ABSTRACT

Title of Document:	Barriers and Facilitators to Needle Exchange Implementation: Perceptions of Community Stakeholders in Prince George's County, MD
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Prince George's County, MD has the second highest HIV incidence in Maryland. Approximately 14% of the county's living HIV/AIDS cases in 2009 were attributable to injection drug use. Prince George's County is one of only two jurisdictions in Maryland allowed to operate a needle exchange program, a proven intervention for lowering HIV incidence in injection drug user populations, but has yet to implement one. This study examined the perceptions of community stakeholders on possible barriers and facilitators to needle exchange program implementation. Qualitative interviews were conducted with 12 community stakeholders. Based on analysis of study themes, barriers and facilitators to program implementation were identified, feasibility of implementation was assessed, and recommendations were developed. Barriers outweighed facilitators more than 3 to 1, suggesting that program implementation is unlikely at this time. This research explores the history of needle exchange in Prince George's County, and can be used to inform future research.

BARRIERS AND FACILITATORS TO NEEDLE EXCHANGE IMPLEMENTATION: PERCEPTIONS OF COMMUNITY STAKEHOLDERS IN PRINCE GEORGES COUNTY, MD

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Statement of Research Problem

Human Immunodeficiency Virus (HIV), and the subsequent Acquired Immunodeficiency Syndrome (AIDS), has been a major public health issue in the United States since the early1980s (Centers for Disease Control and Prevention [CDC], 2010). Since the beginning of the HIV/AIDS crisis, our nation has come a long way in combatting this deadly disease. In 1985, the number of new cases of HIV in the United States peaked at 130,000 in a single year; by 2009 this number was down to 48,100 (CDC, 2010; Prejean, et al., 2011). Despite this progress in prevention, great disparities still exist for racial/ethnic minorities, and HIV incidence rates remain high in those who are marginalized from mainstream society, such as injection drug users. In 2010, there were 4,067 new cases of HIV amongst injection drug users, with more than 75% of these occurring within communities of color (CDC, 2011).

The Washington, D.C. metropolitan region, which includes the District of Columbia and its bordering counties in Maryland and Northern Virginia, has some of the highest incidence and prevalence rates of HIV/AIDS in the country (Kaiser Family Foundation, 2012). While the overall prevalence of HIV/AIDs in the United States is less than 1%, it is over 3% in the District of Columbia (Center for Non Profit Development and Pluralism, 2010; CDC, 2011). Higher rates of HIV/AIDS are also found in the greater Washington metropolitan region a compared to the rest of the nation (Center for Non Profit Development and Pluralism, 2010). In 2008, 28% of the living AIDS cases in this region were in the two Maryland counties bordering the District of Columbia (Maryland Department of Health and Mental Hygiene, 2010). Prince George's County, Maryland, which borders the District of Columbia to the Northeast, has the second highest HIV

prevalence in the capitol region after the District of Columbia, and the second highest prevalence in the state of Maryland after Baltimore City (Center for Non-Profit Development and Pluralism, 2010; Maryland Department of Health and Mental Hygiene, 2010). In 2009, 5,463 individuals were living with HIV/AIDS in Prince George's County, out of a total population of approximately 860,000 (Maryland Department of Health and Mental Hygiene, 2010).

The health disparities associated with HIV infection in Prince George's County are highlighted by the strikingly disproportionate incidence and prevalence rates in this area for communities of color and for marginalized groups. In 2009, the African American community incurred 86.5% of the HIV incidence in Prince George's County, and African-Americans represented 87.4% of the total living cases (Prince George's County Health Department, 2010). Also in 2009, approximately 14.6% of all living HIV/AIDS cases were attributable to injection drug use (Prince George's County Health Department, 2010). The majority of cases were attributable to sexual activities, with heterosexual intercourse accounting for 44.4% of living cases, and men who have sex with men accounting for 36.8% (Prince George's County Health Department, 2010).

Injection drug use has been decreasing as a mode of transmission in Prince George's County over the last decade, representing 15.9% of new HIV cases in 1999, and only 5.5% in 2009 (Maryland Department of Health and Mental Hygiene, 2010). Since the beginning of the HIV/AIDS crisis, injection drug use has represented 19% of the overall HIV diagnoses in Prince George's County (Maryland Department of Health and Mental Hygiene, 2010). This is a problem not only for the injection drug users (IDUs) themselves, but also for their sexual partners, and the children who are born to mothers

infected through injection drug use, because those contracting HIV/AIDS through injection drug use could spread the disease through sexual activity or through mother-to-child transmission (CDC, 2007).

The high rate of transmission in this population results from IDUs sharing needles with one-another during injection drug use events, which increases the risk of blood transfer from HIV-positive individuals (CDC, 2007). The drugs involved in needle sharing are usually illicit substances such as heroin, cocaine, or methamphetamine; but also include hormone treatments and silicone injections for individuals undergoing gender transformation, and in some cases, treatment for medical conditions (Paquette and Mellor, 2012). Still, while the type of drugs used during injection events may differ, the risk of contracting HIV, or other serious blood-borne diseases, is always present when users share needles with others (CDC, 2007).

The common issue with needle sharing is that it is often preceded and compounded by mitigating conditions, such as mental illness, poverty, homelessness, or in situations where individuals are marginalized and cannot access or purchase clean needles (Neale, Tompkins, Sheard, 2007; Paquette and Mellor, 2012). These social determinants may affect an individual's ability to access necessary drug treatment programs, as well as treatment for other conditions like HIV, as addiction and mental illness can hinder an individual's desire to seek treatment (Neale et al., 2007; Paquette and Mellor, 2012). In 2009, IDUs in Prince George's County newly diagnosed with HIV/AIDS were subsequently linked to care only 42.9% of the time, compared with 64.8% of the time for those whose mode of transmission was reported as men who have sex with men (MSM), and 68.8% of the time for those who reported being exposed

through heterosexual contact (Maryland Department of Health and Mental Hygiene, 2010). Thus, it is important to create evidence-based HIV prevention and treatment programs for IDUs that directly address the unique needs of this at-risk population.

There has been considerable research to support the notion that needle exchange programs (NEPs) are effective in reducing risk behaviors and HIV incidence rates, particularly among IDUs (Des Jarlais and Friedman, 1998; Strathdee and Vlhahov, 2001; World Health Organization, 2004; Strathdee et al., 2010). Needle Exchange Programs are one of the primary strategies of the Harm Reduction Model, a philosophical approach to public health initiatives that comprises a number of practical strategies to reduce the spread of HIV in at-risk populations, including needle exchange for IDUs (Harm Reduction Coalition, 2006). Needle exchange programs operate with a primary goal of reducing the risk of HIV and other infectious diseases spreading during injection drug use events (Harm Reduction Coalition, 2006). These are programs where IDUs can access clean, unused needles free of charge and without fear of prosecution. Currently, laws in many states prohibit the distribution of hypodermic syringes outside of a licensed pharmacy, as these can be considered drug paraphernalia (Clark and Fadus, 2001; Strathdee et al., 2011).

Other services, such as counseling and referrals, safer sex materials, and HIV prevention education are often offered through NEPs (Harm Reduction Coalition, 2006; Paquette and Mellor, 2012). The conditions and regulations affecting individual NEPs differ depending on the laws of the jurisdiction in which they operate, and the policies of the NEP operating organization, but the basic service of exchanging clean needles for used ones underlies the activities of most NEPs (Clark and Fadus, 2001; Harris, 2005).

In a global analysis of 45 NEP sites, the World Health Organization (WHO) found that 10 of these programs were effective in reducing the HIV incidence rate among IDUs, and 23 additional programs had a significant impact on reducing risk behaviors, such as the sharing of syringes (World Health Organization, 2004). This international review used the Bradford-Hill Criteria, which outlines a set of nine conditions that must be met to establish causality between an intervention and a health outcome, to evaluate the effectiveness of NEPs worldwide (Woodack and Cooney, 2006). The reviewers found overwhelming evidence that not only are NEPs effective at reducing HIV risk behaviors and HIV incidence, but they are also cost-effective when compared to the health-care and related costs of maintaining and treating individuals with HIV/AIDS (Wodack, Cooney, 2006).

Studies focusing specifically on NEPs in the United States have also found these programs to be cost-effective (Lurie, Gorsky, Jones, Shomphe, 1998; Harris, 2005; Belani and Muennig, 2008). An analysis of a NEP in Philadelphia, for example, found that the cost of providing clean needles to approximately 6400 IDU clients was approximately $371,000, and resulted in an estimated cost of $2, 757 per case of HIV averted (Harris, 2005). When compared to the cost of HIV medication alone, which can range from $10,000 to $15,000 per case annually, the cost savings associated with preventing HIV through needle exchange in this instance is clear (World Health Organization, 2002).

Other U.S. studies found that the presence of a NEP greatly reduced the HIV-related risk behaviors of injection drug users in a given area, particularly the sharing of used needles, the use of clean needles, and hygienic practices like using bleach kits to

clean needles and alcohol swabs to clean the skin (Bluthenthal, Kral, Gee, Erringer, Edlin, 2000; Hagan and Thiede, 2000; Braine, Des Jarlais, Ahmad, Purchase, Turner, 2004; Belani and Muennig, 2008). In Seattle, a prospective cohort of 2,000 injection drug users found 30% reduced odds of needle sharing for participants in a needle exchange program versus non-participants after one year of follow-up (Hagan and Thiede, 2000). Another prospective cohort study of 340 injection drug users in Oakland, California found a 60% decrease in syringe sharing at a 6-month follow-up for needle exchange participants, and a 2.68% increased odds of quitting sharing needles compared to those who did not use the program (Bluthenthal et al., 2000).

In addition to reducing risk behaviors, NEPs have been found to be effective in lowering the HIV incidence rates among IDU populations in the United States (Kaplan and Heimer, 1992; Des Jarlais et al., 2010). In New York City in 1992, the addition of NEPs into HIV prevention interventions for IDUs saw a 3.7% decrease in the HIV incidence rate of this population over the course of 4 years (Des Jarlais et al., 2010). In the first federally funded study of NEP effectiveness, researchers in New Haven, Connecticut found that the implementation of a NEP resulted in a 33% decrease in HIV incidence amongst IDUs in that city (Kaplan and Heimer, 1992).

In the 1990s, as this research emphasizing the effectiveness of NEPs began to emerge, exemptions were made to the Maryland state drug paraphernalia law to provide immunity for NEPs in Baltimore City in 1994, and in Prince Georges County in 1998, the two regions in the state with the highest HIV rates and the highest rates of injection drug use (Burris, 2001; National HIV/AIDS Clinician Consulting Center, 2011). The

Baltimore City program was officially opened in 1995, and has been operating successfully for the past 17 years (Baltimore City Department of Health, 2012).

Despite being granted immunity from the Maryland state drug paraphernalia law, Prince George's county has yet to implement a NEP. There are three NEPs operating within the District of Columbia, which are the only free resources for IDUs in the Washington metropolitan region who wish to obtain clean needles without visiting a pharmacy, or fearing arrest. Thus, for an area which comprises a total of 1,403 square miles and includes approximately 4,500 IDUs, there are only three NEPs (U.S. Census Bureau 2010; The Center for Non-Profit Development and Pluralism, 2010; District of Columbia Department of Health, 2010).

In other municipalities around the United States, there have been several barriers preventing the establishment of NEPs, as well as several facilitating factors which contribute to their success. While often related to operational logistics such as funding, these barriers and facilitators are also often socio-cultural in nature; wherein the level of community support for such programs is highly instrumental in their success or their failure (Downing, Riess, Vernon, Mulia, Hollinquest, McKnight, Des Jarlais, Edlin, 2005). The socio-cultural factors related to NEP implementation include morals and values related to religiosity, perceptions about drug use, and level of community concern over HIV (Gent, 2000; Downing et al., 2005; Tempalski, Flom, Friedman, Des Jarlais, Friedman, McKnight, Friedman, 2007). The presence of HIV/AIDS advocacy organizations, high proportions of homosexual couples, and high levels of cooperation across community sectors have been shown to be facilitating factors to NEP implementation in many communities around the U.S. (Gent, 2000; Downing et al.,

2005; Tempalski et al., 2007). However, community members in areas with high property values, those belonging to religious organizations, and many in affluent African-American communities have been ardently opposed to NEPs in other communities around the country (Thomas and Crouse Quinn, 1993; Gent, 2000; Wenger, Arreola, Kral, 2011; Heller and Paone, 2011). These three groups are highly represented within Prince George's County's demographics, suggesting their presence may influence the implementation of a NEP. These potential barriers and facilitators to the development of a NEP in Prince George's County may be present, but the researcher is not aware of any studies conducted to-date to investigate them.

With the second highest HIV rate in the Washington metropolitan region, the need to reduce the spread of the disease in Prince George's County is great. This is a particularly pressing issue in the IDU population, who experience higher rates of HIV transmission than the rest of the general public in the county (Maryland Department of Health and Mental Hygiene, 2010). It is important to understand what factors contribute to preventing or delaying the start of a NEP in this community, as well as what factors may be useful in its facilitation, so as to ascertain the feasibility of operating such a program, and to identify strategies public health advocates and officials can utilize to better prevent HIV transmission in the IDU population. This study addresses the problems identified above by investigating and explaining barriers and facilitators to NEP implementation in Prince George's County.

Research Question and Specific Aims

Research Question:

In order to better understand the lack of implementation of a NEP in Prince George's County after its exemption to the Maryland state drug paraphernalia law, and whether or not it is feasible for such a program to exist, the following research question was addressed:

- Q1: What are the barriers and facilitators to implementation of a needle exchange program in Prince George's County?

Because these barriers and facilitators have been ongoing since the exemption was first granted in 1998, data was collected primarily through qualitative, in-depth interviews with community stakeholders who have a breadth of knowledge and experience working in the county. These stakeholders represent diverse and relevant sectors of the community, including elected officials, law enforcement, public health professionals, drug treatment counselors, religious leaders, and members of neighborhood associations. The information these stakeholders offer is valuable, not only because of the breadth of their experience, but also because of their involvement and familiarity with the larger community.

Specific Aims:

Three specific aims were developed in association with this study. These are:

Aim #1: Identify barriers and facilitators to NEP implementation that may exist in Prince George's County

Aim #2: Assess the feasibility of implementing a NEP in Prince George's County

Aim #3: Develop recommendations for local policymakers and public health officials to address the HIV prevention needs of Prince George's County's IDU population

Hypotheses:

As this is a qualitative study with a relatively small sample of community stakeholders, hypotheses were not generated prior to data collection. Instead, the Grounded Theory Model (GTM) was employed to generate themes and potential hypotheses through the data analysis process. The GTM is a model for qualitative data analysis that promotes inductive extraction of themes, which may inform the development of hypotheses and theory (Glaser and Strauss, 1967). Thus, this study presents a future opportunity to generate hypotheses about the nature of barriers and facilitators to NEP implementation in Prince George's County.

Study Significance

An exemption to the Maryland State drug paraphernalia law was requested, and granted to Prince George's County, suggesting that on some level, political motivation to implement a NEP has existed there. From a public health standpoint, the need to reduce HIV transmission, as well as the transmission of other serious blood-borne diseases is

imperative. From a social justice standpoint, the needs of IDUs in the county must be addressed through evidence-based programs that directly target the unique needs of this at-risk population.

This study sought to understand the contextual factors necessary to predicate the existence of a NEP in Prince George's County. Through such an understanding, the work of public health professionals seeking to reduce the incidence rate of HIV in this county may be better informed. By identifying the barriers to implementation of a NEP, specific strategies for tackling these barriers have been developed.

One outcome of this study is recommendations made for appropriate stakeholders in Prince Georges County, including policy makers and the Prince George's County Health Department. These recommendations are listed in further detail in Chapter 5, and include topics for further research, ideal participants for the formation of a NEP task force, strategic partners within Prince George's County and the state of Maryland, and more. In addition, based on the nature and the extent of barriers and facilitators identified through data collection, the feasibility of implementing a NEP in Prince George's County was assessed for this study. This feasibility of a NEP in Prince George's County is another outcome of this study, and is discussed in further detail in Chapter 5.

In terms of a greater public health impact, recommendations from this study can be used to inform future research on the operational and socio-cultural barriers and facilitators to implementing a NEP in a jurisdiction similar to Prince George's County. Analysis of the qualitative data from this study may be used in the future to generate hypotheses, which can then be tested through more rigorous studies with larger sample sizes. While findings from this study will not be generalizable, valuable information from

community stakeholders can be used as a guide when conducting future research on this topic.

Definition of Study Terminology

Injection drug user (IDU) refers to an individual who injects substances through hypodermic needles and syringes into their veins for a desired effect. These substances can include addictive drugs such as heroin or cocaine, hormone treatments or silicone injections for individuals undergoing gender transformation, or therapeutic substances to treat medical conditions (e.g. insulin injections for diabetics). Because higher-income IDUs can generally afford to purchase clean syringes from pharmacies or other sources, the focus of this study is for IDUs experiencing poverty, homelessness, mental illness, or some combination of the three.

Needle exchange refers to the act of an injection drug user returning used hypodermic syringes to an authorized program in exchange for clean, unused syringes. This is also often referred to as syringe exchange.

Needle exchange program (NEP) is an entity that provides a physical space wherein an injection drug user can access clean injection supplies free of charge and without fear of prosecution. These supplies can range from unused needles and syringe bodies to "the works," including bleach, cottons, cookers, and antiseptics. Although some needle exchange programs operate illegally "underground," the needle exchange programs referred to in this study are staffed by trained individuals, and are regulated by local

public health authorities. These are also commonly referred to as syringe exchange programs, or SEPs.

Community stakeholder refers to an individual with extensive familiarity and knowledge of the community setting in Prince George's County. This individual will have high levels of interaction with the greater community, understanding of the social norms and values therein, and will also have a familiarity of the history of HIV/AIDS and injection drug use in Prince George's County.

Community sector refers to a specific facet within the structure of a community. While there are a multitude of sectors within every community, those that were deemed relevant for use in this study include elected officials, law enforcement, religious institutions, drug treatment centers, public health workers, and neighborhood associations.

Elected officials will be those elected into local public office in Prince George's County. This can include county councilmembers, mayors, town councilmembers, and city councilmembers.

Law enforcement officials will be those representing local law enforcement organizations. This can include the the police department of any local municipality. Officials can be from any level of ranking within relevant law enforcement organization.

Public health professionals will be those who are aware of the inherent risks of needle sharing in Prince George's County, and of HIV/AIDS-related issues. These individuals might be health officials working for the county department of health, administrators from a local health care center or hospital, or those working in an HIV-prevention or advocacy organization.

Drug treatment counselors will be those who work at methadone clinics or other drug treatment centers within the county. Ideally, these stakeholders will have experience working with HIV positive clients.

Neighborhood association representatives are those who represent one of the many neighborhood or community associations in the county.

Religious institutions representatives from this sector will be religious leaders within identified religious organizations in the county. This sector includes representatives from all denominations.

Harm Reduction is an approach to public health practice, of which needle exchange is one of several strategies. The Harm Reduction Model posits that risky behaviors are inevitable in any society and for any health risk, and thus abstinence approaches are unrealistic. Instead, harm reduction seeks to minimize the dangers associated with risky behaviors, such as injection drug use, without necessarily seeking to halt these behaviors (Harm Reduction Coalition, 2006). This is also often referred to as risk reduction.

Social Ecological Model is a theoretical model for health behavior change that posits there are multiple levels of influence over any given health behavior. These levels of influence include policy, community, organizational, and intra-personal, and interpersonal (McLeroy, Bibeau, Steckler, Glanz, 1988).

Major Study Themes are those themes identified through the data analysis process that were most frequently referenced mentioned by a majority of stakeholders, and that could serve as umbrella categories for other, related sub-themes.

Chapter 2: Background

Theoretical Models

Review of Relevant Literature

History of Needle Exchange in Maryland

Theoretical Principles

This study was based on two central theoretical principals. The first is the Harm Reduction Model, a philosophical approach to public health practice; the second is the Social Ecological Model, an explanatory theory of health behavior. Each of these models are highly relevant to public health initiatives in marginalized populations, and thus lend meaning and direction for this study. These were the theoretical blocks upon which the research in this study was built.

The Harm Reduction Model

The Harm Reduction Model (HRM) is an approach to conducting public health interventions and initiatives. It is based on the assumption that risky behaviors, such as injection drug use, are inevitable in any society, and that complete abstinence in a population is not a realistic public health goal (Jarvinen, 2008; Lushin and Anastas, 2011). Instead, the framework of the HRM prioritizes the minimization of negative effects resulting from engagement with these risky behaviors, whilst simultaneously accepting that some risk is bound to be incurred (Riley et al., 1999). The HRM is rooted in principles of social justice (Lushin and Anastas, 2011). Historically, harm reduction strategies and programs have been targeted at populations, like IDUs, who are on the outskirts of society, for whom traditional treatment and prevention services are not always as accessible (Harm Reduction Coalition, 2006).

For IDUs, harm reduction activities focus on eliminating the spread of blood-borne infectious diseases such as HIV and Hepatitis C, as well as minimizing risk for skin infections and overdoses related to injecting drugs. Needle exchange programs are a

central component of harm reduction strategies for IDUs. Other strategies include safer injection facilities (physical spaces in which users can inject drugs with safe materials) and clean needle vending machines, tools for HIV prevention that have been used extensively and with great success throughout Europe and in other parts of the world, but not in the United States (Lushin and Anastas, 2011; Wenger et al., 2011; Harm Reduction Coalition, 2006).

