice, or put staff in a potentially dangerous situation. If an interview is completed or if the FT learns something drastic about a participant (e.g., a participant has passed away, no longer wants to participate, is incarcerated, a stable contact indicates they no longer wish to be contacted etc.) they should either call or email study staff member who is in the office as soon as possible, who will then relay that information to staff on the van at that time or before the next shift.

6.6 Staff Meetings/Exchange of forms and supplies

FT's will meet along with study management weekly (TBD) in the SAPPHIRE Study Office (Hampton House Room 180A (624 North Broadway)). During these meetings, FT's will drop off completed forms, lab samples etc. and take any supplies they are running low on. In addition to exchanging supplies, FS's will also talk amongst themselves and with study management about how follow up tracking is going, and any ways they can improve.

6.7 Mailing Gift Cards to Participants

As forms are processed on a weekly basis, the study staff member entering data may learn that a participant completed a follow up interview over the phone. If this occurs, the staff member overseeing SAPPHIRE Study Gift Cards is responsible for mailing the gift card, along with the Gift Card Mail Letter (Annex 6B).A Follow-Up Appointment card should be included with the letter. In addition to mailing the letter, the staff member is also responsible for filling out a Mailed Incentive Form (to be kept with other voucher receipts in the locked study office).

6.8 Reimbursements

FT's are eligible to be reimbursed for food (**from establishments where an interview is conducted only**), and gas/tolls. In order to be reimbursed for food and tolls, staff must save the receipt. To keep track of miles, staff should download the app "GPS Tracks." The app costs $4 dollars but is reimbursable. GPS Tracks will allow you to easily log and store a pdf with a map of travel and total distance covered to be turned in for reimbursement. Instructions on how to use the app will be covered in your Field Tracking Training. Staff should turn in all receipts and mileage logs biweekly.