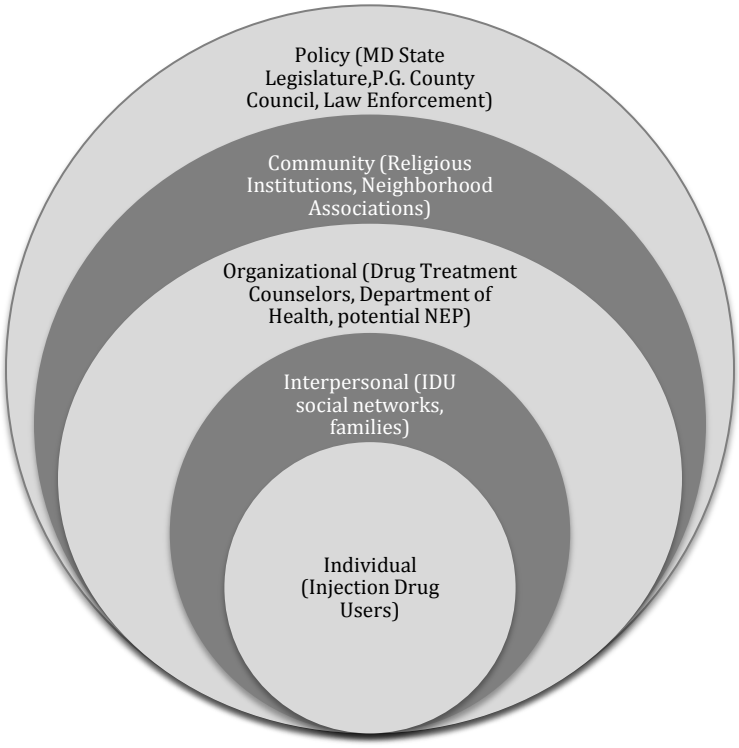
The HRM is a central building block for this study because it epitomizes the philosophical importance of providing services uniquely tailored to the needs of IDUs. It is closely linked to the Stages of Change behavioral theory, which posits that behavior change interventions are more successful when an individual's readiness to change is taken into account (Procheska and DiClemente, 1984). Indeed, the HRM emphasizes the importance of "meeting people where they are at," rather than dictating to an individual what type of treatment would work best for them (Lushin and Anastas, 2011). Thus, if an individual is not ready to commit to abstaining from drug use, the Harm Reduction Model predicates that the negative effects of drug use can be minimized until the person reaches a readiness to change stage (Lushin and Anastas, 2011).

Social Ecological Model

Bronfenbrenner first developed an ecological model for explaining human behavior in 1977, acknowledging the influence of environmental factors over an individual's development (Brofenbrenner, 1977). This model was later adapted by McLeroy et al. in 1988, to specifically inform health promotion initiatives (McLeroy, Bibeau, Steckler, Glanz, 1988).

The Social Ecological Model (SEM) of health behavior posits that for any single health behavior, there are multiple levels of influence, including the individual, the interpersonal, the organizational, the community, and the policy levels (McLeroy et al., 1988). These levels of influence, as they pertain specifically to IDUs in Prince George's County, are displayed in Figure 1 below.

Figure 1: The Social Ecological Model: Levels of influence determining an injection drug user's use of a needle exchange program in Prince George's County



The SEM is a strong building block to examine the issues of NEPs and HIV prevention in Prince George's County, given that it comprehensively acknowledges the context within which a given health behavior, in this case sharing needles during injection drug use events, takes place (McLeroy et al., 1988). This model takes into

account the built environment as a behavioral setting, as well as power structures, behavioral control, community norms and beliefs, interpersonal influences, and intrapersonal perceptions and beliefs as predictors of health behavior and health behavior change. Previous studies have been conducted which have shown that using the SEM in an intervention can have an effect in reducing risk behaviors among groups at risk for HIV infection, as well as in increasing injection drug user's adherence to treatment programs (Larios et. al, 2008; Havens et. al 2009).

Beyond the model's effectiveness for use in interventions among injection drug users, it may also be effective in examining barriers and facilitators to implementing a NEP. Community and policy factors influence whether or not a NEP can successfully operate, as well as how, where, and under what circumstances it operates. Previous studies have shown that the politics and socio-cultural characteristics in an area will have a greater influence over the existence of a NEP there than the need for services in that region (Gent, 2000; Tempalski et. al, 2007). Studies have also shown that the way in which a needle exchange program incorporates various community stakeholders, such as religious leaders, community health practitioners, and local legislatures in its implementation stage is related to the success of that program (Downing et.al, 2005). Therefore, utilization of the Social Ecological Model to incorporate all levels of influence over needle exchange behaviors is essential to fully understand the context of the situation and to effectively design and implement an intervention to increase needle exchange.

When examining the potential for NEPs in Prince George's County, components of each level of influence must be examined. Specifically, at the policy level, the

Maryland State Legislature has worked to eliminate legal barriers to the implementation of such a program by exempting Prince George's County from the state drug paraphernalia law (Maryland General Assembly, 1998). Decisions about funding for a NEP would also likely be made at the policy level, as costs associated with NEPs are often supported, at least in part, by local governments (Paquette and Mellor, 2012). The policy level may also include law enforcement officials, whose cooperation is likely to be central to the operation of the program, insofar as both clients and employees of the program would be safe from arrest (Strathdee et al., 2011; Clark and Fadus, 2001).

On the community level, social norms and neighborhood characteristics may be highly influential over the success or failure of a NEP. Community leaders, such as those in religious institutions and those representing neighborhood associations, would fall into this category of community level influence. As demonstrated in previous studies, support from key community leaders is likely to be instrumental in the program being accepted in the community (Buchanan, Shaw, Ford, Singer, 2003; Downing et al., 2005; Kelley and Paone, 2011).

On the organizational level, individuals of influence would be those who are responsible for developing and implementing the program. This would likely include the Prince George's County Health Department, as well as program staff members like drug treatment counselors, HIV prevention advocates, and others providing direct support to the operations of the NEP.

IDUs' interpersonal relationships, such as those created within their social networks and families, have been found to be related to their HIV risk behaviors, including their use of NEPs (Constebader, Astone, Latkin, 2006). Because NEPs have

been shown to reduce risk behaviors in IDU populations, the presence of such a program would likely affect such health behaviors as sharing needles, and exchanging old needles for new ones (World Health Organization, 2004).

The intrapersonal level of influence has to do with the IDUs themselves, and how they engage with safer injection in Prince George's County. The presence or absence of a NEP, as well as their perceptions of stigma and interactions with the law enforcement system might affect their HIV risk behaviors (Larios et al., 2008; Strathdee et al., 2011).

Review of Relevant Literature

Introduction to Literature Review

In order to better understand the context within which a NEP would be established in Prince George's County, it is important to review the facilitators and barriers which have been outlined in the implementation of previously established NEPs in other communities around the country. It is also important to understand the larger political landscape within which these programs have operated, and the history and experience of community members who have interacted with them.

Needle exchange is perhaps one of the most controversial public health intervention methods in the United States today. Previous studies have examined the many political and socio-cultural complexities involved with this harm reduction strategy to combat HIV in the IDU population. These studies are outlined below, and focus on the politics of needle exchange, the role of community acceptability in NEP success, the relationship between NEPs and religion, and the historic interplay between communities of color, drug use, and HIV. Three studies that employed qualitative methods to assess the

perceptions of community stakeholders are also included, because of their direct methodological applicability to this research.

Politics and needle exchange

Despite the proven effectiveness of NEPs on HIV risk behaviors and HIV incidence, particularly among IDUs, the policies surrounding these issues in the United States have not always been reflective of a prioritized agenda to combat the disease in IDU populations (World Health Organization, 2004; AIDS Action Policy Brief, 2007; Barr, 2011). Indeed, the history of needle exchange policies in the United States has been complicated and often contentious. On a federal level, these programs operate in clear contradiction to the United States' "War on Drugs," a political campaign which includes a strict stance against drug use, distribution, and paraphernalia (Clark and Fadus, 2001). In 1989, amid the alarming HIV/AIDS crisis and a growing body of research indicating the effectiveness of NEPs, the U.S. Congress voted to ban the use of federal funds for operating NEPs (AIDS Action Policy Brief, 2007). Although briefly lifted in 2009, the funding ban for NEPs was re-instated at the end of 2011, and still persists to this day (Barr, 2011).

National surveys ascertaining Americans' perceptions on needle exchange have led to inconsistent results. In an analysis of 14 different national polls regarding needle exchange programs, Vernick et al. (2003) found no consensus of opinion regarding NEPs. In fact, this study found that Americans' opinions on needle exchange were highly contingent upon the wording of the survey question. If a question contained wording that described needle exchange in a positive light, Americans were more likely to indicate

their support for NEPs, whereas questions using negative wording resulted in Americans being more likely to indicate opposition to the very same programs. This high variability of opinion, based on question wording and underlying implications, suggests that persuasive forces might easily influence individuals' opinions on needle exchange. (Vernick, Burris, Strathdee, 2003)

Other studies have found that elected officials might be similarly influenced by their constituents (Buchanan et al., 2003; Downing et al., 2005; Shaw, 2006). Despite personally agreeing with the underlying principles of NEPs, some elected officials might be swayed by the outspoken opposition of their constituents. In Springfield, Massachusetts, despite a proposed NEP having the initial support of the mayor, the Director of Health and Human Services, the Chief of Police, the Public Health Council, and the City Council, a group of citizens were able to bring the decision of implementing a NEP to a city referendum through the influence of their congress members (Buchanan et al., 2003). Additionally, Downing et al. (2005) posited that local governments' fear of criticism from community members had stalled, but not halted implementation of NEPs in the cities of Baltimore, Boston, and Honolulu (Downing et al., 2005). Research on the policy making process has suggested that policy makers are most willing to address an issue when salience within the community is high and conflict within the community is low, meaning they are more likely to address issues that are more popular (Longest, 2010). This suggests that despite having the legislative power to sanction and implement such programs, elected officials are still largely influenced by their constituents' opinions and thus decisions regarding NEPs may ultimately be up to the community.

Community support

A broad body of literature exists to suggest that a community's support of or opposition to a NEP can be crucial to the program's success (Gent, 2000; Downing et al., 2005; Tempalski et al., 2007). The presence of a NEP in a given area is often predicated by the presence of politically active citizens or advocacy organizations, and the vocal opinions of the public can have an impact on whether or not policies supporting NEPs are enacted (Buchanan et al., 2003; Tempalski et al., 2007). The earliest NEPs in the United States were started by HIV prevention activists, many of whom chose to operate illegally, acting to curb the spread of HIV before laws were enacted to protect them and their participants from prosecution (Sherman and Purchase, 2001; Heller and Paone, 2011). Gradually, the legality of these programs began to grow, but the involvement of citizen activists has almost always played a role in their proliferation (Heller and Paone, 2011). The history of NEPs in New York City, for example, has been defined by the ardent and unrelenting work of NEP activists who first defied the law, then worked within it to ensure that NEPs became sustainable in that city (Heller and Paone, 2011). While top-down implementation of NEPs from government authorities has not necessarily been unsuccessful, by far the most successful and sustainable models are those whereby a NEP is started by citizen activists and carried to fruition through coalitions formed from reaching across various sectors of the community (Downing et al., 2005).

Indeed, communities with successful NEPs are more likely to have highly active populaces (Downing et al., 2005). However, the vocal opinion of a handful of politically active citizens does not always represent the best interests of everyone in the community. Because they are a marginalized group, outspoken opposition from their more

empowered neighbors can easily override IDUs' interests. This was the case in Springfield, Massachusetts, where a small group of individuals was able to use political influence to supersede the democratic process in order to prevent a NEP from forming in that city (Buchanan et al., 2003). So, community activism has acted as both a facilitator as well as a barrier in the development of a previous NEP in that city.

In a review of 96 of the largest U.S. metropolitan areas, Tempalski et al. (2007) found several community predictors for the presence or absence of a NEP. Positive predictors included high percentages of men who have sex with men (MSM), presence of a chapter of an HIV advocacy organization, and a higher percentage of college-educated residents. These findings may suggest that NEPs are more likely to be successful in areas with potential community solidarity and concern for HIV/AIDS issues, in areas that have some sort of advocacy networks, and in areas with a more educated population. (Tempalski et al., 2007)

Gent (2000) found similar results in an analysis of 64 major U.S. cities. In a bivariate regression analysis, the author found the percentage of same-sex households, the percentage of religious traditionalists, and the percentage of political conservatives in a city to be the three strongest predictors of whether or not a NEP existed there. In this study, the percentage of same-sex households was also a positive predictor of NEP existence (i.e. the higher the percentage of same-sex couples, the more likely a city was to have a NEP), whereas percentages of religious traditionalists and of political conservatives were negative predictors. Again, this suggests that the socio-cultural factors within an area, such as concern over HIV and religiosity, are likely to play a role in determining the existence of a NEP. (Gent, 2000)

Because of the negative perception of IDUs in many communities, resistance to NEPs may be present in some communities that do not wish to cater to or attract these individuals to the neighborhood. A survey conducted in Baltimore City, Maryland, found that 72% of respondents felt starting a NEP would attract IDUs to the area (Keyl, Gruskin, Casano, Montag, Junge, Vlahov, 1998). Similarly, community stakeholders in San Francisco expressed worry about the impact of a safer injection facility on the development of commerce and the overall goals of the community, and were concerned that the presence of a NEP would tarnish the image of the neighborhood (Wenger et al., 2011). In New York, opponents to NEPs spoke out about their concern over the impact of these programs on the local real estate market (Heller and Paone, 2011).

Another concern from community members is the public health threat posed by the potential increase of hypodermic needles in the community. Although many NEPs operate under a one-to-one policy, wherein a NEP participant is granted a number of unused needles equal to the number of used needles they are returning, this is not always the case (Ksobiech, 2004). Indeed, Macalino et al. (1998) have highlighted the fact that inconsistency in the laws and regulations regarding NEP needle disposal have the potential to make for an unsafe community environments (Macalino, Springer, Rahman, Vlahov, Jones, 1998). Still, Ksobiech's (2004) review of 26 studies examining needle return rates found that this concern is mostly unfounded, as NEPs did not increase the amount of needles in the communities included in the study (Ksobiech, 2004).

In each of these studies, the predictors associated with community demographics and perceptions were stronger for NEP presence than the overall rates of HIV, as well as the rate of HIV transmission in IDU populations. Indeed, need for harm reduction does

not seem to be significantly related to the presence of such programs (Gent, 2000; Tempalski et al., 2007).

Religion and needle exchange

Buchanan et al. (2003) posit that while supporters of NEPs often tend to frame their position based on empirical, scientific evidence, those who oppose such programs often frame their arguments in the context of social norms and ethics (Buchanan et al., 2003). One of the primary arguments against the implementation of needle exchange programs is that such programs promote the immoral act of injection drug use behaviors, and are, by extension, also immoral (Gent, 2000). This concern over immorality has been especially prominent in religious circles, where many of the moral teachings specifically prohibit drug use behaviors (Clark, 2000).

In a qualitative study, Philbin et al. (2008) found that while a handful of community stakeholders representing religious institutions exhibited positive attitudes towards harm reduction methods as a means of disease prevention, most saw harm reduction as something dangerous. Additionally, religious stakeholders in this study were more undivided in their opposition to NEPs than were stakeholders from other sectors of the community. (Philbin, Lozada, Zuniga, Mantsios, Case, Magis-Rodriguez, Latkin, Strathdee, 2008)

Religious groups who oppose these programs frequently employ the argument that NEPs encourage or increase drug use. The position that harm reduction might reduce the risks or harms associated with certain behaviors can be problematic for these groups, as they feel it is misleading to convey the message that drug use can be made safe in any

way (Clark, 2001). However, several studies have found that NEPs don't actually increase drug use, and several more have found that these programs can often serve as a bridge to treatment for drug users who wouldn't otherwise seek help (Clark, 2001; Lushen and Anastas, 2011). As research continues to emerge proving the effectiveness of NEPs at combating HIV risk behaviors in IDU populations, there are those who feel that the attitudes of some religious institutions have begun to shift towards moderate acceptance (Freimuth, Crouse Quinn, Thomas, Cole, Zook, Duncan, 2001). Still, the research listed above lends credence to the notion that religious groups are likely to voice concerns against the implementation of NEPs in their communities.

This opposition from religious circles may have the potential to influence policy decisions. Heller and Paone (2011) posit that with the morally controversial decision of whether to implement a NEP in New York City, religious leaders played a central role in the political debate, arguing against the programs (Heller and Paone, 2011). Also, examining the major predictors of NEP existence in 64 cities around the U.S., Gent (2000) found that the percentage of religious traditionalists living in an area was one of the four most significant negative predictors. Gent (2000) defined religious traditionalists as "those who push for a return to more traditional, moralistic family values" (Gent, 2000, p. 132). This study found that the higher the percentage of religious traditionalists living in a given city, the less likely a NEP was to exist in that city (Gent, 2000). These findings suggest that the opinions and feelings of religious groups may be influential over local harm reduction policies.

Race, history, and needle exchange

In 1998, when immunity to the Maryland state drug paraphernalia law was first granted for Prince George's County, State Senator Gloria G. Lawlah indicated that community resistance, particularly from affluent African-American residents, might pose a barrier to the establishment of such a program (Pierre, 1998). Indeed, in previous studies of U.S. cities with NEPs, the opposition or support of the African-American community, particularly community leaders such as clergy members and politicians, was deemed crucial to the success or failure of the program (Tempalski et al., 2007; Downing et al., 2005; Heller and Paone, 2011). Since the beginning of the HIV/AIDS crisis, African-American communities have had mixed reactions to implementation of NEPs, with many community leaders speaking out against them (Thomas and Crouse Quinn, 1993).

One of the reasons for this opposition to NEPs within the African-American community may be mistrust (Thomas and Crouse Quinn, 1993; VanderWaal, Washington, Drumm, Terry, McBride, Finley-Gordon, 2001; Freimuth et al., 2001). Indeed, large portions of the history of public health research in African-American communities have been sordid and unethical, and legacies of such injustices as the Tuskegee Syphilis Study are not easily forgotten (VanderWaal et al., 2001). Because public health institutions and authorities often endorse NEPs, these programs might be seen as untrustworthy in some African-American communities (VanderWaal et al., 2001).

Additionally, the drug use epidemic has been viewed in many African-American communities as an equal or greater threat than that of the HIV epidemic (Thomas and Crouse Quinn, 1993). Drug use has been perceived as a major affliction, as it is often

related to unemployment, homelessness, police brutality, incarceration, and poor health outcomes (Clegg Smith, Lefevre Lillie, Latkin, 2007; Woods, 1998). In New York City in the early 1990s, prominent African-American citizens spoke out fervently against the development of NEP pilot programs, citing the debilitating effects of drug use on the African-American community in that city (Heller and Paone, 2011). There are those who have accused NEPs of facilitating community depredation, and even genocide, by proliferating destructive drug use behaviors (Heller and Paone, 2011). Substance use has also been found to exacerbate the negative effects of HIV, as it speeds up the progression of the disease and hinders optimal self-care (Volkow and Montaner, 2011). For these reasons, NEPs may be perceived as inadequate solutions to the problems of injection drug use, as their primary goal is not to halt drug use, but rather to facilitate these behaviors in such a way that the risk of spreading HIV is reduced (Thomas and Crouse Quinn, 1993).

HIV-related stigma and stigma against drug users are also important factors to consider when deliberating NEP implementation in African-American communities. While stigma can be a factor in any community, a nationally representative survey found that African-American respondents were more likely than their Latino and White counterparts to posit that people living with HIV were faced with considerable discrimination (Kaiser Family Foundation, 2004). In a qualitative study comprised of focus groups with African-American IDUs, respondents indicated their awareness of the larger African-American community's strong opposition to harm reduction programs, citing that community members "don't want it to look like everybody is using drugs" (VanderWaal et al., 2001, p. 743). Research has shown that African-Americans are more likely than other racial groups to obtain needles from sources other than NEPs, an effect

that was consistent even in areas where possession of needles obtained from a local NEP were decriminalized, which may support the notion that there is a considerable amount of stigma associated with using these programs (David, Burris, Kraut-Becher, Lynch, Metzger, 2005). Indeed, injection drug use carries its own implications for stigma, which may be compounded upon by the additional stigma associated with HIV infection (VanderWaal et al., 2001).

Examining the perceptions of community stakeholders

Three studies have looked specifically at the perceptions of community stakeholders regarding harm reduction methods for injection drug users (Downing et al., 2005; Philbin et al., 2008; Wenger et al., 2011). On the U.S.-Mexico border, Philbin et al. (2008) assessed community acceptability of potential NEPs, as well as needle vending machines and safer injection facilities (Philbin et al., 2008). In San Francisco, Wenger et al. (2011) examined acceptability of a safer injection facility (Wenger et al., 2011). Downing et al. (2005) examined the perceptions of stakeholders from 17 cities throughout the United States on the conditions which facilitated NEP implementation, as well as the barriers and difficulties faced by NEPs in those cities (Downing et al., 2005).

In each study, stakeholders were chosen because of their interaction with sectors of the community critical to implementation of harm reduction programs. These stakeholders included health professionals, religious leaders, legal experts, law enforcement officials, pharmacy staff, and drug rehabilitation workers, representatives from neighborhood and business associations, elected officials, school officials, and community activists (Downing et al., 2005; Philbin et al., 2008; Wenger et al., 2011).

In terms of potential barriers and facilitators to NEP implementation, the political climate was found to be an important factor in the development of NEPs in each of the three studies. Several stakeholders in the Philbin et al. (2008) study cited the political environment as a major barrier to implementation of NEPs and other harm reduction programs (Philbin et al., 2008). They felt that the government was unwilling or unable to support such programs, although the reasons for this lack of government interest varied (Philbin et al., 2011). In San Francisco, respondents from the office of an elected official expressed concern that they or other city workers would be responsible for the legality of operating a safer injection facility, and that they might be liable for prosecution should the program be found unlawful (Wenger et al., 2011). Downing et al. (2005) found similar concerns of job loss amongst community stakeholders in public office, fear of cuts in funding for other programs in the HIV prevention and drug treatment sectors, and a general fear of arrest for supporting or participating in legally precarious programs (Downing et al., 2005).

Another major finding from these studies was a general wariness of harm reduction strategies amongst stakeholders (Philbin et al., 2008; Wenger et al., 2011). This wariness was manifested in a lack of confidence in the effectiveness of harm reduction in preventing disease amongst injection drug users, as well as in the belief that safe injection programs would cause more harm than good (Philbin et al., 2008; Wenger et. al, 2011). In San Francisco, stakeholders were concerned that the existence of a safer injection facility would reflect poorly on the neighborhood, insofar as it would attract "undesirable" people and undermine commerce and other community development goals (Wenger et al., 2011).

Stakeholders were able to provide suggestions as to how a harm reduction program for injection drug users might be more feasible in their jurisdictions. In each of the studies, stakeholders suggested education as a means of combatting misconceptions and fears surrounding harm reduction, both in the general community as well as in community leaders (Philbin et al., 2008; Wenger et al., 2011). Participants in the Wenger et al. (2011) study suggested that evidence of harm reduction'ss success in other cities be brought in to San Francisco to alert community members to the benefits of such programs (Wenger et al., 2011). In the Philbin et al. (2008) study, stakeholders posited that steps should be taken to educate elected officials and religious leaders in addition to lay community members. Other stakeholders in the Philbin et al. (2008) study suggested a legal framework within which the laws surrounding any harm reduction program, whether it be a NEP or otherwise, would be clearly stated to decrease the precariousness of NEP legality (Philbin et al., 2008). Downing et al. (2005) found that successful NEPs were those that took into consideration the culture, norms, and goals of the community within which they were implemented (Downing et al., 2005). This finding was similar in the Wenger et al. (2011) study, where stakeholders had suggested that they might be more open to the prospect of a harm reduction program, if such a program were to incorporate and mirror other goals held by the community (Wenger et al., 2011).

History of Needle Exchange Legislation in Maryland

The State of Maryland takes a strict stance on possession of drug paraphernalia in Article 27 of the Annotated Code of Maryland. The law explicitly criminalizes trace amounts of any illicit substance, and possession of a hypodermic syringe or needle with

traces of any substance is cause for arrest (Center for Law and the Public's Health, 2004). Pharmacists are permitted to sell needles to those who request them without a prescription, but they must ask for reason of purchase; and the purchaser must provide their name, address, and a form of identification (Center for Law and the Public's Health, 2004). Thus, under Maryland State law, obtaining clean needles may be difficult due to cost, as well as fear of arrest through identity tracing at pharmacies.

To address these barriers to obtaining clean needles, which clearly affect low-income IDUs more than their "white collar" counterparts, Maryland leaders began to take action in the 1990s. As increasing evidence emerged, suggesting the effectiveness of NEPs in reducing HIV risk behaviors in IDU populations, officials from Baltimore City took note. In 1994, Mayor Kurt Schmoke petitioned the Maryland State Legislature for an exemption to the drug paraphernalia law so that a NEP could operate in Baltimore, and the city was granted temporary immunity from the law to operate a pilot program within the city limits (Corbin, 2000). In the first three years of the Baltimore City NEP's existence, the program was successful at reducing participants' needle-sharing and other risky behaviors, resulting in a 7.8% decrease in IDUs injecting with used needles, and a 12% decrease in sharing needles after six months of participation in the program, with stronger outcomes at earlier follow-up points (Vlahov, Junge, Brookmeyer, Cohn, Riley, Armenian, Beilenson, 1997). Thus, the program was granted a permanent exemption to the Maryland State drug paraphernalia law, and has been running successfully ever since, reducing both risky behaviors as well as HIV incidence amongst IDUs in Baltimore City (Baltimore City Department of Health, 2012; Corbin, 2000).

In 1998, perhaps noting the success of the Baltimore City NEP, legislatures from Prince George's County also began to take action. By that time, the rate of new HIV cases attributable to injection drug use had risen to 26% of total cases (Maryland Department of Health and Mental Hygiene, 2010). Specifically, a bill to expand the exemption from the state drug paraphernalia law was introduced to the legislature by the Prince George's County Delegation in the Maryland House of Delegates. The primary sponsor was a Maryland State Delegate from Prince Georges County, Representative Pauline H. Menes, and all but one of the 21 delegates from Prince George's County also supported the bill (Pierre, 1998). House Bill 626, entitled "Prince George's County-AIDS Prevention Sterile Needle and Syringe Exchange Program," was first presented to the Maryland State Legislature on February 9th, 1998 (Maryland General Assembly, 1998). The bill was read a total of three times on the legislative floor, and passed on the third reading with one amendment pertaining to clarifying the language (Maryland General Assembly, 1998).

The Maryland State Legislature passed Delegate Menes' bill on April 10th 1998, and Prince George's County was thus granted the same exemption to the state drug paraphernalia law that Baltimore City had received (Pierre, 1998). The language of the immunity article for the two localities, as put forth by the Maryland State Legislature, is as follows:

> "Immunity from crime of distributing controlled paraphernalia. --No Program staff member or Program participant may be found guilty of violating Article 27, §287, §287A, or §288 of the Code for possessing or distributing controlled paraphernalia or drug paraphernalia whenever the possession or distribution of the controlled paraphernalia or drug paraphernalia is a direct result of the employee's or participant's activities in connection with the work of the program authorized under this article (Burris, 2001, p. 7)."

The law for Prince George's County specified rules for the county executive to

establish a needle exchange advisory committee, comprised of two representatives from law enforcement, two representatives from public health academia, one representative from the Department of Health, one representative from a community group within Prince George's County, one representative from an AIDS advocacy group, one drug treatment counselor, one injection drug user in recovery, and up to three other individuals deemed appropriate to sit on the committee by the county executive. This advisory committee would submit provisions to govern the operations of the program, and these provisions would be upheld with the power of law (Maryland General Assembly, 1998). The law also specified that the NEP would be housed in and run by the Prince George's County Department of Health. The County Health Officer would be responsible for hiring the program director, and was charged with the responsibility of data collection and program evaluation (Maryland General Assembly, 1998).

After this immunity was first granted by law there were several attempts by the Prince George's County Council to implement a program. One of these attempts was made by Councilmember Thomas R. Hendershot, who brought a proposal to the council in early 2000 to implement a program for the approximate cost of $300,000 - $400,000. However, this proposal was buried when some on the County Council claimed that they needed more time to collect community opinions before implementing such a program, and others on the council voiced their ardent opposition. Since these initial attempts no further efforts have been made, and the issue of NEP implementation has fallen from the forefront of the public health agenda in Prince George's County (Shwartzman, 2000).

Chapter 3: Methods

Study Population

Sampling Procedures

Data Collection Procedures

Data Analysis Process

Study Setting

Prince George's County, Maryland

Prince George's County is one of 24 counties in Maryland State. It is bordered by the District of Columbia to the west, Montgomery and Howard Counties to the north, Anne Arundel County in the east, and Calvert and Charles Counties to the south. The total county population in 2011 was estimated at 871,233 people, with 65.4% of the population self-identifying as African-American or Black (U.S. Census Bureau, 2012). An additional 26.6% of the population self-identified as white, 15.2% as Latino or other Hispanic origin, 4.3% as Asian, 1% as American Indian or Alaska Native, 0.2% as Native Hawaiian or other Pacific Islander, and 2.5% as more than one race (U.S. Census Bureau, 2012).

Prince George's County comprises a fairly affluent community. It has been named the wealthiest African-American majority county in the United States (Howell, 2006). Indeed, the median household income between 2006 and 2012 was $71,260, just higher than the median income for Maryland, and considerably higher than the overall median income for the United States, which was $51,914 (U.S. Census Bureau, 2012). The homeownership rate in the county was 64.4% in 2011, and the median value of homes was $327,600 (U.S. Census Bureau, 2012). In 2011, 54.4% of the businesses in the county were owned by African-Americans (U.S. Census Bureau, 2012).

Prince George's County is a particularly religious community, with approximately 800 churches sitting on less than 500 square miles of land (Raghaven and Harris, 2005). The largest denomination is the Catholic Church, with 35 congregations and 83,959 reported adherents (Association of Statisticians of American Religious Bodies, 2010).

However, there is also a very strong presence of traditionally African-American protestant churches, with several mega churches of this kind comprising thousands of worshipers and thousands of acres of land (Raghaven and Harris, 2005; Association of Statisticians of American Religious Bodies, 2010). Other prominent religious traditions in Prince George's County include Evangelical Protestants, Latter-Day Saints, Mainline Protestants, Hindus, Muslims, and Jews (Association of Statisticians of American Religious Bodies, 2010).

The county is divided into nine legislative districts. Sitting on the County Council, there is one representative for each of the nine districts. The nine members of the Prince George's County Council are the same individuals who comprise the county's Board of Health. The Board of Health is charged with enforcing regulations related to health and wellness in the county, as well as with reviewing the policies and programs put forth by the county health department (Prince Georges County Government, 2006). Within each of the nine districts of Prince George's County are a number of smaller townships and municipalities, which incorporate smaller local governments such as city councils, town councils, mayors, and other administrative bodies (Prince Georges County Government, 2006).

Within the county, there are varying levels of urbanization between the nine legislative districts. For example, while 61.2% of the land in the county is designated as urban, much of southern Prince George's County is comprised of agricultural areas with low population density (Maryland Department of Planning, Data Analysis and Projections, State Data Center, 2011). In total, the county spans a distance of 482.69 square miles, with an overall population density of 1,788 people per square mile (U.S.

Census Bureau, 2012). In the more urbanized areas of western Prince Georges County lying along the District of Columbia border (districts 2, 3, 5, 7, and 8), the population is larger and denser than in the outlying districts (Prince Georges County Police Department, 2006). Comprising less than 140 square miles, these five urbanized districts contain approximately 480,000 residents, more than half of the total county population (Prince Georges County Police Department, 2006).

Perhaps due to the high rates of HIV in the District of Columba, the districts that lie on the border with the capital city are also those that have the highest rates of HIV/AIDS (Maryland Department of Health and Mental Hygiene, 2010; U.S. Census Bureau, 2012). In 2009, District 9 had two zip code areas with the highest HIV rates in the county: 20613 and 20735. Respectively, these comprised 1% and 4.4% of the total new cases of HIV in the county in 2009, and had a 62.0 and a 59.9 per 100,000 persons HIV rate (Maryland Department of Health and Mental Hygiene, 2010). District 5 also contained one of the highest HIV-rate zip codes in Prince George's County: zip code 20785 had a rate of 119.0 per 100,000 population, and accounted for 9.6% of the total new HIV cases in the county (Maryland Department of Health and Mental Hygiene, 2010). These districts along the District of Columba border are also more likely to be comprised of lower income communities (U.S. Census Bureau, 2012).

Table 1 represents the 15 zip codes within Prince George's County with the highest rates of HIV. Demographic differences between the legislative districts with the highest rates of HIV are provided.

Table 1: Prince George's County Zip Codes with Highest HIV rates in 2009
Characteristics by Neighborhood and Legislative District

Zip Code	Town/City Name	District	Population Density (persons per square mile), 2010	Median Household Income, 2010	Number of new cases of HIV, 2009	Percent of total new HIV cases in P.G. County, 2009	HIV Rate (Per 100,000), 2009
20785	Greater Landover	5	5,673.1	$53,872	37	9.6%	119.4
20746	Suitland, MD	7	6,073.6	$52,576	26	6.7%	110.1
20743	Capitol Heights	7	n/a*	n/a*	38	9.8 %	110.0
20747	District Heights	6/7	6,296.7	$63,596	36	9.3%	109.0
20781	Hyattsville	2	6,588.0	$54,839	9	2.3%	94.3
20770	Greenbelt	4	3,674.4	$61,143	14	3.6%	74.2
20774	Upper Marlboro	6	n/a*	n/a*	21	5.4%	74.1
20745	Oxon Hill	8	2,677.8	$64,564	17	4.4%	73.4
20737	Riverdale	3	4,218.3	$51,480	12	3.1%	73.1
20613	Brandywine	9	319.8	$105,366	4	1%	62.0
20748	Temple Hills	8	5,576.7	$54,571	21	5.4%	60.5
20735	Clinton	9	1,439.0	$95,801	17	4.4%	59.9
20706	Glenarden	5	4,918.0	$47,943	18	4.7%	56.4
20721	Bowie	6	2,970.1	$101,671	9	2.3%	47.3
20744	Fort Washington	8	1,719.7	$106,917	16	4.1%	37.9

(Prince George's County Council Map Viewer, http://gis.princegeorgescountymd.gov/website/countycouncil/viewer.htm; Maryland Department of Health and Mental Hygiene, 2010; U.S. Census Bureau, 2012)
*Census data not available

Study Population

Community Stakeholders

Consistent with previous qualitative research including NEP community stakeholders, the individuals invited to take part in this study represented the offices of elected officials, law enforcement, health organizations, religious institutions, drug treatment centers, and neighborhood associations in Prince George's County (Downing et al., 2005; Philbin et al., 2008; Wenger et al., 2011). These community sectors were

chosen because of their direct relevance to the potential implementation of a NEP. As highlighted in the literature review, each of these sectors has played an important role in the development of NEPs in other communities around the country. Thus, these stakeholders are likely to reflect the perceptions and opinions of potentially influential individuals at each level of the Social Ecological Model: individual, organizational, community, and policy (McLeroy et al., 1988).

In order to reflect the sociocultural makeup of the county, including both the urban and the agricultural areas and both low-income and high-income areas, community stakeholders were selected from two legislative districts within the county. Also consistent with other similar research, the goal was to recruit 12 participants into the study, ideally including a stakeholder from each community sector from two different districts in the county (Downing et al., 2005; Philbin et al., 2008; Wenger et al., 2011).

Sampling Procedure

In order to gain approval to perform research with human subjects, an application was submitted to the University of Maryland, College Park (UMCP) Institutional Review Board (IRB) on November 16, 2012. After providing revisions to study materials, final approval was granted by the IRB on November 30, 2012. Only after approval was obtained from the IRB did sampling and recruitment of participants begin (Appendix 1).

Because the nine legislative districts within Prince Georges County represent a mixture of urban, semi-urban, and rural land, as well as a variety of socio-economic levels, two of the nine legislative districts were deliberately selected for inclusion in the study. Districts were chosen that contain at least one of the fifteen zip codes with high

rates of HIV, as compared with other zip code areas within the county. Other criteria for inclusion of districts included having a disparate level of land use (i.e. rural versus urban) from other included districts, as well as a disparate level of socio-economic status and population density. This deliberate selection of districts sought to ensure a more diverse representation from the various community settings across the county.

Because they represent the greatest diversity in socioeconomic demographics and population density, while representing several of the zip codes with the highest HIV rates in the county, District 5 and District 9 were selected for inclusion. Within each of these two districts, community stakeholders from each community sector (elected officials, law enforcement agents, religious organizations, neighborhood associations, public health professionals, and drug treatment counselors) were identified by the researcher, with the help of community informants. A total recruitment goal of 12 participants was set, ideally comprised of one stakeholder from each of the six identified community sectors, in both of the selected districts.

Sampling for this study followed a two-step process. First, a convenience sample of community stakeholders was identified. The researcher obtained the names and contact information of publicly elected officials, such as county councilmembers, mayors, town and city councilmembers, and municipal police chiefs through publicly available Internet listings. Thus, the researcher was the sole person responsible for identifying stakeholders for the elected officials and law enforcement community sectors. The researcher then used the assistance of community informants who live and work in Prince George's County, including one elected official, one community resident, one HIV case manager, and a PhD student in the Department of Behavioral and

Community Health at the University of Maryland School of Public Health. These informants assisted the researcher by providing names and contact information for stakeholders in the remaining community sectors. The researcher also relied on her existing familiarity with Prince George's County community sectors, having lived and worked there for several years, to identify other relevant community stakeholders in Prince George's County. While it is impossible to completely prevent the possibility of selection bias, relying on community informants reduced the chances of this bias by having a diverse range of individuals responsible for identifying the convenience sample.

As community stakeholders were identified, their names and contact information were recorded in Microsoft Excel. Each legislative district was given a separate workbook, and each of these workbooks contained six columns: one for each community sector. There were a total of 2 workbooks and 18 lists in Microsoft Excel, one for each community sector and in each legislative district. The names of community stakeholders were added, along with their contact information, to the appropriate list in the appropriate workbook. In order to assure that identifying the convenience sample was done in a timely manner, a cap of 50 stakeholders from each sector in each district was set. In most instances, this cap was not met, as there were not so many identified stakeholders in most of the sectors. This cap was only necessary for the elected officials and for civic associations in both District 5 and District 9. The total number of stakeholders identified was 122, with an average of 11.5 stakeholders in each District 5 sector, and 8.8 stakeholders in each District 9 sector.

Names and contact information were collected in no particular order as

stakeholders were identified in each district and in each community sector. In order to be added to a workbook as a potential participant, a phone number or e-mail address was required for each stakeholder identified. These criteria were set due to the logistical and safety concerns of a physical address as the only means of contact.

After all stakeholders were identified and their names listed under the appropriate category in Microsoft Excel, a second step was taken in an attempt to reduce selection bias. The Microsoft Excel randomization tool was used to sort the lists of community stakeholders into random order within their columns. As such, the randomly chosen name of one community stakeholder appeared at the top of each column. These top names were the ones that were selected for inclusion in the study. This randomization process served to ensure that all identified community stakeholders in each district had an equal chance of being included in the study.

The process of identifying and contacting stakeholders did not overlap with the recruitment process, and was completed by December 14, 2012. Once the lists of community stakeholders was generated and a random sample determined, those who were randomized for selection were contacted by the researcher and invited to participate in the study. Depending on the type of contact information received, each potential interviewee was invited to participate either over the phone or through e-mail. A script containing the details of the study, including the study topic, interview process, confidentiality, and incentives, was either written out or read aloud to the stakeholders before they were asked if they would like to participate (Appendix 2). If the stakeholder agreed to participate, then a time and place was agreed upon to conduct the consent process and the interview.

If an originally randomized selectee declined to participate in the study, their name was removed from the list of stakeholders, and the list was then re-randomized using the same Microsoft Excel tool. The newly randomized list resulted in another randomly selected stakeholder, who was then invited to participate in the study. This process of random selection continued until 12 community stakeholders, one from each of the six sectors and in each of the legislative districts, was identified to participate in the study. In the event that the originally randomized selectee failed to respond to initial attempted contact, the same process of re-randomization described above was followed.

At first, selectees were contacted by phone or e-mail once a week for a period of two weeks (14 days) following the initial request. This included a total of three attempts: the initial request, a follow-up on the seventh day, and another on the fourteenth day. After two weeks and three attempts, it was assumed the selectee did not want to participate in the study, and their name was removed. After the first six weeks of recruitment, this strategy was re-evaluated due to time constraints. It was determined that a period of one week (7 days) would be used to discern whether a participant was interested in participating. This also included a total of three attempts: the initial request, a follow-up on the fourth day, and a final contact made on the seventh day. In the cases of multiple means of contact (i.e. phone number and e-mail address), a different method was used for the follow-up attempts than was used for the initial attempt. For example, if a phone call was placed for the initial attempt, an e-mail address was used for the subsequent follow-ups, in case a selectee preferred that form of communication. This method ensured a more expedient recruitment process, proving to be successful in identifying interested participants more quickly.

A contact log was kept as a separate worksheet in Microsoft Excel. This log detailed all attempted calls or e-mails for each selectee, so that the follow-up timeframe could be followed exactly. It included 11 columns: the selectee's name, the district they represent, the community sector they represent, their contact information, the date of initial contact, notes on the initial contact, the date of the second contact, notes on the second contact, the date of the third contact, notes on the third contact, and a final column to indicate whether the selectee was enrolled or removed from the list. Each time a contact was attempted, the contact log was updated to reflect that activity.

Data Collection Procedures

Data collection began after the convenience sample of stakeholders had been identified, and took place concurrently with recruitment efforts. After randomizing the stakeholder lists and recruiting selectees, the researcher began arranging meetings with the participants. The meeting times and locations were based on the preferences and availability of each participant, as well as on the availability and discretion of the researcher. All attempts were made to accommodate the schedule and travel limitations of study participants. The criteria for a meeting place was that it had to be in a private setting, with minimal background noise, and agreed upon by both the researcher and the participant. Possible meeting places included the office of the participant, a conference room in the participant's place of work, a quiet space within a community center, or an on-campus space at UMCP to which the researcher had access, such as the Center for Health and Wellbeing. Other meeting spaces, such as quiet coffee shops or restaurants, were also considered, but ultimately were not used. In all but one of the cases, the chosen

location was the stakeholder's office. The exception to this was one meeting, which took place in a private office within UMCP's Center for Health and Wellbeing.

At the time of each meeting, the researcher and the stakeholder went through an informed consent process. The researcher briefly summarized an informed consent document, developed by the researcher using the UMCP template (Appendix 3). This summary included the purpose of the study, what the participant could expect of their participation, potential risks and benefits of participation, confidentiality, and compensation. The consent document emphasized that participation in the study was completely voluntary. Participants were given as much time as they needed to read the consent document in its entirety, and were encouraged to ask any questions before agreeing to sign it. Both the researcher and the participant then signed and dated two copies of the informed consent document: one for the participant to keep, and one for the researcher to put on file. On the same day as the interview, all study documents, including the informed consent form, were placed in a locked filing cabinet in the researcher's home office. Participants were notified that their identifying information would not be used in the study, and were offered the opportunity to select an anonymous identifier by which they could be referred to during the interview process. This did not prove to be necessary, as the researcher never used names when asking questions, and no participants referred to themselves when speaking.

Only after signing the consent forms were the participants considered to be officially enrolled into the study. It was then that the data collection process could begin. In order to gain demographic characteristics to describe the study sample, participants were asked to complete a six item demographic questionnaire prior to the start of the

interview (Appendix 4). The questionnaire contained fields for sector of the community, age range, number of years working in current sector, gender, race/ethnicity, and the highest level of education completed.

After descriptive demographic characteristics were collected, the interview process began. All interviews were one-on-one, semi-structured qualitative interviews. Data was collected from each participant using a qualitative, in-depth interview guide (Appendix 5). Interviews with all participants followed the same interview schedule, and all twelve participants were asked the same nine questions, with minimal variation in prompts for clarification. The schedule contains a total of nine questions. The schedule was designed so that each interview should take no more than one hour, and a pilot test with one individual prior to data collection confirmed that the interview took approximately 20 minutes. Throughout the course of the data collection process, interview times ranged from approximately 15 minutes to approximately 45 minutes, not counting the time spent on the consent process or on the demographic questionnaire.

The interview addressed the research question and the specific aims of this study, asking about participants' perceptions of the history of NEP legislation in Prince George's County, HIV/AIDS in the IDU population, whether or not a NEP would be feasible in the county, and what some potential barriers and facilitators might be for implementation of such a program. Participants were informed ahead of time that they were not required to answer any question they do not feel comfortable answering. The interview guide was followed as closely as possible during each interview, with minimal prompts or questions added by the researcher only if clarification or elaboration was needed from the participant.

At the close of each interview, participants were thanked again for their time. They then received a $30 American Express universal gift card as compensation for their time and their participation in the study. Prior to the start of data collection, the researcher purchased a total of 12 gift cards, each of a $30 value, for a total cost of $360. Funding for this cost was provided by the University of Maryland School of Public Health, Department of Behavioral and Community Health, and from Dr. Mary A. Garza's research fund. Participants were asked to complete a receipt form to confirm they had received the gift card. In addition, participants were encouraged to contact the researcher if they were interested in hearing about the progress of the study. The researcher also told each participant that they would be sent a final copy of the manuscript once it had been completed.

All interviews were recorded using digital recorders loaned to the researcher through the University of Maryland's Hornbake Library- Nonprint Media Services. These devices were borrowed for periods of one to two days. Because of this short loan period, each audio file was uploaded to the researcher's private computer and stored in a password-protected folder on the same day of the interview. The audio files were labeled with anonymous participation numbers for identification. These numbers comprised the district number, as well as a letter signifying the sector of the community the participant represents (i.e. elected officials: A, law enforcement: B, health professionals: C, drug treatment counselors: D, religious leaders: E, neighborhood associations: F). These unique identifiers assured that all information was kept anonymous, while still allowing for organization of data files. The files were then deleted from the recorder before the device was returned.

Each interview was transcribed within 48 hours of its completion. All written transcriptions were saved electronically to the same password-protected folder on the researcher's computer, using the same anonymous identification number assigned to their audio file. For further security of the confidential files, the computer itself was password-protected.

The process of data collection took a total of three months from the time of IRB approval to completion. All audio files and interview texts will be continue to be securely stored for a period of 5 years from study completion, at which point they will be destroyed.

Data Analysis Procedures

Grounded Theory Model

As this study did not set out to test hypotheses, but instead to identify themes that could help generate hypotheses for use in future studies, the Grounded Theory Model (GTM) of data analysis was utilized in the data analysis process. This is a logical model to use when the findings of the study are unforeseen (Glaser and Strauss, 1967). The GTM was first developed by Glaser and Strauss in 1967. It uses inductive reasoning to extrapolate meaning from qualitative data, whereby themes and sub-themes emerge from the data throughout the process of data analysis (Glaser and Strauss, 1967). Through this process, the perceptions and opinions of study participants began to result in themes, and as relationships between these themes developed, were able to be defined. After the categories of themes and the relationships between them emerged, hypotheses could then be systematically constructed related to the original research question of this study: *What*

are the barriers and facilitators to implementation of a needle exchange program in Prince George's County? Thus, outcomes of the data analysis process will include the potential generation of new theory or hypotheses in future studies, as opposed to the acceptance or rejection of a null hypothesis.

The generation of new theories or hypotheses is a task that lies outside of the scope of this thesis. The data analysis done for this thesis merely sought to identify barriers and facilitators to NEP, assess the feasibility of NEP implementation, and develop recommendations for policy makers in Prince George's County. Thus, the data analysis process associated with this work was focused on accomplishing the three specific aims of the study, which are listed above in Chapter 1.

Data Analysis Process

Data analysis began concurrently with the data collection process. Due to the qualitative nature of the data, themes and sub-themes began to emerge immediately from the interviews, and were coded by the researcher. A coding scheme unique to this study began to be developed by the researcher after the first interview was transcribed. This coding scheme is comprised solely of topics and themes that were brought up by study participants during the interview process.

Nvivo, a qualitative research and data analysis software package, was provided for use in this study by Dr. Mary A. Garza (Nvivo, Version 7, 2006). This software offers the opportunity to manage the textual data of the interviews, organize and segment qualitative data, and establish coding schemes for analysis. Textual data from the transcribed interviews were uploaded to Nvivo as individual documents under a single

project, so that all interviews could be coded and analyzed simultaneously. This allowed the data from individual interviews to be analyzed in relation to the others, as well as by itself, providing for a richer depiction of the themes and topics.

The first step in the data analysis process was familiarization. During the interviews with stakeholders, the researcher took notes on potentially important or particularly relevant topics. This provided an initial snapshot of the data contained in each interview. While listening to the recordings of interviews, the researcher was able to further ascertain the nature of the data contained within the interview text. This process of familiarization continued through the transcription phase, during which time the researcher became more familiar with the content of the data.

Once transcription of an interview was complete, the data could then be organized. Each interview was uploaded individually to a single project within the Nvivo software, and labeled with the same unique identifier given to the audio and textual files after the interview. This made it possible to analyze each interview separately, but also compile data from the total pool of interview texts.

When the data had been uploaded and organized in Nvivo, data coding began, wherein both the themes and sub-themes from the data were identified and categorized. As these themes and sub-themes emerged throughout the data collection and transcription of the interviews, they were identified as "free nodes," and were labeled with meaningful names to categorize them as a code. A codebook was created to track the emerging themes in the data. Development of codebooks has been found to be useful in qualitative data analysis to identify some of the major themes that seem to be significant to the research study (Macqueen, McLellan, Kay, Milstein, 1998). This codebook will be

retained, and will be useful if the study is ever expanded, or if the data is ever needed to inform future research.

As the data collection process continued, the codebook was updated continually to reflect additional themes as they emerged from the interviews. The frequency of each code was counted, identifying common themes that emerged from the total compiled data of all interviews. A hierarchy of codes, based on frequency, was determined, thus defining the most commonly mentioned themes. The most frequently cited codes are explained in further detail in the codebook (Appendix 6). The frequency of references and the number of sources referencing was counted for each individual code, and was also used to compared different sectors and different districts, to see if certain codes arose more frequently in one category or another.

When the final interview had been conducted and transcribed, the final themes were identified. Because themes continued to arise throughout the data collection process, and because data coding is prone to human error and oversight, all transcribed interviews were re-coded a second time after the final interview had been coded. By doing this, the researcher was able to identify any previously uncategorized codes from the final coding scheme. Once the codebook was finalized, individual codes were categorized under the major study themes, which were defined as those most frequently referenced themes mentioned by a majority of stakeholders, and that could serve as umbrella categories for other, related sub-themes.

Relationships between each of the study themes were established using a code tree tool within Nvivo. This allowed for a comprehensive picture of the forces affecting

NEP implementation in Prince George's County, as described by the key community stakeholders who participated in this study.

Codes that were relevant to the research question were categorized as describing either barriers or facilitators to NEP implementation. Because the majority of study codes could be categorized as either a barrier or a facilitator, these two distinctions inevitably became the two predominant major themes of the study. The frequency of references to each of these themes, as well as the number of sources referencing them was noted in the codebook. A list of all references was compiled for each of these two themes, and a thorough examination of these lists resulted in a description of each barrier and facilitator. This examination helped to determine whether the barriers and facilitators were operational (i.e. pertaining to legal or operational facets within the county), or socio-cultural (i.e. pertaining to the perceptions of the community). This distinction was used to more thoroughly describe the contextual setting currently affecting the prospect of implementing a NEP.

The relevance of the barriers and facilitators in relation to NEP implementation was also assessed, to determine the extent to which each would have an effect on NEP implementation. The analysis of the relative strength of barriers to facilitators, as well as the frequency of references for each, was used to determine the feasibility of implementing a NEP in Prince George's County, which is described in further detail in Chapter 5.

In addition to identifying themes and sub-themes that emerged from the general perceptions of participants regarding NEPs in Prince George's County, segmented analysis of this data provided the opportunity to conduct some basic comparisons. These

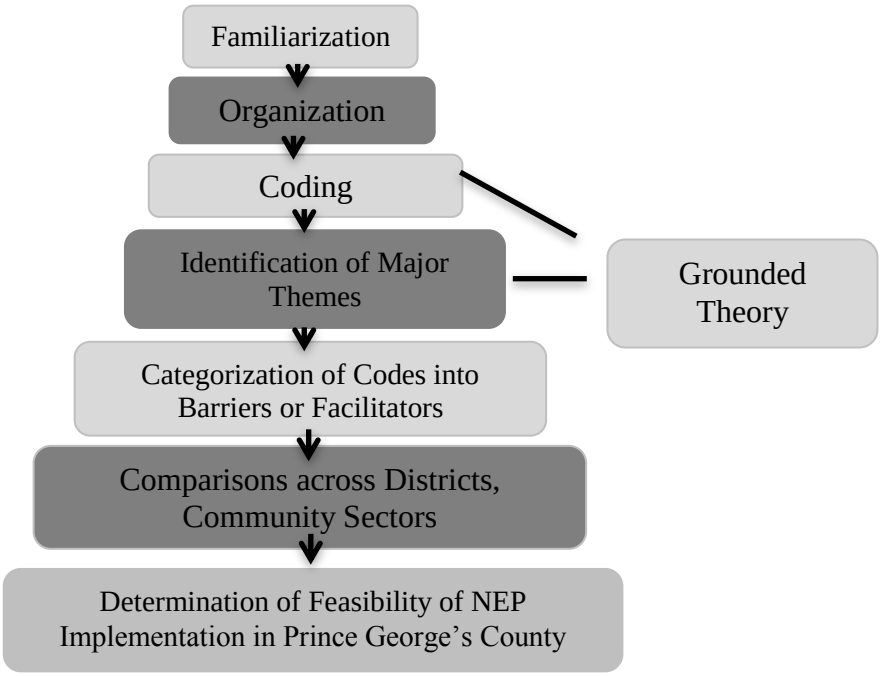
segmented comparisons included one between the various types of community settings in Prince George's County (i.e. the more urbanized District 5 versus the more rural District 9), as well as between the various sectors of the community (i.e. religious leaders, elected officials, law enforcement, drug treatment counselors, neighborhood associations, and public health organizations).

As each interview was uploaded to the Nvivo software program individually, it was possible to analyze each interview separately, and thus compare the findings from each of the twelve sources of data. A summary of each code was created within Nvivo, and this summary contained a list of references from each source of data, identified by their unique study identifier.

The frequency of references was manually tallied for each of the six community sectors, as well as for both of the study districts using these summaries. These tallies provided an accurate numerical depiction of the differences in themes referenced, from which preliminary inferences could be drawn about the differences in perceptions across the various categories included in this study. The comparisons allowed for an assessment as to whether or not there are differences in stakeholder perceptions across the two geographic areas, or across the six sectors of the community.

The process of data analysis followed a process of consecutive steps, beginning with familiarization with the content of the data, and ending with the determination of the feasibility of NEP implementation in Prince George's County. These consecutive steps, which represent the framework within which this data analysis took place, are included below in Figure 2.

Figure 2: Data Analysis Framework, Based on the Grounded Theory Model



Chapter 4: Results

Sample Demographics

Major Themes

Barriers and Facilitators

Sample Demographics

The 12 stakeholders who participated in this research represented a broad range of expertise and experience. The study goal of having two representatives from each community sector, and in each district, was met. This meant that the sample included two law enforcement officials, two elected officials, two drug treatment counselors, two public health officials, two religious leaders, and two members of civic associations. Both of the religious leaders who participated in this study represented a Christian faith. A complete list of sample demographics are listed in Table 2.

At least two of the stakeholders considered themselves to have expertise in more than one field. For example, one of the drug treatment counselors was pursuing his degree in public health at the time of the interview, and therefore his expertise lay in more than one sector of the community. In these instances, stakeholders were asked to represent their primary field of work, although were encouraged to employ knowledge from all of their education and experience when responding to the interview questions.

Most of the participants in this sample were well-experienced professionals in their line of work. Of the twelve participants, seven (58%) indicated that they had more than 10 years of experience working in their particular field, which was the highest number of years of experience included on the demographic questionnaire. An additional 3 participants (25%) indicated that they had between 5 and 10 years of experience working in their field. Only two participants indicated that they had less than 5 years of experience.

Overall, the amount of experience indicated was correlated with the age of the participants. And example of this is that the only participant who reported having less

than 5 years of experience in their field was also one of only two participants (17%) who listed their age as being between 26 and 35 years of age. All other participants (83%) were over the age of 35. There were two participants who reported that their age was between 36 and 45, two participants (25%) who reported that their age was between 46 and 55, and four participants (33%) who reported that their age was between 56 and 65. One participant indicated that their age was between 66 and 75. None of the participants listed their age as being between 18 and 25 years of age, nor were any of the participants over the age of 75.

Overall, the participants were highly educated, with the majority of the group having earned a college degree. Of the twelve participants, five individuals (42%) had earned a post-graduate degree, and another five reported being college graduates. There were two participants who indicated they had had some college. None of the participants reported having completed less than some college as their level of education. There did not seem to be a difference in education levels between any of the community sectors, nor between either of the county districts. Those who were most educated were also those who self-identified as being in one of the older age ranges.

The gendered makeup of the group was evenly split between males and females. A total of six participants identified as female, and six participants identified as male. There were slight differences in gender between a few of the community sectors. Notably, all of the public health and civic association stakeholders identified as female, and all of the law enforcement and religious stakeholders identified as male. Only the elected officials and drug treatment counselors were evenly split between the two genders. There were no notable gender differences between the districts.

There was slightly less diversity in the racial makeup of the group. The majority of the participants identified as being African American or Black. A total of nine participants (75%) identified as African-American or Black, and three participants (25%) identified as white or Caucasian.

Table 2. Demographic Characteristics of Sample (N=12)

	Characteristics	N	%
Age (years)	18-25	0	0
	26-35	2	16.6
	36-45	2	16.6
	46-55	3	25.0
	56-65	4	33.3
	66-75	1	8.3
Gender	Male	6	50.0
	Female	6	50.0
Race/Ethnicity	Black/African-American	9	75
	White	3	25
Highest Education Level	Middle School	0	0
	Some College	2	16.6
	College Graduate	5	41.6
	Post-Graduate Degree	5	41.6
Community Sector	Elected Official	2	16.6
	Law Enforcement	2	16.6
	Religious Leader	2	16.6
	Neighborhood Association	2	16.6
	Public Health	2	16.6
	Drug Treatment	2	16.6
Years in Current Sector	Less than 1	1	8.3
	Between 1 and 5	1	8.3
	Between 5 and 10	3	25.0
	More than 10	7	58.3

Study Findings and Specific Aims

Each of the three specific aims associated with this study were successfully addressed through the major themes discussed below. The first specific aim, to identify barriers and facilitators to NEP implementation, was addressed by categorizing the major themes that arose through the data collection process as either barriers or facilitators. This was dependent on the context within which the themes were discussed in the interviews, and is described in further detail on page 96. The second specific aim, to assess the feasibility of NEP implementation, was accomplished by comparing the frequencies of the major themes categorized as either barriers or facilitators. The description of NEP implementation feasibility is presented on page 104, and discussed in further detail in Chapter 5. The third specific aim, to develop recommendations for policy makers and public health officials, was accomplished by using the themes to inform strategic recommendations to address the issue of HIV prevention in IDU populations in Prince George's County. These recommendations are presented and explained in Chapter 5.

Description of Major Study Themes

In order to address all three specific aims of this study, it was necessary to first identify and describe the major themes that arose through the Grounded Theory Model of qualitative data analysis. This was necessary so that the context within which the themes were referenced, as well as their true meaning, could be extrapolated to determine the barriers, facilitators, and feasibility of NEP implementation, as well as to develop recommendations for policy makers and public health officials in Prince George's County.

Below is a descriptive summary of the major themes that arose from participants' responses to the one-on-one, semi-structured interviews about their perceptions on needle exchange in Prince George's County. All major themes emerged naturally during the data analysis process, and following the Grounded Theory Model (GTM), were not pre-established. All major themes were defined as having been referenced by at least six of the study participants during the interview process, and having had at least one sub-theme connected to them. In this sense, the major themes of this study are defined as "umbrella" themes, encompassing a number of other, related sub-themes. The study sub-themes also emerged concurrently with the major themes, and were coded as such throughout the process of data analysis. All of the major study themes and study sub-themes, as well as the relationships that were identified between them, are listed in Table 3. The comprehensive codebook, containing all themes and sub-themes, can be found in Appendix 6. (Glaser and Strauss, 1967)

Table 3: Major Themes, Sub-Themes, and Relationships

Major Theme	Sub-Themes	Related Major Themes
Differences between Inner-Beltway and Outer-Beltway Prince Georges County	• Health issues • Resource allocation • Demographics • Proximity to Washington, D.C. • Community engagement • Poverty • Land use • Preserving the neighborhood • Education	• Funding
Need to raise awareness	• Community engagement • Community acceptance • Demonstrating need: framing HIV as a major issue, and Hepatitis C as a growing epidemic • Difficulty engaging injection drug users • Marginalization	• Stigma • Funding
Injection drug use as a declining problem	• Health issues • Drug use trends • Community priorities • Difficulty engaging injection drug users	• Funding • Needle exchange as a political issue
Harms of needle exchange programs	• Promoting drug use • Public safety • Exploiting the system • Control • Image of Prince George's County • Difficulty engaging injection drug users	• Funding • Benefits of needle exchange programs • Stigma
Benefits of needle exchange programs	• Model programs • Education • Public safety • Promoting drug use	• Funding • Harms of needle exchange programs
Needle exchange as a political issue	• Promoting drug use • Control • Resource allocation • Image of Prince George's County • Community acceptance	• Funding • Stigma
Stigma	• Religion • Community acceptance • Promoting drug use • Public safety • Image of Prince George's County	• Funding • Harms of needle exchange programs • Needle exchange as a political issue

The principles of the data analysis plan, following the GTM, made it so that most study themes arose naturally through the process of data analysis (Glaser and Strauss,

1967). Still, some of the themes that arose were prompted through elicitation questions that sought to directly address the first specific aim of the study, which was to identify the barriers and facilitators to NEP implementation that may exist in Prince George's County. These questions, and the themes they elicited, are listed in Table 3:

Table 4: Elicitation Questions and Themes

Question	Themes Addressed
What do you see as some potential benefits of implementing a NEP?	Benefits of NEP
What do you see as some potential harms of implementing a NEP?	Harms of NEP
What conditions would have to exist for a NEP to be implemented successfully?	Facilitators
What are some barriers that might hinder successful implementation of a NEP?	Barriers

A total of thirty-four themes arose from the data analysis process, each of which was categorized under an umbrella major theme. A level of saturation was reached for certain major themes by the sixth interview. However, due to the richness of the participants' responses, and perhaps due to the diversity of participants' perspectives, new themes continued to emerge throughout the entire data collection period, and thus data collection was not halted until all twelve interviews had been completed.

The frequency with which the major themes were mentioned throughout the data collection process, as well as the number of participants who mentioned each, is provided in Table 4. The major themes included a view of Prince George's County as being divided between inner-beltway and outer-beltway areas; the need for community awareness about HIV and Hepatitis C transmission in the IDU population; IDU as a declining problem in the county; funding; harms of NEPs; benefits of NEPs; stigma; the image of Prince George's County; and needle exchange as a political issue. All of the major themes identified in this study were related to at least one other major theme, which denotes the complexity and inter-connectivity of the factors affecting NEP

implementation in Prince George's County. Table 5 contains a list of the major themes, as well as the frequency they were mentioned in total and by each participant. The major themes, the sub-themes that were related to them, and their relationships with one-another are explored in more detail below.

Table 5. Frequency of Mentions and Number of Participants for Each Major Theme

Major Theme	Number of Participants	Total Frequency of References
Inner Beltway and Outer Beltway Differences	6	15
Need to Raise Awareness	7	31
IDU as a Declining Problem	10	33
Funding	10	42
Harms of NEPs	9	18
Benefits of NEPs	12	29
Needle Exchange as a Political Issue	5	10
The Image of Prince George's County	6	21
Stigma	11	33

Inner-Beltway and Outer-Beltway Prince George's County: A "Tale of Two Cities"

This theme emerged in six out of the twelve interviews, and was mentioned fifteen times. Participants from both districts commented on the difference between the parts of the county that lie inside of the Capitol Beltway, an interstate highway that encircles the District of Colombia and runs directly through Prince George's County, and the parts of the county that lie outside of it. The relevance for this study is that the two districts chosen for inclusion represent an inner-beltway community as well as an outer-beltway community: the boundaries of District 5 lie mostly within the Beltway, whereas all of District 9 lies outside of the Beltway.

The primary difference described between these two areas of Prince George's County was socio-economic status, which is related to the two study sub-themes of affluence and poverty. Participants discussed the relative wealth of outer-beltway communities and the relative poverty of inner-beltway communities. The sub-theme of priority community issues mentioned by stakeholders from both districts included those related to the economic climate, and the frequency of poverty being cited as a major problem in the community was notably higher in those stakeholders from District 5.

This difference between the two parts of the county was so stark that one law enforcement stakeholder described the two areas as being "night and day," while one religious stakeholder described them as being "a tale of two cities." As the religious stakeholder put it:

> *"If you look - PG County is like a tale of two cities: outside the beltway, mid county, and inside the beltway. Those areas that are border communities to DC are the areas that have been neglected the most and have the lower economic range. Outside the beltway: especially Bowie, Mitchellville, Fort Washington, etc., are the areas where the per capita income is higher, education rate is higher, employment is higher - all of those kinds of pieces. So, yeah, it's a tale of two cities."*

This theme was related to the major theme of funding, especially as it has to do with the sub-theme of resource allocation. Two of the stakeholders from District 5 mentioned that the areas outside of the beltway in Prince George's County are favored in terms of the amount of resources that are filtered there, versus the number of resources given to programs within the inner-beltway.

The proximity of inner-beltway Prince George's County to the District of Colombia was another sub-theme related to this major theme. Two stakeholders noted that the high rate of HIV in the county may be attributable to Prince George's County bordering the District of Colombia, which has a notably high HIV rate. In addition, it was

acknowledged by two of the twelve stakeholders that many of the residents living within inner-beltway Prince George's County access services in the District of Colombia, due to their geographic proximity to the city. These two stakeholders mentioned that the District of Colombia offers more HIV prevention services than Prince George's County, and that many Prince George's County residents carry more than one form of identification, using two different addresses: one in Prince George's County and one in the District of Colombia. This facilitates their transience across the border, as it allows them to access services in both the District of Colombia as well as in Prince George's County.

Need to Raise Awareness

That a NEP would not be successful without first raising community awareness was raised by seven participants. Stakeholders from both districts mentioned their communities are relatively unaware that HIV in the IDU population is a major health problem. One participant suggested a communications campaign to inform county residents of the importance of NEPs to prevent HIV in the community as a whole, while another mentioned holding forums to discuss the issue. A third stakeholder discussed the notion that only a major outbreak of HIV/AIDS would suffice to raise public awareness about HIV in the IDU population. This stakeholder, a religious leader from District 9, discussed the larger issue of dramatic events garnering more attention than slow, silent diseases like HIV and AIDS:

> *"Prevention is silent. It's the best way, but it's silent. It has no drama to it. This has drama - drama brings attention. And that's a societal issue. What would bring it to the attention of people is, we need a major epidemic. Something drastic that would cause people to wake up and see that this is a killer, and is spreading."*

This theme included the sub-themes of stigma and marginalization. Injection drug users are a hidden population, according to several of the stakeholders, and therefore the issues that affect them are largely unnoticed by the population at large. As one stakeholder put it: "It's a silent community. Silent, because they're breaking the law. So, you're not going to get as strong of a public commitment to a needle exchange program, versus some of the other preventive things that we're looking at." IDUs are not likely to advocate for themselves about issues that affect them, another stakeholder noted, and as a result, that population does not have a voice in the county.

Both of the public health stakeholders mentioned that the rising rate of Hepatitis C in the community would have a greater possibility of drawing community awareness for two reasons: the rate of HIV is declining, whereas the rate of Hepatitis C is on the rise, and Hepatitis C is slightly less stigmatized than HIV, giving it a greater potential to be discussed in a public setting. These stakeholders viewed Hepatitis C as a greater threat to the community than HIV, as one stakeholder pointed out that there are five times more individuals living with Hepatitis C than there are people living with HIV. Thus, they posited, this may help bring to light health issues faced by IDUs in Prince George's County.

The sub-theme of community engagement was mentioned by a total of seven stakeholders. The perception of the community as apathetic was mentioned as an issue by two stakeholders, one elected official and one religious leader. These two participants discussed the importance of community involvement and support for local programs, and

lamented that many people in the community do not seem to care about the plight of others. The religious leader posited that, as a society, we have become desensitized from a religious standpoint, and no longer wish to adhere to the moral tenets taught by religion. This stakeholder said, "We do not care as a society… we need people to see beyond themselves, and in a selfish society, that's damn near impossible." In general, study participants described their communities as not being politically active. The exception to this was one religious leader, who explained that his organization has a specific ministry devoted to social justice and advocacy, and engages many community members in social issues that way. Other than that, stakeholders described community members as not becoming active, unless they are displeased with an action or decision made by local government. One law enforcement official said "When they're happy, they're quiet."

Aside from raising awareness in the general community, several participants also mentioned that policymakers and other stakeholders need to be informed about the issue. This was raised by three participants. Specifically, participants noted the importance of demonstrating the need for a NEP, in the form of data reflecting the HIV rates in Prince George's County's IDU population, as well as evidence of NEP effectiveness from other NEPs that have been implemented elsewhere.

Two participants, one public health stakeholder and one religious leader, also emphasized the importance of raising support from allies, such as non-profit organizations and individuals who care about issues related to HIV prevention in Prince George's County. Self-described as an advocate, one religious stakeholder said that they were largely unaware of the issues affecting IDUs in the county. Without the awareness

of the issues, this stakeholder said, it is impossible to garner support from potential allies to implement a NEP.

Injection Drug Use as a Declining Problem

When asked about the major health issues facing their communities, no participant in this study mentioned IDU. Most of them, a total of ten out of the twelve, acknowledged that it was something that was happening in their community when asked specifically, but none claimed it was a major issue. Even when prompted to answer whether or not IDU was something they saw much of in their community, none of the participants indicated this was a major health issue. In fact, two stakeholders from District 9 expressly stated it was not an issue at all in their part of Prince George's County. The remaining ten stakeholders did acknowledge that IDU happens in their communities, but even then, they noted it was not a priority issue. Several stakeholders mentioned that IDU is not as much of a problem as it used to be, having peaked as a health problem in the mid-1990s, and declining ever since.

While ten of the participants mentioned IDU as a health issue, it was the law enforcement and drug treatment counselors who were able to discuss this issue more at length. The drug treatment counselors from both districts discussed drug use in general as a major health issue for their community, and listed marijuana and PCP as the primary problem drugs. Both drug counselors reported seeing virtually no IDU in younger generations of drug users. However, both drug treatment counselors also mentioned that heroin is still somewhat a problem today, particularly in the older generations and in

those who have been incarcerated. One drug treatment counselor noted that approximately 20% of their patients are IDUs.

The observation by drug counselors that IDU is not currently a major problem was re-iterated by both law enforcement officials, who reported they had not personally responded to a call related to IDU in the past 10 years. Both also mentioned being part of a countywide police radio network, and seldom hearing about IDU as an issue anywhere in the county from other police officers. Several other stakeholders from the remaining community sectors re-iterated the claim about recent drug trends, noting they have seen greater use of marijuana and PCP recently than any other drugs in their communities.

Stakeholders acknowledged that although they may be unaware of a major problem with IDU, that does not necessarily mean a problem does not exist. A total of seven stakeholders mentioned the hidden nature of IDU, even when compared to other types of drug use. One public health stakeholder noted that the clinic where she works has cracked down on drug-seeking patients, not agreeing to see them if they are clearly drug-seeking, which may have impacted the number of drug users utilizing that location. In addition, both of the public health stakeholders mentioned that drug trends can sometimes be cyclical. These stakeholders posited there is a likelihood that heroin will re-emerge as a drug of choice in the coming years, especially as the area and the country as a whole fall on harder economic times, and thus any NEP that is implemented would be ahead of the curve in addressing any future problems with infectious diseases amongst IDUs.

Funding

The theme of funding for a NEP was the most frequently cited theme from the interviews, and all but the two civic association stakeholders mentioned it at least once. This theme was mentioned in relation to many of the sub-themes, as well as to every other major theme identified for this study.

That the county is facing particularly difficult economic times was mentioned by nine stakeholders. As one elected official put it:

> *"If the program needs to be funded, it's another fight. Money in the county is really tight. Most of the revenue comes from property taxes, and we know that property values have been going down. So, budget is really tight, and there is fighting over where the money is going… so, you'd have to make it very important on the priority list, because that's always a fight over the budget and what we're going to do with the money. Every single year."*

The point about funding for a NEP being related to funding for all of the other issues in Prince George's county was mentioned by several other participants. This theme relates to the sub-theme of demonstrating a need for the program, because there are already many documented needs competing for resources within the county. Funding was described by several as an issue of priorities for the county: there are many competing interests and needs within the county, and those needs that are clearly defined and are most pressing are the ones most likely to be funded. This is directly related to IDU as a declining problem in Prince George's County. As described above, many stakeholders do not see IDU as a pressing issue faced by their communities, and thus the likelihood of a program being created to address this issue is small. As one of the elected official said:

> *"Why, if I have to fund something, I am going to fund something that is not in front of my face. Violence is in front of my face. Job loss is in front of my face. Traffic congestion is in front of my face. Global warming is in front of my face. Childhood obesity is in front of my face. This [injection drug use] is not in front of my face."*

Two stakeholders, one public health official and one drug treatment counselor, brought up that although NEPs will cost money, they would also have the potential to save money by preventing new cases of HIV and AIDS. Citing that many IDUs are often homeless and uninsured, one drug treatment counselor pointed out that treatment for these individuals would ultimately be covered by the taxpayer. Thus, this one stakeholder posited, investing money into a NEP would ultimately be cost effective for the county. Another stakeholder, from the public health sector, mentioned that HIV and AIDS patients often wait until late stages of the disease to go to the hospital, due to the stigma associated with being diagnosed. Thus, the cost to the hospital system, to the patients themselves, and to the healthcare system as a whole, is much higher because those patients will have greater needs than those coming in at earlier stages for treatment. This stakeholder pointed out that the cost of treating a patient at a late-stage of AIDS is considerably more than the cost of preventing a single case of HIV through the implementation of a NEP. Thus, this stakeholder posited, the funding argument could be supported by the potential for ultimate cost savings down the road. In this sense, the participant said they thought stigma and marginalization were more important issues to address, rather than the issue of funding, as these are the issues that prevent individuals from participating in prevention-oriented services, and delay them from obtaining proper care when the time comes.

Also, in relation to the major theme of stigma against HIV and IDU, one participant ventured to state that the funds for a NEP could actually become available, though it might not be the most popular program to which to give money. This stakeholder, who represented the public health sector of the community, posited that the

health department could obtain the funds to operate a NEP if they wanted to, but they do not want to fund such a program.

One elected official discussed that although resources may not currently be abundant in Prince George's County, there are hopes that the economic landscape will change in the upcoming years. This person cited the development of the National Harbor as a major shopping center and tourist attraction, and a newly authorized casino project as two examples of ways that policymakers are working to increase the county's revenue. As this person stated, an increase in revenue could mean more availability of funds for projects like NEPs.

However, according to other participants, the issue of generating revenue for the county through development and commerce is more complex than it seems. As stated above, many policymakers view the attraction of new businesses to the county as a means of developing its economic infrastructure, which would provide the ability to fund programs such as NEPs. However, others view this mission to attract business as detrimental to the feasibility of a NEP, because businesses and developers do not want to relocate to an area that is perceived as having a problem with drug use. This is directly related to the major theme of the image of Prince George's County, which is central to attracting business. According to this one stakeholder, policymakers fear that the presence of a NEP would serve as a deterrent to attracting new business and development to the county. This person stated, "there's a lot of money involved in whether business will come into your county or not. So, that's a financial issue, but it's not a funding issue. It's a much broader political question."

Harms of NEPs

Perceived harms of NEPs emerged as a major theme in the data analysis process, as eight stakeholders listed a number of potential harms associated with NEPs. There was an elicitation question directed at extracting data on this theme, so many of the references to this theme were in response to that question. However, several stakeholders mentioned harms they perceived as associated with NEPs outside of this question during the interview. In those cases, the theme arose naturally.

The most commonly cited potential harm was the possibility that the presence of a NEP would increase drug use amongst those who otherwise would not have engaged in such a behavior, or support the habits of those already addicted. Several stakeholders explicitly mentioned this concern, positing that the presence of a NEP would attract IDUs and IDU behavior into their community. Of these, four believed the NEP would either attract drug users into their communities or entice community members to begin using drugs. This is related to another study sub-theme, which is that some might perceive the implementation of a NEP as an act of sanctioning drug use in some way. Several stakeholders felt that if a NEP were to exist in their community, it would send the wrong message to community residents that using drugs was a safe and acceptable behavior that was supported by the distribution of drug paraphernalia.

Three different stakeholders also brought up the possibility of used needles littering the streets, which would be harmful to the greater community, and thus a public safety issue. One civic association stakeholder was primarily concerned with the impact of a NEP on children in the neighborhood, citing their belief that IDUs typically use playgrounds to use drugs, and worrying that a child could potentially get stuck with a

used needle. Another civic association stakeholder mentioned this problem would affect employees of public works, whose job it would be to clean up the streets after NEP participants, and who could potentially be placed at risk of being stuck by a used needle. Two other stakeholders also acknowledged that a one-to-one model of needle exchange would mediate this problem, as it would require IDUs to return their used needles to the appropriate program before being issued new needles.

Another issue raised was the possibility of individuals taking advantage of a NEP for personal profit. This was mentioned by one civic association representative and one law enforcement official, both from District 9. Both of these individuals brought up that drug dealers might take advantage of the NEP to obtain needles and sell them to users, or that users may be mugged for their supplies after visiting a NEP. However, one public health stakeholder disagreed with this statement, citing two reasons this was unlikely to occur. The first reason this stakeholder cited was that the Baltimore City NEP was able to control their distribution of needles in such a way that re-distribution by persons taking advantage of the system did not arise as a significant issue associated with that program. The second reason they cited was that IDUs would not want to distribute the needles they obtained from the program, because they would want to use them. In addition, one drug use counselor posited that because the needles provided by a NEP would be free, there would be little incentive for drug users to purchase them from a third-party dealer.

Two stakeholders brought up the potential relationship between law enforcement and NEP participants as a potential harm of the program. One of these individuals cited that law enforcement officials might take advantage of the known purpose of a NEP to trail drug users and try to find the source of the drugs, which denotes a lack of trust

between the community and law enforcement. Another stakeholder, a law enforcement official, noted that control of a NEP would ultimately fall on the police force, a task this person believed would place undue burden on their already over-worked unit. This law enforcement stakeholder stated:

> *"The control is going to fall on us… We have plenty to do, now we have to control this [needle exchange] agency? Do we have the manpower and the assets to do that? It's another piece of training we have to do… and we have a small department, so I'm… the training officer. I'm the one that does it, plus all of the other duties that I have."*

This was another statement that was explicitly countered by other study participants. A public health stakeholder discussed how model NEPs, like the one in Baltimore, were able to work successfully with law enforcement units, and were able to achieve control measures that ensured the safety and responsibility of all parties involved.

Many stakeholders believed that engaging IDUs with the program would be difficult. Several of them felt that IDUs are a hidden population to begin with, and because of issues like stigma and addiction, there might not be a good probability that users would actually use a program the way it is intended to be used. An example of this came from one civic association leader, who described her community as very close-knit. She said that if there were closeted IDUs in her community, they would not use a NEP for fear of being "outed." The problem of addiction, according to some stakeholders, would also impede an IDU's ability to access a NEP in the first place, because it would interfere with their drug use routine. As one law enforcement official said: "They're not going to get fixed, get dressed, and go down to get a clean needle if there's one already there."

In addition to stigma and addiction, several stakeholders brought up that IDUs have a tendency to be apathetic about their health, with their primary concern having to

do with finding ways to get high. This was a theme that was repeated several times in relation to the difficulty of engaging IDUs with a program. Some stakeholders thought IDUs wouldn't bother to use a NEP if such a program were available. Others though that participating in a NEP wouldn't guarantee that an IDU would actually use the clean needles they obtained. One law enforcement stakeholder said that they thought the primary issue was that IDUs do not care about themselves enough to stay off drugs, therefore they would not be likely to care about themselves enough to try to avoid contracting HIV. As a result, the stakeholder said, the ultimate effectiveness of a NEP would be questionable. In fact, several participants noted that IDUs were likely to continue engaging in risky behaviors, whether or not they participated in a NEP. These risky behaviors included sharing needles, but also included sexual activity and other means of spreading HIV. Indeed, two stakeholders mentioned that sexual activity was still a primary means of spreading the disease, with men who have sex with men (MSM) and youth being the most affected demographics in the county.

Benefits of NEPs

The theme of NEP benefits outweighed the theme of harms in terms of frequency of references. The most commonly cited benefit was the prevention of the spread of HIV, Hepatitis C, and other blood borne diseases. All twelve study participants discussed this as a potential benefit of NEP implementation, including those who said that they otherwise generally regarded NEPs as harmful. Overall, five participants claimed that they were against the idea of a NEP, but could still understand why such a program might seem useful to some members of their community.

One religious leader mentioned that needle exchange is part of an overall comprehensive strategy to prevent HIV/AIDS, including testing, education, and safer sex supplies. This person posited that none of the pieces of the overall strategy against the spread of HIV, including NEPs, should be excluded. One law enforcement official stated: "If you're saving lives - and that's ultimately what we're talking about, is saving people's lives from HIV and spreading the disease- I just don't see a negative."

A total of four study participants stated explicitly that they did not see any harms in relation to NEP implementation, only benefits. The two public health stakeholders cited previous literature, which has shown that NEPs do not increase drug use, and noted model programs in Baltimore and the District of Colombia as evidence of the success of such programs.

As stated above, the threat to public safety emerged as a sub-theme to the major theme of potential harms of NEPs. However, this sub-theme was also mentioned as a potential benefit of NEP implementation. Several stakeholders cited a one-to-one model of needle exchange would actually help to clean up the streets, rather than litter them, as it would give IDUs a way to safely and appropriately dispose of their needles.

Another commonly cited benefit was the creation of a safe space for IDUs. A total of three stakeholders mentioned that a NEP would provide a place for IDUs to not only exchange their needles, but also to access care and connect with other services. Several mentioned a NEP would be a venue to provide treatment and education to IDUs who might not otherwise be reachable. A law enforcement official stated:

> *"There would be an opportunity to provide that kind of education to drug users. I don't think that individuals just give out a clean pair of works and say, here, go use. I think they give them some type of information - whether it's literature - the other side of it is can these individuals read? Are they literate? Some are, some*

aren't. So, giving them that information and then just having a brief conversation with them"

In this way, this theme relates to the sub-theme of the difficulty engaging IDUs. While several stakeholders noted that a NEP would not be effective in engaging IDUs, several other stakeholders believed exactly the opposite: that NEPs could be used to reach out to a community who otherwise have very few services directed to them. One public health stakeholder mentioned the notion of a mobile van unit, which is currently being used in a NEP in the District of Colombia. This person discussed how neighborhood-based services are more effective, because it brings services to where people are, as opposed to requiring them to travel.

Not only could NEPs serve as safe and educational venues for IDUs, stakeholders said, but they could also be expanded to offer services to other marginalized groups. Specifically, the two public health stakeholders mentioned youth and LGBTQ individuals as potentially benefitting from a harm reduction service that was more inclusive. This point relates to the sub-theme of model NEPs, because both public health stakeholders spoke at length about what could possibly be done with a NEP. One of these participants mentioned churches as possible partners in the creation of a harm reduction program. This person also indicated excitement about the potential for a mobile van unit, similar to those operating in Baltimore City and in the District of Colombia. Such a van could incorporate needle exchange, but could also serve other harm reduction needs such as safer sex kits and neighborhood-based community health education. One of the public health stakeholders posited that blending a NEP with other harm reduction services in this way might serve to help eliminate some of the stigma, because the purpose of engaging with the program wouldn't be immediately clear to an outside person.

Another sub-theme related to the potential benefits of NEP implementation is that of the cost of sustaining an HIV infection, versus the cost of preventing a new infection from occurring through the preventive measures of a NEP. As discussed earlier, when asked about the potential benefits, one drug treatment counselor and one public health stakeholder mentioned the potential for cost savings for the health system in Prince George's County.

Needle Exchange as a Political Issue

The theme of needle exchange as a political issue is related to a number of sub-themes, including community engagement, priority issues in the community, and community acceptance of a NEP. It is also related to the major theme of the image of Prince George's County. A total of five stakeholders brought up the political nature of a program such as a NEP, and cited specific contextual political factors within Prince George's County that would affect NEP implementation. Politicians in the county were cited quite often as either forces of opposition or forces of support for NEPs, and in both cases were described as being "aggressive," and "adamant." One elected official said the challenge to any legislation becoming enacted lies within individual lawmakers' own "pet issues." This stakeholder posited that while needle exchange could have been initially addressed during one person's term, the unpopularity of the issue did not carry it over to the next term after that person left office:

> "*My assumption is, what probably happened, we have people elected to terms. That was probably someone's issue, and they had it when they came to term, and then they moved on. And when that happens, they drop off. So, I would make that assumption. That's probably what happened, and it hasn't been brought back up because it's not a major issue for the area."*

The description of politicians as "aggressive" and "adamant" stood in contrast to another description of them, given by a public health stakeholder. This person stated that politicians are "unwilling" to address NEP implementation, because it is an unpopular issue. In fact, both of the public health stakeholders described politicians as unwilling to tackle difficult issues such as those pertaining to HIV prevention: issues like condom distribution and sexual education in schools, and NEPs for IDUs are issues these stakeholders said are not easily discussed by many county leaders. One of the elected officials who participated in this study cited his own commitment to these issues, but acknowledged that he faces resistance from many of his colleagues at the county level, as well as at the state level.

One lawmaker who was brought up by several stakeholders as having the potential to make a difference is the current county executive. His name was mentioned in reference to potential NEP facilitators, as well as in reference to NEP as a political issue. One public health stakeholder recalled that during a campaign debate with several other contenders, the county executive was the only candidate to even broach the topic of HIV prevention. As this stakeholder said:

> *"All the other politicians really were very muted, or said no to something. But he said that he had kids in school, and he had some sense of what harm reduction means. So, he's probably the most progressive person - the only one who has some sort of view like that."*

The potential for the county executive to take the lead with some of the issues facing the county was re-iterated by one other stakeholder, a religious leader from District 5. This stakeholder mentioned the county executive as he was discussing that many politicians in the county like to turn a blind eye to some of the more unpopular problems, like HIV and drug use. The county executive, the stakeholder posited, is the

first leader in a long time who is willing to admit to these issues and begin to work on them. Still, this stakeholder was of the belief that this willingness to admit to problems has come too late, and that the county is decades behind where it should be in terms of HIV prevention.

That many lawmakers do not want to acknowledge certain problems within the county became a frequently referenced theme in this study. As a result, the theme of needle exchange as a political issue is very closely tied to the theme of the image of Prince George's county. Several stakeholders discussed that political leaders are concerned with such issues as attracting new businesses and developers to the county, as well as raising property values to generate revenue through property taxes. These agendas stand in the way of effective HIV prevention efforts for IDUs, stakeholders said, because the presence of a NEP would confirm that a dug use problem exists within the county, a fact that might hinder development and other revenue-generating activities. As a result, one public health stakeholder said, politicians are "scared" of NEPs.

The theme of needle exchange as a political issue was also tied to the sub-themes of community engagement and community acceptance. Throughout the interviews for this study, many stakeholders mentioned certain groups of people serving as advocates for HIV prevention issues in Prince George's County. These groups included health coalitions, persons living with AIDS, and some LGBTQ advocacy groups. Still, stakeholders acknowledged IDUs are a silent community, and therefore have very little representation in the political processes that affect them. In fact, two stakeholders suggested that the scheduling of public forums on the part of county politicians is inhibitive to attracting a diverse range of opinions from the community. Both of these

stakeholders, a religious leader and a public health professional, cited that many community forums are held in Upper Marlboro, which is out of reach for many county residents, and that they are held during inconvenient times of the day. One public health professional suggested that such timing may be deliberate to avoid feedback from certain community members.

In terms of community acceptance of NEPs, three stakeholders stated that they did not think their community would accept a NEP. The most common reasons cited for this was that community members would view NEPs as state-sanctioned drug use, and would not agree with their tax dollars going to support such a program. That IDU is not currently a visible issue in the communities examined in this study was given as a reason community members would not support the implementation of a NEP. One stakeholder posited that their community would be "up in arms" about the implementation of a NEP, while another stated that community members would view a NEP as potentially drawing drug users into their community. Similarly, stakeholders who said their communities would not support a NEP said that they based this decision on their perception that community members would not want their tax dollars going to "promoting drug use," another sub-theme of this study.

The complexity of political interests in the county was also a sub-theme related to this major theme. Both elected officials, as well as several of the other stakeholders, described Prince George's County as facing a number of pressing issues, from jobs, to development, to violence, to the education system, to access to food, and more. All of these issues were cited as priorities within the county, along with combatting the spread of HIV. As mentioned above, the elected officials who participated in this study indicated

they would face dissatisfaction and opposition from their constituents if they were to prioritize the implementation of a NEP over some of these other issues, which were considered by many stakeholders in this study as being more pressing than that of HIV in the IDU population. In addition, one stakeholder, a law enforcement official, said that the message of a NEP would be politically confusing, as it would counter the current efforts of county, state, and federal officials to eliminate the drug trade in the United States.

The Image of Prince George's County

The image of Prince George's County was another subject that emerged from the data collection process as a major study theme, with six of the twelve stakeholders mentioning it a total of 21 times. This theme was related to the sub-themes of denial of county issues, stigma, growth and community development, and Prince George's County as an affluent community. It was also related to the major themes of funding and needle exchange as a political issue.

Many stakeholders believed a primary barrier to NEP implementation was the importance of the image of Prince George's County. Stakeholders described this image as the "reputation" of the county, as a "public relations" issue, and as an issue of affluent African-American residents having "their noses in the air." Stakeholders described this as being an issue not only for county leaders, but also county residents.

One religious leader mentioned that historically, leaders in Prince George's County have been reluctant to admit that the county faces certain issues. This remark was made in the context of the image of the county, as the stakeholder claimed that Prince George's county was "still trying to act like a rural area, even though it's been faced with

metropolitan issues." This stakeholder described the history of Prince George's County as being in a "state of denial," and posited:

> *"P.G. County has tried to rest on its laurels of being the most affluent African American county in the nation - that it really didn't want to admit that it was starting to face some urban/metropolitan issues. Even with violence, P.G. County didn't want to admit for years that there was violence here. Same with HIV/AIDS, the numbers in these border communities can rival D.C.'s numbers. P.G. County is trying to act like there aren't problems here- so they aren't going to fight for the resources."*

This claim, that resources would not be allocated for programs that might harm the image of the county, was repeated by three other stakeholders. Several stakeholders stated arguments for funding, whether from the government or from private foundations, cannot be made without first admitting to a problem. The opinion of the participants in this study was that leaders in Prince George's County would be unwilling to fight for resources, because they were unwilling to admit these issues existed within their county. In this sense, stakeholders were not necessarily speaking about IDU and needle exchange specifically, but rather speaking more broadly about a variety of stigmatized social ills in the county.

Another issue that was re-iterated by more than one stakeholder was the image of Prince George's County as the most affluent African-American county in the United States. This was brought up by a religious leader, as well as by a public health official, in reference to the image of Prince George's County having an effect on whether a NEP could be implemented. As the public health official stated:

> *"I find that the county, unfortunately, it's predominantly African-Americans, but our noses are too up in the air. We don't want to really look at the issues that's really affecting us. I don't know if that's cultural or what, but it's a bad thing, because how can we live harmoniously and healthily if we don't face our issues to correct them?"*

Stakeholders also brought up this issue in relation to the image of Prince George's County as a positive place to live. These stakeholders posited that some in the county might be fearful that existence of a NEP would frighten off potential new residents. One stakeholder mentioned that this may be of a particular concern in areas of the county with higher property values.

Similarly, two stakeholders directly brought up the issues of NEPs in relation to broader county goals related to growth and economic development. One public health stakeholder believed county politicians might fear that desirable developers would not come to the county if a program such as a NEP existed. In addition, this stakeholder mentioned that it was not only the image of the county, but also the image of the politicians in the county that is at stake:

> *"If there wasn't the idea that PG County is a bunch of dirt bags over here, trying to get businesses out here and getting the FBI to build their buildings out here or something. If they want to attract business and government buildings and things like that, then they have to have a better image. And spending money on something like this [NEP] is very frightening to the politicians about their image."*

While this one comment was the only explicitly derogatory comment made against politicians in Prince George's County, several other stakeholders expressed frustration with the dysfunctional nature of the county's health system. Two stakeholders specifically expressed frustration with the health department, and two others spoke more generally about dysfunction in the county affecting the success of HIV prevention efforts. The public health stakeholder from District 5 mentioned the need for more coordinated care between hospitals and community-based groups, and cited the implementation of the Affordable Care Act as a potential facilitator of greater coordinated prevention efforts in Prince George's County in the future.

Stigma

The major theme of stigma was mentioned in relation to many of the other major themes, including funding, community awareness, harms of NEPs, benefits of NEPs, NEP as a political issue, and the image of Prince George's County. It was also related to many of the study's sub-themes. Besides the stigma associated with the spread of HIV, stakeholders said, there is an additional level of stigma against IDU, which compounds the issue. This compounded stigma has an effect on IDUs engaging with services, stakeholders said. One public health official discussed that many HIV positive IDUs delay treatment for their disease because of fear of discrimination, or being stigmatized. According to this stakeholder, this is an issue because it adversely affects the prognosis once the individual finally does seek treatment. In addition, one civic association representative from District 5 noted that IDUs in their tight-knit community might not be willing to access a NEP, for fear of being judged by their fellow community members. This person noted that they and other community leaders are aware of the activities that go on in their neighborhood, and that they would be likely to question someone if they suspected that person was injecting drugs. Thus, for an NEP to be effective, they stated, it would have to be located in an area outside of the community. This point was echoed by another civic association stakeholder from District 9, who expressed a satisfaction with current needle exchange services being located in the District of Colombia, as it required IDUs to travel outside of the county if they wanted to access services. This stakeholder stated that they would be glad to have the only NEPs in the area stay within the District of Colombia, rather than have one in Prince George's County.

Part of the reason this civic association stakeholder did not want a NEP in her community has to do her perception that drug users are unpredictable and dangerous, and could be a threat to community safety. This person indicated that they felt more comfortable with NEPs remaining in the District of Columbia, and not in Prince George's County. This theme of IDUs as unwanted members of the community was re-iterated by three stakeholders. As one drug treatment counselor said:

> *"They're looked at with a sore eye. Not dressed properly, has an odor, hands are very big due to the fluid or the abscesses on their arms and legs. So, they're looked at with a sore eye. We stereotype that population. We don't want that population in our community. But this is our community. We have to deal with everyone in our community, not just the middle class or the so-called fortunate. We have to deal with everyone."*

Stigma was mentioned in reference to both the harms as well as the benefits of NEPs. In relation to the harms, stakeholders suggested that engaging with a NEP might "out" a closeted IDU, therefor causing that person to be judged poorly in the eyes of their neighbors. Two civic association leaders mentioned this as a potential consequence of implementing a NEP. Other stakeholders explicitly mentioned the reduction of stigma as a potential benefit of implementing a NEP, especially in combination with other programs. For example, one drug treatment counselor suggested having a program where it was unclear from the outside what kinds of services individuals were receiving, so as to create some sense of privacy surrounding the act of needle exchanging, would reduce stigma. Another stakeholder, a public health official, talked at length about combining a NEP with other HIV prevention outreach efforts, so that IDUs would not necessarily be exposed by participating in the program.

In terms of community awareness, stigma was mentioned by stakeholders as one of the reasons the community is unaware of issues facing IDUs. A drug treatment

counselor and a public health official both discussed IDUs not having a voice. They cannot advocate for themselves, these stakeholders said, because they are closeted by stigma. As one public health stakeholder said, "they're closeted, IV drug users, and they probably don't want to come out in the open to voice their opinions, because of how the different discriminations can be brought or posed." This is related to the major theme of funding, because without proper advocacy, stakeholders suggested, programs are not likely to get funded.

The two religious leaders interviewed for this study differed in their perception of the relationship of county churches to stigma and marginalization. One of these stakeholders expressed frustration with the religious leadership and church-goers in the county, describing the stigmatization and discrimination against those who were HIV positive that they had witnessed in their religious community. The other religious stakeholder, however, indicated that churches in Prince George's County are doing more work with the underserved than they get credit for. This person described the work of their own congregation, which welcomes those who are HIV positive, and even participates in testing events in the community.

Segmented Data Comparisons

Although the sample was relatively small, segmented analysis by district and by community sector helped to identify where differences in stakeholder perceptions may lie. This analysis resulted in the discovery of some differences in the perspectives of stakeholders across the two districts. These differences included the described differences between inner-beltway and outer-beltway Prince George's County, the perception of

priority issues within the community, and the perceived benefits and harms associated with NEPs.

Minor differences were also found across community sectors. These minor differences were related to overall attitude towards NEPs, as well as the expertise and subject matter that would understandably be associated with each different sector of the community.

Comparisons Across Districts

As stated above, the participants themselves commented extensively on the inherent differences between the two areas of the country. This was a topic that was not initiated by the researcher, but rather emerged naturally during the conversations. Participants discussed differences in socio-economic status, educational attainment, resource allocation, and even the health issues faced in each area. Data analysis shows that the attitudes and opinions about certain topics brought up during the interview process did indeed differ between stakeholders from District 5, and stakeholders from District 9. However, the differences among study participants as they related to NEP implementation were limited to only a few themes and sub-themes. Specifically, participants from the two districts differed in their opinions regarding the harms of NEPs, the benefits of NEPs, and the difficulty of engaging drug users. These themes, as well as the frequency of references in each legislative district, are listed in Table 6.

All six stakeholders from District 5 mentioned poverty as a major issue in their community, compared to only one in District 9. Issues such as job loss, and lack of access to quality nutrition, were two issues mentioned in relation to socio-economic issues in

District 5 that were not mentioned for District 9. In fact, two stakeholders from District 9 commented on the relatively high average income of their residents, as compared to other parts of the county.

The cited differences between the two parts of the county besides socio-economic status notably included the difference in priority health issues, another study sub-theme. Only three of the six District 9 stakeholders mentioned that HIV was a serious health issue for their community, whereas all six stakeholders from District 5 mentioned HIV as a serious health issue. In fact, two participants from District 9 explicitly mentioned that HIV was not a major health problem for their communities. The major health issues that were mentioned by District 9 participants included the aging population, hypertension, certain types of cancer, and diabetes. While many of these health issues were also noted in District 5, HIV was commonly included as one of the top priority health issues in that part of the county.

Most stakeholders from both counties described their communities as not being very engaged with the political system. However, when asked what issues were important to their community, stakeholders from District 5 mentioned HIV several times, whereas no District 9 stakeholder listed HIV as a major issue faced by their community. Instead, District 9 stakeholders listed issues such as education, land use and development, and preserving their neighborhoods as issues that their community cares about.

Most of the stakeholders who brought up the potential harms of NEPs were from District 9. Out of six stakeholders from District 9, all but the representative from the public health sector listed what they thought would be potential harms of NEPs in their

community. In comparison, only one stakeholder from District 5, an elected official, mentioned a perceived harm of NEPs.

When asked, participants from District 5 consistently posited that they did not see any harms associated with NEPs, only benefits. Out of six stakeholders from District 5, a total of four individuals expressly stated that they did not see any harms or negatives associated with NEP implementation. In fact, a number of District 5 participants gave opinions that directly contradicted the perceived harms expressed by some of the participants in District 9. For example, three participants from District 5 expressly stated that they did not think used needles littering the community would occur with the implementation of a NEP. Also, three participants from District 5 stated that they did not think a NEP was going to increase drug use among existing drug users, or entice individuals to take up drug use.

In addition, stakeholders from District 9 described the theme of engaging IDUs as something that would be difficult, and cited a number of negative qualities of drug users that would prevent them from engaging meaningfully with a NEP. A total of four stakeholders from District 9 discussed the fact that IDUs would be unlikely to use a NEP the way it was intended. These stakeholders used attributes like addiction and lack of self-respect to describe why IDUs would be unlikely to take advantage of a NEP. On the other hand, stakeholders from District 5 saw the implementation of a NEP as an opportunity to engage a population that is otherwise marginalized or ignored. A total of three District 5 stakeholders discussed the fact that NEPs would be able to serve the IDU population in ways that current HIV prevention and treatment services currently are unable to do.

A major difference between the two religious stakeholders was observed, particularly in relation to stigma and the Christian church's relationship with HIV prevention efforts in Prince George's County. The religious leader from District 9 described their experience with churches being discriminatory against those living with HIV, while the religious leader in District 5 described their own church as being an advocate for HIV prevention efforts. This could relate to the different perspectives of each religious organization, however, and not to an inherent difference in religious perspectives between District 5 and District 9.

Table 6: Frequency of Themes Referenced, by District

Theme	**Total References**	**District 9**	**District 5**
Harms of NEP	18	14	4
Benefits of NEP	29	12	17
Engaging Drug Users	26	14	12

Differences by Community Sector

While the frequency of topics shifted significantly across sectors there was no notable difference in the opinions and perceptions of stakeholders according to the sector of community that they represented. The general attitude towards NEP implementation was positive in the public health, drug treatment, and religious sectors, was negative in the civic association sector, and was mixed in the law enforcement and elected official sectors.

As could be expected, each sector representative discussed topics that were relevant to their field. For example, public health stakeholders referenced previous studies on the effectiveness of NEPs for preventing the spread of infectious diseases, and elected officials spoke at length about the political climate within the county. As several

stakeholders identified themselves as representing more than one sector of the community, there were cases where stakeholders were able to discuss more than one topic at length. Overall, the stakeholders who participated in this study represented a diverse range of knowledge and opinions, but no distinct comparisons could be made as to the data from one community sector versus another.

Specific Aim 1: Barriers and Facilitators

In order to address the first of the three specific aims for this study, two deliberate elicitation questions were asked during the interview process to identify barriers and facilitators to needle exchange implementation in Prince George's County. These are listed in Table 3, on page 65. These two questions provided direct insight into the identification of barriers and facilitators. However, discussions with stakeholders also allowed for a natural explanation of contextual factors affecting the feasibility of NEP implementation, and stakeholders also identified barriers and facilitators without being prompted to do so. Throughout the process of data analysis, themes emerged naturally that could be categorized as either barriers or facilitators to needle exchange implementation in Prince George's County, and were subsequently coded as such. Some themes were coded as both barriers and facilitators, according to the context within which they were discussed by the participants. A barrier was defined as a force that would inhibit the implementation of a NEP in any way, while a facilitator was defined as a force that would assist with the implementation of a NEP. A robust list of both barriers and facilitators to NEP implementation can be found in Table 7.

Table 7: Study Themes Categorized as Barriers or Facilitators

Barrier Frequencies		**Facilitator Frequencies**		**Both Barriers and Facilitators**	
Affluence	7	Demonstrating need	17	Community acceptance	26
Community engagement	16	Influential groups	23	Land use and development	5
Community priorities	20	Influential individuals	10	Proximity to D.C.	9
Control	6	Raise awareness	31	Public safety	8
Difficulty engaging injection drug users	26			Religion	7
Drug use trends	10				
Dysfunction within the system	16				
Funding	42				
Image of Prince George's County	21				
IDU use as a declining problem	33				
Marginalization	19				
NEP a political issue	27				
Preserving the neighborhood	8				
Promoting drug use	17				
Resource allocation	12				
Stigma	33				
TOTAL	31		81		55

After completing all twelve interviews, it became clear that all of the barriers and facilitators could be described as either having an effect operationally or socio-culturally. An operational barrier or facilitator was defined as having to do with the political structural system operating in Prince George's County, as well as the logistical realities faced by proposed programs. A socio-cultural barrier or facilitator had to do with the perceptions and values of the community members. A total of six operational barriers were referenced a total of 84 times throughout the interviews, and nine socio-cultural barriers were referenced 107 times. Because of the greater frequency of their references, it seems that stakeholders from this study saw socio-cultural barriers as slightly more prominent than operational barriers. A total of three operational facilitators were mentioned 50 times over the course of the interview, and one socio-cultural facilitator was mentioned 31 times. Thus, it would appear that the operational facilitators were seen

as more prominent by study participants, with barriers in general outweighing the facilitators. These operational and socio-cultural factors are listed in Table 8.

Table 8: Operational and Socio-Cultural Barriers and Facilitators

	Barriers	**Facilitators**
Socio-Cultural	Affluence	Need to raise awareness
	Community engagement	
	Community priorities	
	Image of PG County	
	Marginalization	
	NEP as a political issue	
	Preserve the neighborhood	
	Promoting drug use	
	Stigma	
Operational	Funding	Demonstrate need
	Control	Influential groups
	Difficulty engaging IDUs	Influential individuals
	IDU a declining problem	
	Resource allocation	
	System dysfunction	

Both barriers and facilitators were mentioned quite often during the data collection process. However, barriers were referenced more than three times more often than were facilitators. In total, barriers were referenced 313 times, and facilitators were mentioned 81 times. Of the study themes and sub-themes, 16 were categorized as describing barriers, four were categorized as describing facilitators, and an additional five were categorized as describing both barriers as well as facilitators, depending on the context of the reference. These themes that described both barriers and facilitators included religion, public safety, business and development, proximity to the District of Colombia, and level of community acceptance for a NEP.

Religion was listed as both a barrier as well as a facilitator, mostly as a result of the two different depictions of the religious community given by the two religious stakeholders participating in this study. One religious leader described the churches in

Prince George's County as champions of social justice, who can be influential in advocating for necessary programs to improve the public's health, whereas the other religious leader described the stigma he had witnessed against persons living with HIV in many religious communities in the county as harmful to prevention efforts. Therefore, the sub-theme of religion was not included in the analysis of barriers and facilitators, because the two strikingly different accounts essentially cancel each other out. More research into the topic of religion and NEPs in Prince George's county will be necessary to more accurately describe this relationship.

All of the other themes that could be categorized as both barriers as well as facilitators, including public safety, business and development, proximity to the District of Colombia, and community acceptance, were described with greater complexity than that of religion, and as a result these are included in the analysis of barriers and facilitators below. In addition, all of the major study themes which were clearly categorized as either a barrier or a facilitator are described below in further detail.

Barriers to NEP Implementation

The operational barriers that were identified included the major themes of funding, proximity to the District of Colombia, and IDU as a declining problem in the county. Many stakeholders mentioned the fact that a program is not likely to be funded in Prince George's County without a clear and pressing need. Due to the troubled economic times, and a shortage of funding in general, stakeholders posited, only those issues that were of utmost priority to the community would be those that would be funded. Stakeholders mentioned issues such as education, violence, and jobs as being priority

community issues, but none mentioned IDU as a priority issue. In fact, all twelve stakeholders discussed the fact that IDU was an issue that had come and gone- it had been prevalent in the 1990s and early 2000s, but has not been at the forefront of community issues in over ten years. Similarly, stakeholders discussed the fact that community members would not be likely to support a NEP if they felt that there were other issues that take precedent. While a few stakeholders mentioned that their communities would be open to the idea of a needle exchange program, many of them followed up this point with a caveat about the importance of other issues to the community, and the lack of visibility of IDU rendering it a non-priority issue.

Another operational barrier is the proximity of Prince George's County to the District of Colombia, where many NEPs and related harm reduction services exist. Several stakeholders expressed the idea that individuals living along the border with the District of Colombia tend to be transient, and often carry more than one ID in order to access services in both jurisdictions. According to stakeholders, the impetus for paying for a NEP in Prince George's County, when the exact same services exist a short distance away, might not be so strong.

The socio-cultural barriers that were identified included the major themes of stigma, needle exchange as a political issue, and the image of Prince George's County. Several participants mentioned the fact that the reputation of Prince George's County is very important to residents and political leaders alike. The fact that Prince George's County as a whole is unlikely to acknowledge certain issues was mentioned in relation to the affluence of the African-American community, the rural history of the county, and the desire to attract businesses and developers. Because needle exchange pertains specifically

to HIV and IDU, two stigmatized issues, stakeholders suggested that a NEP would not be favorable in a county that places such high stock in its image and reputation. In addition, this was related to needle exchange as a political issue, especially as it pertains to business and development. Because more than one stakeholder described the leadership within Prince George's County as being concerned with attracting business and development to the county and raising revenue through property taxes, the nature of NEPs as non-priority, stigmatized issues, means that they would not be popular programs for politicians to pursue. One stakeholder described politicians as being afraid of programs like NEPs, because of the perception that the presence of these programs would displease potential developers, and thus threaten the economic strength of the county.

Although stakeholders generally described their communities as not being politically engaged, there could potentially be resistance from community members if plans for a NEP were undertaken in Prince George's County. Stakeholders mentioned that their communities are generally complacent when they are happy with things, but more likely to speak out when there is an issue or an action that they are unhappy about. Because several stakeholders posited that their communities would not support a NEP being implemented in their neighborhood, it is likely there would be outspoken opposition from some community members. The lack of acceptance is compounded by the fear that the presence of a NEP would be damaging to the neighborhood: threatening to bring about drug use or exacerbate drug use issues, and posing dangers for public safety, especially for children.

Assumedly, a NEP would need participants in order to exist, but several stakeholders posited that IDUs in their community would not use a NEP because of fear of being "outed."

Facilitators to NEP Implementation

As discussed above with the operational barriers to NEP implementation, the stakeholders deemed the ability to demonstrate a need as essential in order for a program to receive funding and community support. In this sense, an operational facilitator of a NEP in Prince George's County would be a systematic study of the prevalence of IDU in the county, as well as the rates of HIV and Hepatitis C transmission within this population. Stakeholders discussed the rising rate of Hepatitis C as a greater concern than that rate of HIV for Prince George's County residents, and suggested that it would be easier to demonstrate a need for a NEP if Hepatitis C was used as the focus for prevention. Stakeholders discussed conducting studies within the county to demonstrate this need. To date, no study has been implemented in Prince George's county to examine the rates of HIV and Hepatitis C in IDUs, this data has only been collected through self-reported mode of transmission at the time of diagnosis (Maryland Department of Health and Mental Hygiene, 2010). However, both of the public health stakeholders posited that such a study would not be difficult for the health department to implement.

The primary facilitator that was brought up by stakeholders throughout the interviews was the influence of certain individuals and groups who have the ability to create change within the county. Several community health coalitions were named as potential facilitators of change, as were non-profit organizations and churches. One

stakeholder discussed the need for younger individuals to become involved with these groups, as they are the ones with a long-term interest in the direction of the county's health. The newfound University of Maryland, College Park School of Public Health was listed as a potentially influential organization by one stakeholder, although this person noted that the newness of the school meant that it was still developing relationships within the community, and that it would take some time before the school could garner trust with the community and became a force of change within the county.

Several influential individuals were also named as potential facilitators for NEP implementation in Prince George's County, with the county executive being named by more than one stakeholder. Two different stakeholders brought up the county executive as an ally to public health and HIV prevention efforts in Prince George's County. One religious stakeholder acknowledged the county executive as a rare politician who is willing to take a critical approach to the issues facing Prince George's County, as opposed to ignoring them. One public health stakeholder discussed the county executive's willingness to discuss HIV prevention efforts when so many politicians were unwilling to do so, and that he seemed to have some knowledge of harm reduction efforts. This is critical in relation to NEP facilitators, because the language of the law allowing NEP in Prince George's County specifically cites the county executive as being responsible for the appointment of a NEP task force within the county (Maryland General Assembly, 1998). Other individuals who were named as potentially influential included a specialist at Dimensions Healthcare Associates, who has been involved in HIV prevention advocacy in the county; and a PhD student in the University of Maryland,

College Park School of Public Health, who is leading an HIV prevention task force through the Prince George's County Health Department.

A socio-cultural facilitator to NEP implementation is awareness within the community, a major study theme. Many stakeholders discussed the fact that a program would not receive support unless the community was able to understand the issue and recognize its importance. To that end, stakeholders suggested a communications campaign to spread the word about the importance of a NEP for HIV and Hepatitis C prevention. The education of the community is a facilitator to NEP implementation because many stakeholders posited that one of the reasons people do not support it is that they do not understand it. Also, in addition to educating about the severity of these issues, stakeholders emphasized the importance of raising awareness to combat stigma and marginalization. Stakeholders suggested that if the stigma associated with HIV and drug addiction could be lessened, there would be a greater chance of community acceptance of a NEP.

Stakeholders also suggested seeking out and informing key strategic partners and getting those individuals on board first. Because the issues affecting IDUs go largely unnoticed, even in prevention circles, it was suggested that community groups that are doing related work should be briefed on the importance of NEPs, so that partnerships and coalitions may be formed. These partnerships and coalitions were mentioned by several stakeholders, as they could serve as facilitators to NEP implementation.

Specific Aim 2: Feasibility of Needle Exchange Program Implementation

In order to address the second specific aim of this study, the feasibility of implementing a NEP in Prince George's County was assessed by comparing the frequency of barriers with that of facilitators to NEP implementation, as identified by the key community stakeholders who participated in this research. Based on this assessment, the likelihood of a NEP being implemented in Prince George's County in the immediate future is low. Besides the shear frequency of barriers versus facilitators mentioned, the number of operational barriers outweighs the number of operational facilitators, which can impede tangible progress in the short term. However, the presence of certain facilitators, as well as the difference in perception between stakeholders from the two districts, suggests that the implementation of a NEP in Prince George's County at a later point in the future, and under the right set of circumstances, may be possible. The feasibility of NEP implementation is discussed at length in Chapter 5.

Specific Aim 3: Recommendations to Policy Makers and Public Health Officials

In order to address the third specific aim of this study, the researcher has developed recommendations for policy makers and public health officials. These recommendations are based on the barriers and facilitators identified in the data analysis process, as well as the above assessment of the feasibility of NEP implementation in Prince George's County. In addition, the Prince George's County AIDS Prevention Sterile Needle and Syringe Exchange Program law, passed in 1998, contains key instructions from the Maryland State Legislature on how Prince George's County may carry out a NEP, and these instructions were incorporated into the recommendations

made to policy makers and public health officials. These recommendations, as well as their explanation, are listed in Chapter 5.

Chapter 5: Discussion

Discussion

Study Strengths

Study Limitations

Conclusion

Discussion

The process of interviewing twelve key community stakeholders from Prince George's County resulted in a richness of information that was then used to 1.) identify the barriers and facilitators to NEP implementation, 2.) assess the feasibility of NEP implementation, and 3.) develop recommendations to policy makers and public health officials. Each stakeholder seemingly possessed an intricate knowledge of their county, as well as their field of expertise, and was able to speak at length about the issues that were most relevant to this topic, and to their communities. This discussion also includes the relationship of study findings to the theoretical principles that served as a framework for this research, as well as the relationship to the previous literature that was used to guide it.

Study Findings and Theoretical Frameworks

The findings from this study suggest that needle exchange is a health behavior that is strongly influenced by all five levels of the SEM, as the all of themes identified in this study addressed at least one level of influence. Stakeholders touched on the policy level of the SEM by discussing the power structure of county leadership and policy through the themes of the NEP as a political issue, resource allocation, and funding. They touched the organizational level of the SEM by discussing influential groups and organizations within the county, the need for control for a NEP, and model NEPs. They touched on the community level of the SEM through the themes of community acceptance, community engagement, community priorities, differences between inner-beltway and outer-beltways Prince George's County, religion, poverty, and affluence.

The inter-personal level of the SEM was addressed through the themes of marginalization and difficulty engaging IDUs, and the intra-personal level was addressed by discussing stigma, marginalization, and difficulty engaging IDUs. All of the levels of the SEM, as well as the themes from this study associated with them, are listed in Table 9. (McLeroy et al., 1988)

Table 9: Study Findings and the Social Ecological Model

Level of SEM	**Themes Addressed**
Policy	NEP as a political issue, Resource allocation, Funding
Organizational	Influential groups, Influential organizations, Model NEP programs
Community	Community acceptance, Community engagement, Community priorities, Differences between inner-beltway and outer-beltway Prince George's County, etc.
Inter-personal	Marginalization, Difficulty engaging IDUs
Intra-personal	Stigma

The findings of this study are also related to the HRM, as most stakeholders claimed that they saw a benefit in reducing risk of disease transmission, even if they were opposed in general to the idea of NEPs. This relates to a central principle of the HRM, which emphasizes the importance of reducing risk in lieu of abstinence (Harm Reduction Coalition, 2006). In addition, several stakeholders in this study discussed the importance of providing services that are uniquely tailored to IDU populations, which accomplishes

the philosophical goal of the HRM to meet, rather than dictate, the needs of the population being served (Lushin and Anastas, 2011).

Specific Aim #1: Barriers and Facilitators

Much of what these stakeholders described about their county's relationship with NEP implementation for HIV prevention was similar to perceptions and themes captured in the literature review, although there were some notable differences. The themes brought up by stakeholders in this study referenced NEP barriers and facilitators that had been mentioned in previous studies, as well as the effect that these barriers and facilitators have on the feasibility of NEP implementation (Gent, 2000; Sherman and Purchase, 2001; Buchanan et al., 2003; Vernick et al., 2003; Downing et al., 2005; Shaw, 2006; Tempalski et al., 2007; Philbin et al., 2008; Barr, 2011; Heller and Paone, 2011). Specifically, stakeholders discussed the politics of needle exchange (Bar, 2011; Buchanan et al., 2003; Vernick et al., 2003; Downing et al., 2005; Shaw, 2006) the role of community acceptance in NEP success (Gent, 2000; Downing et al., 2005; Tempalski et al., 2007), the relationship between NEPs and religion (Freimuth et al., 2001; Philbin et al., 2008; Heller and Paone, 2011) and stigma (Thomas and Crouse Quinn, 1993; Vanderwaal et al., 2001; Kaiser Family Foundation, 2004; David et al., 2005), all of which were listed as major themes in previous research on NEP implementation.

Funding emerged as a primary barrier, which is not surprising, considering the unstable economic climate facing many communities in the United States today, Prince George's County included. Research has shown that during times of economic strife in the United States, health issues are treated differently by policy makers than during

economically stable times (Longest, 2010). The importance of health policies decline in the opinions of both lawmakers and citizens, as the importance of strengthening the economy and providing jobs rise (Longest, 2010). Because there is a ban on federal funding for NEPs across the country, the burden of funding a program would fall to either private entities or to the local government (Barr, 2011). This distinguishes NEPs from other heath programs and policies, many of which are eligible for support from such funding agencies as the Centers for Disease Control and Prevention (CDC). This political reality at the federal level reflects the unpopularity of NEPs as a form of health policy in the United States, and impedes the ability for implementation at the local level.

While most stakeholders who participated in this study listed funding as a potential barrier to NEP implementation, some saw the cost-effectiveness of such a program. In fact, studies conducted within the United States and around the world have found that municipalities that invest in NEPs will ultimately save money as a result of a reduction in HIV/AIDS-related healthcare costs (Harris, 2005; Woodack, Cooney, 2006; Belani and Muenning, 2008). In this study, two stakeholders raised this point about cost-effectiveness: one representing public health, and one representing the drug treatment sector. Arguably, these two stakeholders would possess a more in-depth understanding of the costs associated with the healthcare system than other stakeholders represented in this study, as well as the community at large in Prince George's County. Therefore, although the argument of NEPs as a cost-saving measure may be common knowledge to individuals working in certain fields, the information has not been shared with or understood by other leaders and community members. In addition, although NEPs have been shown to be cost-effective when compared to the cost of supporting a lifelong HIV

infection, many of the analyses on this topic do not take in to consideration the density of IDUs in the area being assessed (Harris, 2005). Since, to this researcher's knowledge, no study has ever been conducted to examine the density of IDUs in Prince George's County, it is unclear whether or not an argument in favor of funding for such a program would be justified.

The high property values and relative affluence of Prince George's County were brought up in reference to barriers to NEP implementation in this study, which is not surprising due to the fact that neighborhoods with high property values have resisted NEPs in other areas around the country (Buchanan et a., 2003; Wenger, Arreola, Kral, 2011). In New York City, NEP opponents specifically cited the local real estate market as a key concern associated with the implementation of a program there (Heller and Paone, 2011).

One point that was made by stakeholders in this study, which distinguished Prince George's County from other jurisdictions considering NEPs, is the county's rural nature. The inclusion of stakeholders from two legislative county districts helped to show how vastly different the urban areas are from the rural areas in Prince George's County, and how the rural areas are resistant to being compared with their urban counterparts. This may be related to the affluence of the county, as the more rural areas are also those with property values (Maryland Department of Health and Mental Hygiene, 2010; U.S. Census Bureau, 2012).

The image of Prince George's County as a thriving community and a desirable place to live was brought up several times by stakeholders in this study discussing implementation of a NEP. The image of Prince George's County was cited as one of the

reasons explaining the lack of community support for NEPs described by stakeholders. The reasons that stakeholders gave for the lack of community support included themes that had been brought up in previous research of community acceptance of NEPs, including stigma against HIV and drug users, fear of increased drug use, and fears for public safety and environmental hazards (Keyl et al., 1998; Vanderwaal et al., 2001; Downing et al., 2005; Wenger et al., 2011).

As noted in the literature review, the concerns of vocal constituents are important to the decisions made by policy makers (Buchanan et al., 2003; Downing et al., 2005; Shaw, 2006). It is possible that the negative community perceptions of NEPs described above may be at play in the unwillingness of policy makers to address issues related to NEPs. Because they are motivated by a general desire to be re-elected, most lawmakers will only take action on an issue when the level of conflict surrounding that issue is low (Longest, 2010). Because the issue of NEP has been controversial in other municipalities around the country, lawmakers in Prince George's county may be unwilling to take it on without the urging of their constituents. In general, stakeholders in this study described their community members as fairly unengaged with the political process, but there were two important caveats to this description. First, three stakeholders mentioned the fact that community members are most active when they are upset about an issue or an action taken by the government, and are generally complacent otherwise. This would mean that although residents may not be vocal about NEPs now, if a plan for one were to surface, residents might react negatively and vocally. Second, two stakeholders described the inconvenient times established for community forums, indicating that perhaps community residents are unable to be engaged with issues. Therefore, the true perception of NEPs

among community members in Prince George's county might not have been captured accurately thus far. To the researcher's knowledge, this type of information has not been captured in previous studies, making this a key finding of this thesis.

Still, previous research does indicate that municipalities with politically active community members and advocacy groups are more likely to have a NEP (Buchanan et al., 2003; Tempalski et al., 2007). The fact that several influential groups and individuals were mentioned throughout the interviews for this study suggests that there is some level of community engagement on health issues in the county, although it was unclear whether these groups have taken any stance on NEPs. In previous research, it has been found that the most successful NEPs are those that are started by a dedicated group of community activists (Downing, 2005). Additionally, previous research has identified the LGBTQ community as a key advocate for HIV prevention issues, and cities with a high percentage of same-sex households were found to be more likely to implement a NEP (Gent, 2000). For the purposes of this study, the researcher could not find data on the percentage of same-sex couples in Prince George's County. However, according to the stakeholders, the presence of LGBTQ advocates in the county does not seem to be very strong, suggesting that support from this demographic faction might not be as instrumental there as in other jurisdictions around the county. More research would be needed to explore this topic, in order to understand the relationship between same-sex households and NEP implementation in Prince George's County.

Several participants in this study also discussed the possibility of comprehensive care associated with NEPs, especially in relation to their idea of a model program. The two public health stakeholders and one religious leader indicated that NEPs would be

beneficial because they would be part of a comprehensive approach to HIV prevention, and would also have an effect on other risky behaviors, such as unprotected sex. This is the case with NEPs operating in both the District of Colombia as well as in Baltimore City (Paquette and Mellor, 2012). Programs in Prince George's County's nearest large cities are based on a holistic harm reduction approach, and often distribute safer sex kits in addition to clean needles and fresh works (Paquette and Mellor, 2012). One of the stakeholders from this study mentioned a need to outreach to the LGBTQ community, because the rate of HIV transmission is highest in men who have sex with men (MSM) in Prince George's County. Although previous literature has discussed the importance of same-sex households in predicting the presence of a NEP, no study could be found that proposed integrating LGBTQ services with NEP services (Gent, 2000). Thus, this is a key finding that emerged from this data.

Previous studies have shown that the presence of religious traditionalists is negatively associated with the presence of NEPs, that religious leaders have spoken out against NEPs, and that religious leaders are more uniformly opposed to NEPs than other groups of stakeholders (Philbin et al., 2008; Heller and Paone, 2011). In the data from this study, one religious leader described his church as being champions of public health efforts and community empowerment, embracing persons with HIV and even holding testing events through their church. However, the second religious leader interviewed for this study indicated his disappointment with the religious community for their stigmatization of HIV positive individuals, and their unwillingness to help with prevention efforts. The divergent attitudes of the religious leaders who participated in this

study, as to the relationship between religion and harm reduction, leaves this topic to be further explored.

The reduction of IDU as a public health issue in Prince George's County may suggest that a NEP is not necessary at this time. Based on the data provided by stakeholders who participated in this study, IDU is no longer a priority issue. However, as recently as 2007, 10% of those contracting HIV in the county identified their mode of transmission as IDU (King, 2007). As several of the stakeholders in this study pointed out, IDUs are a hidden population, and because of issues of stigma and marginalization, the issues affecting them are often not noticed or acknowledged by the greater community. So, although the issue might not be receiving a lot of attention, the potential exists to raise awareness and take action to address HIV transmission in the IDU population. In addition, during the time of the passage of the Maryland State drug paraphernalia law immunity, HIV transmission in the IDU population in Prince Georges County was undoubtedly a priority health issue (Maryland Department of Health and Mental Hygiene, 2010). This is supported by data from the Maryland Department of Health and Mental Hygiene (DHMH), which reported that in 1998 the rate of HIV transmission attributable to IDU was approximately 20% (Maryland Department of Health and Mental Hygeine, 2010). Statements made by stakeholders in this study also supported the DHMH data, asserting that in the late 1990s and early 2000s, injection drug use was prevalent in their communities. Therefore, it is important to note the barriers and facilitators identified in this study as they are a representation of the county's willingness to address certain public health issues. These same barriers and facilitators may become relevant if there were ever a resurgence of HIV or IDU in the community, or if some

other intervention that carried the same amount of controversy and unpopularity were to ever become necessary.

Specific Aim #2: Feasibility of NEP Implementation

According to the stakeholders, in order for a NEP to be feasible in Prince George's County, its funding must be both available and justified (i.e., the need for the program must be clearly demonstrated as a county priority). The current economic climate and lack of a visible prevalence of IDU in the county present significant barriers to both of those circumstances. As discussed above, research has shown that health policy is given a lower priority in the United States during times of economic downturn (Longest, 2010).

The fact that all of the twelve key stakeholders interviewed for this study denied seeing IDU as a significant drug use trend suggests that this issue may be on the decline. Even the drug use counselors, who would arguably have the most familiarity with drug use trends in the county, speculated that the percentage of patients they see for IDU is only about 10% of their total caseload. Without a high prevalence of IDUs in Prince George's County, the number of HIV transmissions in IDU populations would arguably not be enough to warrant the energy and resources necessary to implement a NEP. While data from the Maryland Department of Health and Mental Hygiene suggests that rate of HIV transmission in IDUs is still a notable threat, the fact that key community stakeholders do not see it as such is significant (Maryland Department of Health and Mental Hygiene, 2010). While these twelve stakeholders do not necessarily represent the entirety of Prince George's County's decision-makers, their lack of awareness of IDU

suggests how truly hidden this behavior may be, and how difficult it may be to garner support for a program to address it. This is another key finding from this study. To my knowledge, no other studies considered the perceptions of drug use trends from community stakeholders.

In addition, it seems there is a lack of political motivation in the county's leadership to implement a NEP. This may be because the issue is no longer on the forefront of county policies, or it may relate to some of the other issues that the stakeholders brought up, such as stigma and the importance of property values, business, and development. Previous studies have suggested that each of these factors may play a role in the opposition to NEP implementation (Keyl et al., 1998; Vanderwaal et al., 2001; Downing et al., 2005; Heller and Paone, 2011; Wenger et al., 2011). There is also a good chance that the lack of political motivation comes from a limited amount of resources in a time when there are many pressing community needs. Several of the stakeholders explicitly mentioned the difficult economic times as a barrier to NEP implementation, mostly because resources are already scarce for other needed programs. To add another cost to the county, when such issues as education and job loss are being so hard felt, would likely be an unpopular political decision. Also, because of issues such as stigma and marginalization, the issues that affect IDUs do not seem to be a central concern to the county. It is unlikely that this population will advocate for itself, and so the issues that affect IDUs will not be considered top priorities for the county.

While unlikely now, the implementation of a NEP in Prince George's County is not impossible in the long run. The number of barriers certainly outweigh the facilitators, but yet there was some indication from the stakeholders that a program may be possible

in the future, under the right circumstances. The factors that stakeholders cited as being potential facilitators to NEP implementation include a new wave of influential groups and individuals who have the ability to foster change in the county. Previous literature has discussed the importance of advocates and activists in NEP implementation (Downing et al., 2005; Tempalski et al., 2007; Heller and Paone, 2011). Several stakeholders referred to the new county executive as more flexible and open to discussing issues that affect public health than his predecessors. As stated above, this is important because the legislative rules imposed by the Maryland State Legislature on the creation of a NEP in Prince George's County highlight the involvement of the county executive (Maryland General Assembly, 1998). In addition, several stakeholders mentioned the potential within community groups, particularly those focused on improving health and those already working on issues related to HIV. Other research has suggested that successful NEPs are those that have high levels of buy-in from multiple community partners (Downing et al., 2005). There are several groups currently working separately on HIV prevention and other community health issues in Prince George's County, and if these groups choose to work together to advocate for a NEP, they would have a greater chance of being successful.

There is also potential for a NEP if community awareness can be raised around issues pertaining to HIV transmission. Stakeholders mentioned some compelling arguments that could be used to foster support for the implementation of a NEP, either among policy makers or community members. One of these arguments is related to demonstrating a need for a NEP. While the rates of HIV are declining in the county, stakeholders described the rate of Hepatitis C as escalating. If support needed to be

garnered around an issue, it seems Hepatitis C could present a more justifiable issue that would garner commitment, as it becomes more of a pressing threat to the health and wellbeing of the community. In addition, both of the public health stakeholders interviewed for this study described the cyclical nature of drug use trends, indicating that striving to implement a NEP now would be ahead of the curve in terms of a returning wave of IDU. This cyclical nature of drug use trends was not something that was found in previous literature, and thus represents an original finding of this study.

Another argument in favor of a NEP is the prospect of comprehensive care and the subsequent cost-savings associated with it. Several studies have demonstrated the cost effectiveness of NEP as a tool for HIV prevention, when compared to the cost of sustaining a lifetime HIV infection (World Health Organization, 2002; Harris, 2005; Wodack and Cooney, 2006). Two stakeholders discussed the fact that patients seeking care in late stages of a disease like AIDS present a greater burden to the healthcare system because of a greater number of symptoms and a less optimistic prognosis. If a NEP were implemented in conjunction with other harm-reduction activities, such as community education and safer sex kit distribution, the full spectrum of HIV prevention would be addressed, which could potentially lessen the patient loads seen in hospitals. In addition, the neighborhood-based model that was proposed by one public health stakeholder, in which a mobile van unit is used to distribute harm reduction goods and services, might have the ability to reduce barriers to accessing care by engaging IDUs where they are, instead of requiring them to travel for preventive care. This argument would appeal to leaders and policy makers who are concerned with balancing the budget

of the county. If NEPs were framed as a cost-saving measure, it might be easier to rally political support for the implementation of a program.

Finally, it appears that the feasibility of a NEP might be more likely in District 5 than in District 9. According to the differences in perceptions of harm reduction activities between stakeholders from the two districts, it appears that leaders in District 5 are much more open to the idea of a NEP than those in District 9. Also, the transmission of HIV was cited more frequently as a priority health issue there. Because of stakeholder's description of the differences between inner-beltway Prince George's County and outer-beltway Prince George's County, it is possible that this assumption could be applied to these two areas as extensions of Districts 5 and 9. Thus, it would be worth examining the possibility of operating a NEP within the beltway, as opposed to the possibility of operating a NEP throughout the entire county.

Specific Aim #3: Recommendations to Policy Makers and Public Health Officials

The recommendations made to policy makers and public health officials were based on the major themes identified in this study, as well as the 1anguage of the 1998 law that allows Prince George's County to operate a NEP. The law names the county executive as the individual responsible for designating an advisory committee, comprised of various stakeholders from Prince George's County, to provide oversight on procedures and implementation. As for the operation of the program, the law designates the Prince George's County health officer as the individual responsible for hiring a program director, and specifies that all program activities will take place within Prince George's County Health Department. Thus, the researcher re-iterates the instruction of the original

piece of legislation, and gives the following recommendations based on the language of the law:

1. That the county executive follow the language of the Prince George's County AIDS Prevention Sterile Needle and Syringe Exchange Program law, and designates an advisory committee made up of two public health academicians, two law enforcement representatives, one representative from the Maryland State Department of Health and Mental Hygiene, one representative from a community-based organization, one representative from an AIDS advocacy organization, one drug treatment counselor, one recovering injection drug user, and up to three additional stakeholders identified by the county executive.

2. That the Prince George's County Health Department work with the above mentioned advisory committee to create a program proposal for a needle exchange program in Prince George's County, and identify staff members within the Health Department to work on this.

In addition to the above recommendations, the researcher makes the following recommendations based on the analysis of data collected from key community stakeholders in Prince George's County, as well as well as a comprehensive literature review of previous NEPs:

1. When assembling members for the needle exchange task force, the county

executive should include influential individuals representing advocacy groups, such as health action councils, persons living with HIV/AIDS, religious groups, and groups representing the LGBTQ community.

2. That the Prince George's County Department of Health collect data on the rate of injection drug use in the county, as well as the rate of HIV and Hepatitis C transmission within the injection drug use population in any upcoming community health assessments.

3. That the county executive commissions the Prince George's County Council and the Prince George's County Health Department to examine the financial commitments made by the county for HIV prevention efforts, and compare those to the healthcare costs of treating lifetime HIV infections. This will help the county to make their efforts against HIV/AIDS more efficient, as resource usage can be reevaluated to prioritize prevention.

4. That the Prince George's County Health Department explore options for more comprehensive care for injection drug users, working with community organizations as well as local hospitals to prevent the spread of HIV, Hepatitis C, and other infectious diseases.

5. If funding for any projects or tasks related to the implementation of a needle exchange program is not available from local sources, that county leaders explore

other opportunities. These opportunities may include identifying sources of private funding for other needle exchange programs around the country, particularly those in the District of Colombia and in Baltimore City. These opportunities may also include the provision of funds through the Maryland State Department of Health and Mental Hygiene.

6. In addition to the above recommendation, the researcher recommends that advocates within Prince George's County who wish to work on this issue seek out partnerships with advocates at the state level. Specifically, several of the original co-sponsors of the Prince George's County AIDS Prevention Sterile Needle and Syringe Exchange Program law are still currently serving in the Maryland House of Delegates, and could potentially be instrumental in the process of needle exchange program implementation.

The recommendations made to policy makers and public health officials were based on the assumption that the political motivation exists with the county executive, as well as within the Prince George's County Health Department. If the political motivation is not found with the policy makers and public health officials, there is a chance that the task of implementing a NEP could fall to the local community-based organizations working within the county. However, for this to take place, an amendment to the current immunity law would have to be passed by the Maryland State Legislature that would designate any organization approved by lawmakers as being able to carry out a NEP (Maryland State General Assembly, 2013).

Study Limitations

The stakeholders invited to participate in this study represent a diverse range of relevant expertise from two of the different areas within Prince George's County. However, the sample itself was particularly small. The sample size for this study was appropriate for the generation of themes and sub-themes through qualitative data analysis, for key community stakeholders to describe their perceptions of the issue, and of their community's attitudes and beliefs. However, the data generated from this small sample could not be used to describe perceptions of the community at large.

The small sample size associated with this study also affects the conclusions that can be drawn from the data. An example of this is the divergent perceptions of the two religious stakeholders who participated in this study. Although they offered diverse perceptions and opinions on a number of the themes identified for this study, their perception on religious involvement differed significantly, each one essentially nullifying the other. Thus, while the themes presented in this study are useful for a preliminary qualitative analysis, a larger sample is needed to draw more concrete conclusions about the barriers and facilitators to NEP implementation in Prince George's County.

Although several measures were taken to reduce sampling bias, participants were still drawn from a convenience sample. As a result, some sampling bias was likely to have occurred in this study. In addition, the researcher experienced a good amount of difficulty recruiting stakeholders once they had been contacted, with a number of individuals declining to participate, and even more not responding to e-mails and phone calls. Therefore, there is a strong possibility that the respondents who agreed to

participate had an existing interest in this topic, and therefore their own responses to the interview questions could have been biased.

There is a likelihood that social desirability bias occurred during the interview process, as many of the questions in the interview schedule were intended to elicit sensitive information about the communities within which stakeholders lived and worked. For example, because of the admitted bias against IDUs, stakeholders may have been reluctant to admit that there was a high prevalence of IDU in their community. Because the issues surrounding NEP are so stigmatized, and because the importance of Prince George's County was continually alluded to, there is a chance that the stakeholders interviewed for this study were not completely forthcoming about this issue. Other sensitive topics, such as the rate of HIV, poverty and affluence, and the political system within the county, may have been affected by this bias as well.

There is also a chance of interviewer bias resulting from slight variations in the way the researcher delivered each interview question. Deliberate measures were undertaken to reduce the likelihood of interviewer bias, following the same interview schedule for each participant, as well as pre-testing the schedule to identify where interviewer bias might exist. Still, because of human error, there is a chance that interviewer bias may have occurred.

Study Strengths

Previous studies looking at NEP barriers, facilitators, and feasibility, have predominantly been conducted in urban municipalities (Keyl et al., 1998; Gent, 2000; Buchanan et al., 2003; Downing et al., 2005; Tempalski et al., 2007; Heller and Paone,

2011; Wenger et al., 2011). This study is unique in its examination of the contextual factors affecting potential NEP implementation in an area with mixed urban and rural areas, with a diverse socio-economic landscape. The deliberate inclusion of two different districts in Prince George's County allowed for a representation of stakeholders from both the more urbanized, inner-beltway area, as well as from the more rural and affluent outer-beltway area. Thus, this study provides some insight into the different attitudes and priorities depicted in the two parts of the county in reference to NEP implementation, but also in reference to other HIV prevention methods.

The inclusion of the six community sectors chosen for participation in this study (law enforcement, religious leaders, public health, drug treatment counselors, civic association leaders, and elected officials) provided a richness and a diversity of data to address the research question and specific aims of this study. These stakeholders represented sectors of the community that are extremely relevant to NEP implementation, and thus were the appropriate choices for inclusion in this study. Using community informants to identify the convenience sample, and random selection of participants for inclusion, helped to reduce selection bias. This meant that the attitudes and perceptions captured from the stakeholders were divergent from one-another, and did not exclusively represent those who oppose needle exchange, or those who are in favor of it.

In addition, to the researcher's knowledge, no previous research has been conducted as to the feasibility of NEP implementation in Prince George's County. This research is important because of the legislative steps taken to grant immunity to the Maryland State drug paraphernalia laws for the explicit reason of allowing Prince George's County to operate a NEP. The fact that a NEP has not been implemented in the

county since the immunity was first granted in 1998, over 12 years ago, warranted an investigation into what forces where at play in affecting this issue.

As stated above, the barriers and facilitators identified through this research are a snapshot of the contextual factors that pertain to NEP implementation in Prince George's County. Although HIV in the IDU population might not currently be a priority health issue, it is important to understand the reasons why a NEP was not implemented, and to discuss the feasibility of such a program if it were ever deemed necessary.

This study establishes a basis for future research. The themes and sub-themes generated through the Grounded Theory Model can potentially be used to generate hypotheses as to the barriers and facilitators to NEP implementation in Prince George's County. These hypotheses could be used to conduct more robust studies, using both qualitative and quantitative methods.

Next Steps

While the future of NEPs in Prince George's County is unknown, steps can be taken to further the understanding of this important public health issue. First, the findings from this study will be delivered to study participants. Participants will have the opportunity to reflect on the study's findings, and may choose to use these to act within their own community sector to address the HIV prevention needs of IDUs in Prince George's County. Second, the recommendations from this study will be delivered to the appropriate stakeholders, who may choose to consult them to inform their work.

The findings from this study can be built upon through additional and more robust research. Mixed methods studies using quantitative data would be useful to clarify some

of the themes discussed by the twelve stakeholders in this study. Specific topics that could be further explored include the relationship of the religious community to NEP feasibility in the county; the perceptions, attitudes, and knowledge of needle exchange in the greater community; and the true nature and rate of injection drug use in the county. Through additional research, NEP advocates can better identify supporters and potential partners, as well as strategies to implement a program.

Conclusion

This thesis was a small, qualitative study that explored the barriers and facilitators to NEP implementation that may exist in Prince George's County. Data from this study was used to assess the feasibility of such a program in the county, as well as generate recommendations to policy makers and public health officials. It included a small sample of key stakeholders whose perceptions were relevant to the topic of this study, and provides a snapshot of the contextual reality facing NEPs, and harm reduction programs in general within the county.

Based on the findings of this study, the implementation of a NEP does not seem feasible at this point in time in Prince George's County. However, there is potential for influential groups and individuals to take action, for studies to be conducted to justify the implementation of a program, and for community acceptance for a NEP to be garnered. Therefore, the implementation of a NEP may be possible in the future, if these conditions are met. In addition, the feasibility may be greater inside the capital beltway, where stakeholders' attitudes towards NEPs were more positive, and where there seems to be a greater need for such a program.

This study establishes a basis on which more research can be conducted. From the various qualitative themes and sub-themes discussed in this document, hypotheses may be generated for more qualitative and quantitative examinations of NEP feasibility in Prince George's County. Some topics that emerged as particularly needing further examination were the relationships of religion, and the number of same-sex households to NEP implementation. In addition, further investigation into the prevalence of IDU in the county, as well as the rate of HIV transmission in this population, are needed.

The recommendations made as a result of the findings of this study were directed to both the county executive, to the health department, as well as any NEP advocates in Prince George's County. These recommendations were based on the barriers and facilitators as described by study participants, as well as the language set forth in the original NEP law.

This study is a result of the application of competencies acquired through the Masters of Public Health- Behavioral and Community Health program at the University of Maryland, College Park School of Public Health. These competencies include both public health core and community health education cognate competencies (Appendix 7).

Appendix 1- IRB Approval Letter

UNIVERSITY OF MARYLAND
INSTITUTIONAL REVIEW BOARD

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DATE:	November 30, 2012
TO:	Mary Garza, PhD, MPH
FROM:	University of Maryland College Park (UMCP) IRB
PROJECT TITLE:	[397599-1] Barriers and Facilitators to Needle Exchange Implementation: Perceptions of Community Stakeholders in Prince George's County, MD
REFERENCE #:	
SUBMISSION TYPE:	New Project
ACTION:	APPROVED
APPROVAL DATE:	November 30, 2012
EXPIRATION DATE:	November 29, 2013
REVIEW TYPE:	Expedited Review
REVIEW CATEGORY:	Expedited review category # *6 and 7*

Thank you for your submission of New Project materials for this project. The University of Maryland College Park (UMCP) IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure which are found on the IRBNet Forms and Templates Page.

All UNANTICIPATED PROBLEMS involving risks to subjects or others (UPIRSOs) and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. Please use the appropriate reporting forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

This project has been determined to be a Minimal Risk project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of November 29, 2013.

Please note that all research records must be retained for a minimum of three years after the completion of the project.

Appendix 2: Invitation to Participate

Hello,

My name is Natasha Paleau. I am a master's student in the University of Maryland, College Park School of Public Health, Department of Behavioral and Community Health.

For my master's thesis, I am researching the barriers and facilitators to needle exchange programs for HIV prevention in Prince George's County. I want to be able to explore the perceptions of key community stakeholders about this issue, to see how they feel about it and whether or not it would be possible for a program like this to exist in this part of Maryland.

You've been identified as a key community stakeholder in the _____ sector *[insert: elected officials, law enforcement, drug treatment, public health, neighborhood association, religious]*. Therefore, I'd like to invite you to participate in this study.

If you do agree to participate, we will schedule a time to meet to for an interview about your perceptions on HIV prevention and needle exchange programs in Prince George's County. This interview shouldn't take more than 45 minutes, and will be recorded. Your name will not be used in the study, and everything you say will be completely confidential.

As a thank you for your time and participation, I can offer you a $30 gift card for completing the interview.

_____

[Over e-mail]:

If you would like to participate in this study, please respond to this e-mail to schedule a time to conduct the interview. We can arrange to meet in a public, quiet location, such as your office or mine, and at a time that works for both of us.

If you are unable to participate, but know of a colleague who might be interested in participating, please feel free to share my contact information with that person.

Thank you and have a great day!

Sincerely,
Natasha Paleau (Student Investigator)
0120 Eppley Recreation Center
College Park, MD, 20742
Telephone: 301-314-1280
E-mail: npaleau@umd.edu

_____

[Over the phone:]

Would you like to participate in this study?

[*If yes*]: Great! We can arrange for a time to meet anywhere that is a public, quiet location at a time that works for both of us. [*suggest date & time*].

[*If no*]: Thank you very much for your consideration. Would you like to take my contact information to one of your colleagues?

[*If yes*]: *[Give contact information]*

[*If no*]: Thank you for your time. Have a great day!

Appendix 3- Study Informed Consent Form

Project Title	Barriers and Facilitators to Needle Exchange Implementation: Perceptions of Community Stakeholders in Prince George's County, MD
Purpose of the Study	*This research is being conducted by Natasha Paleau, under the guidance of Dr. Mary A. Garza, as a master's thesis at the University of Maryland, College Park. I am inviting you to participate in this research study because you have been identified as a key community stakeholder. This means that you live and work in Prince George's County, and have considerable knowledge of community issues here. The purpose of this research project is to a.) assess the perceptions of key community stakeholders on the barriers and facilitators to needle exchange program implementation for HIV prevention in injection drug users; b.) determine whether or not it is feasible for a needle exchange program to exist in Prince George's County; c.) develop recommendations on HIV prevention for local policy makers and public health officials.*
Procedures	*The procedures involve a 45-minute, one-on-one interview during which time you will verbally respond to a series of questions about the community factors that affect HIV prevention amongst injection drug users, including perceptions about needle exchange programs. To give you an idea of the type of questions you will be asked, two of the interview questions are provided below:* • *What would you see as some of the major health problems faced by your community?* • *What do you see as the benefits of implementing a needle exchange program in Prince George's county, if any?* *The researcher will ask you each question, which you will then have time to respond to. With your permission, the interview will be audio recorded. The interview will then be typed and saved, without any of your personal information, in a password-protected database on the student researcher's private computer. If at any point during the interview you feel uncomfortable, we can turn the tape recorder off. You may also request to withdraw your responses from the transcribed text at any time.* *Prior to the interview, you will be asked to complete a short demographic questionnaire. This will include basic information about you, but will not include any personally identifying information. Your name will not be placed on any study materials. Instead, a unique identifying code will be assigned to you.* *The entire process should take no more than one hour. At the end of the interview, you will receive a $30 gift card for your time and participation.*

Potential Risks and Discomforts	*There may be some risks from participating in this research study. You may feel uncomfortable discussing certain topics or answering certain questions. However, you do not have to answer any questions you do not feel comfortable answering.*
Potential Benefits	*There are no direct benefits to participation. However, the answers to your questions may help inform future research and public health programs. I hope that, in the future, other people might benefit from this study through improved understanding of HIV prevention initiatives in Prince George's County.*
Confidentiality	*Any potential loss of confidentiality will be minimized by keeping all study documents in a locked filing cabinet in the student researcher's home office for a period of 3 years, in compliance with federal regulations. After 3 years, the textual data will be destroyed via shredding. All digital data, including textual and audio data, will be stored in a password-protected database, without any of your identifying information, on a password-protected computer to which only the student researcher has access for a period of 3 years. This data will also be destroyed after 3 years. All files will be labeled with a unique identifying code comprising letters and numbers that are not associated with your personal information.* *If I write a report or article about this research project, your identity will be protected to the maximum extent possible. Your information may be shared with representatives of the University of Maryland, College Park or governmental authorities if you or someone else is in danger or if I am required to do so by law.*
Medical Treatment	*The University of Maryland does not provide any medical, hospitalization or other insurance for participants in this research study, nor will the University of Maryland provide any medical treatment or compensation for any injury sustained as a result of participation in this research study, except as required by law.*

Right to Withdraw and Questions	*Your participation in this research is completely voluntary. You do not have to answer any questions that you do not feel comfortable answering. You can withdraw from the study at any time.* *If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.* *If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the investigators:* ***Dr. Mary A. Garza (Principal Investigator)*** ***2322 School of Public Health*** ***College Park, MD, 20742*** ***Telephone: 301.405.0766*** ***E-mail: magarza@umd.edu*** ***Natasha Paleau (Student Investigator)*** ***0120 Eppley Recreation Center*** ***College Park, MD, 20742*** ***Telephone: 301-314-1280*** ***E-mail: npaleau@umd.edu***	
Participant Rights	*If you have questions about your rights as a research participant or wish to report a research-related injury, please contact:* **University of Maryland College Park** **Institutional Review Board Office** **1204 Marie Mount Hall** **College Park, Maryland, 20742** **E-mail: irb@umd.edu** **Telephone: 301-405-0678** *This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.*	
Statement of Consent	*Your signature indicates that you are at least 18 years of age; you have read this consent form or have had it read to you; your questions have been answered to your satisfaction and you voluntarily agree to participate in this research study. You will receive a copy of this signed consent form.* *If you agree to participate, please sign your name below.*	
Signature and Date	**NAME OF SUBJECT [Please Print]**	
	SIGNATURE OF SUBJECT	
	DATE	

Appendix 4: Demographic Questionnaire

Date:_____ Participant ID_____

1. In what sector of the community do you work? (circle only one)
    a. Elected Official
    b. Law Enforcement
    c. Religious
    d. Neighborhood/Civic Association
    e. Public Health
    f. Drug Treatment

2. What is your age range?
    a. 18-25
    b. 26-35
    c. 36-45
    d. 46-55
    e. 56-65
    f. 66-75
    g. 76 or above

3. How long have you worked in this sector?
    a. Less than 1 year
    b. Between 1 and 5 years
    c. Between 5 and 10 years
    d. More than 10 years

4. What is your gender?
    a. Male
    b. Female

5. What is your race/ethnicity? (circle all that apply)
    a. Black/ African-American
    b. White
    c. American Indian/ Alaska Native
    d. Native Hawaiian/ Pacific Islander
    e. Asian
    f. Hispanic or Latino
    g. Additional:_____

6. What is the highest level of education you have completed?
    a. Middle school
    b. Some high school
    c. High school graduate
    d. Some college
    e. College Graduate
    f. Post-graduate degree

Appendix 5: P.G. County Needle Exchange Policy- Qualitative Interview Guide

Hello, my name is Natasha Paleau. I am a second-year master's student in the School of Public Health at the University of Maryland, College Park. For my master's thesis, I am examining perceptions of key community stakeholders on the issues of needle exchange and HIV prevention in Prince George's County. Thank you for giving your time and agreeing to be part of this study. The interview should take about one hour to complete, and will be recorded. As outlined in the informed consent, you are not obligated to answer any questions you do not feel comfortable answering, and we can stop the tape recorder at any time. All recordings and transcriptions will be kept confidential.

1- How long have you been living in Prince George's County?

2- Please describe your community/ neighborhood/ organization for me.

3- How politically active are the members of your organization/community? What issues are most important to them?

4- What would you see as some of the major health problems faced by your community?

   a. IF HIV in the IDU community is not mentioned: do you see HIV in the IDU population as a major health problem?

5- What is your knowledge of the history of needle exchange legislation in P.G. County?

6- What do you see as the benefits of implementing a needle exchange program in Prince George's county, if any?

7- What do you see as the potential harms of implementing a needle exchange program in Prince George's county, if any?

8- Do you think that members of your organization/community would support the implementation of a needle exchange program?
   a. If yes: Why do you say that the members of your community would support such a program?
   b. If no: Why do you say that the members of your community would not support such a program?

9- What conditions would have to exist for a needle exchange program to be effective in your community?

10- What are some barriers that might prevent a needle exchange program from being implemented?

Appendix 6: Study Code Book

List of Study Codes by Frequency of References

Code	Major Theme?	Number of Referencing Sources	Frequency of References
Affluence		5	7
Benefits of needle exchange programs	X	11	29
Community acceptance		11	26
Community engagement		7	16
Community priorities		6	20
Control		4	6
Cost of supporting HIV/AIDS		2	9
Demonstrating need		8	17
Differences between inner-beltway and outer-beltway Prince George's County	X	6	15
Difficulty engaging injection drug users		9	26
Drug use trends		7	10
Dysfunction within the system		3	16
Education		5	10
Exploiting the system		2	2
Funding	X	10	42
Harms of needle exchange programs	X	9	18
Health Issues		11	30
Image of Prince George's County	X	6	21
Influential groups		7	23
Influential individuals		5	10
Injection drug use as a declining problem	X	10	33
Land use and development		2	5
Marginalization		7	19
Model programs		7	21
Need to raise awareness	X	7	31
Needle exchange as a political issue	X	8	27
Poverty		4	6
Preserving the neighborhood		3	8
Promoting drug use		6	17
Proximity to Washington D.C.		5	9
Public safety		4	8
Religion		3	7
Resource allocation		5	12
Stigma	X	11	33

Appendix 7: MPH Program Competencies Addressed

The following competencies for the Master of Public Health, Behavioral and Community health degree will be addressed in my master's thesis:

Public Health Core Competencies:

1. **Identify the causes of social and behavioral factors that affect health of individuals and populations.**
   a. Identify social and behavioral causes of morbidity and mortality

2. **Identify basic theories, concepts and models from a range of social and behavioral disciplines that are used in public health research and practice.**
   a. Distinguish among the major health behavior theories
   b. Recognize how theory can be used to address health problems

3. **Describe the merits of social and behavioral science interventions and policies.**
   a. Illustrate examples of effective health behavior interventions and policies.

5. **Specify multiple targets and levels of intervention for social and behavioral science programs and/or policies.**
   a. Describe social ecological theory
   b. Apply the social ecological approach to health behavior
   c. Address public health problems using policy targeting multiple levels of change

9. **Critically review and summarize statistical analyses presented in public health literature**
   a. Identify how statistical methods can be used to answer scientific questions.

10. **Draw appropriate inferences based on statistical analyses used in public health research.**
    a. Interpret statistical results.
    c. Present the results of analyses

11. **Explain the importance of epidemiology for informing scientific, ethical, economic, and political discussion of health issues.**
    a. Describe major public health problems (e.g. local, national)

12. **Describe a public health problem in terms of magnitude, person, time and place.**
    a. Describe major public health problems (e.g. local, national)
    b. Describe risk factors for major public health problems and evidence in support of these factors
    c. Describe social and environmental factors associated with different public health problems

13. Apply the basic terminology and definitions of epidemiology.

c. Discuss criteria for causality

14. Identify key sources of data for epidemiological purposes.

a. Identify public health problems from existing information

b. Identify and access different surveillance data sets that are available both nationally and internationally

18. Draw appropriate inferences from epidemiologic data.

a. Make inferences from results of analysis

c. Compare results to other findings

20. Identify the main components and issues of the organization, financing, and delivery of health services and public health system in the US.

d. Understand the political process, how to influence health policy, including enactment, implementation and enforcement in the U.S. health care system

<u>Community Health Education Cognate Competencies:</u>

1. Identify critical stakeholders for the planning, implementation and evaluation of public health programs, policies and interventions.

d. Identify examples of public health initiatives in communities, medical care systems, state health agencies, advocacy groups, health related organizations and the federal government

2. Identify individual, organizational and community concerns, assets, resources and deficits for social and behavioral science interventions.

b. Conduct formative research with target audiences, experts, and gatekeepers that informs the intervention process

c. Use assets mapping as a tool for community needs assessment

4. Apply evidence-based approaches in the development and evaluation of social and behavioral science interventions.

a. Conduct a thorough and scientific literature review

b. Interpret and critique evaluation research and research reports

c. Demonstrate an understanding of concepts and methods related to design, sampling, data collection, statistical analysis, and hypothesis testing

6. Conduct evaluation and research related to health education

b. Use the language of research

c. Address barriers to research in health education

d. Identify various data collection procedures and explain their advantages and disadvantages

g. Use ethical approaches with human subject in research

9. Communicate and advocate for health and health education

a. Advocate for public policy that improves public health

d. Understand the roles of consumers, governments, interest groups, and industry in public health policy

e. Analyze factors that influence decision-makers

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