

ASSESSING TREATMENT ACCESS FOR ADULT SEX OFFENDERS UNDER
COMMUNITY SUPERVISION IN KENTUCKY: AN EXPLORATORY STUDY

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As sex offenders are probated or paroled into the community, treatment and monitoring is often a condition of their release. Kentucky has adopted the Containment Model (English, Pullen and Jones 1996) for treating and monitoring sex offenders. In Kentucky, sex offenders are required to access treatment for duration of two years or more in a community setting. However, some sex offenders are disadvantaged in accessing mandated treatment. This is a result of decisions made by the sex offender to return to communities where they rely on indigenous support networks. Also, treatment inequities are associated with some statutes (i.e., sex offender registries and residency restriction laws) as well as the geographical placement of sex offender treatment resources. Since treatment is an effective deterrent in reducing sex offender recidivism (Hanson and Bussiere 1998; Hanson and Harris 2000; Hanson and Morton-Bourgon 2004), denying some sex offenders to access treatment puts them at greater risk in failing to meet the conditions of community supervision leading to probation or parole revocation.

Data were collected on three topics: (1) sex offender treatment resources; (2) sex offenders under community supervision; and (3) communities where sex offenders reside. The dependent variables, nearest provider and nearest three providers were correlated with multiple independent variables. The independent variables were extracted using PCensus 8.73, which provided U.S. Census estimates for 2007. Variables included both family and community characteristics, which reveal sex offenders who travel greater distances to access treatment.

This study utilizes spatial and non-spatial methodologies, including an origin-destination (OD) matrix to determine the distances sex offenders travel, in minutes, to access their nearest and three nearest mandated treatment providers and ordinary least squares (OLS) regressions to determine family and community characteristics impact on sex offenders travel time to treatment.

Findings suggest that sex offenders who reside in rural areas travel further to treatment resources than urban residents. Also, sex offenders who face longer travel times to treatment live in communities with higher levels of families living below poverty and lower housing value. Policy implications are provided to determine treatment alternatives for sex offenders unable to access mandated treatment.

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CHAPTER I

INTRODUCTION

Citizen concerns about the social problem of sex offending have grown considerably in the past decade. In response, the Commonwealth of Kentucky has adopted the Containment Model (Bynum et al. 2001; English et al. 1996) for managing adult sex offenders. The model balances both restrictive and rehabilitative approaches to social control, emphasizing monitoring (i.e., sex offender registries), limitations (i.e., curfews and residency restrictions), and treatment for all offenders under supervision. Reflecting the values and concerns of the public and policy-makers, attention has focused primarily on offender punishment and restriction.

In Kentucky, as in other states, sex offenders are required to complete specialized community-based treatment programs as a condition of their supervision. Treatment can deter recidivism (i.e., reoffending) by monitoring the behaviors of sex offenders, and improving their self-control (Rice, Harris and Quinsey 1991; Hall 1995; Prentky et al. 1997; Hanson and Bussiere 1998; Hanson and Harris 2000; Langan, Schmitt and Durose 2003; Hanson and Morton-Bourgon 2004; Human Rights Watch 2007). To the degree that treatment is an effective deterrent, limiting access to it could negatively influence public safety. However, relatively little attention has been given to social dimensions of community-based treatment for sex offenders.

This research intends to increase our understanding of strategies to control this social problem through treatment by examining the availability and accessibility of

therapeutic services for sex offenders. I argue that mandated treatment is not equally accessible to all sex offenders under community supervision. This is the result of many factors, including choices made by the offender such as a preference to return to communities where they have family and other indigenous support networks. Treatment inequities are also associated with administrative decisions about the geographical allocation of treatment resources made by the Department of Corrections, the availability of private therapists treating offenders on a contractual basis, and the consequences of some statutes and regulations such as sex offender registries and residency restriction laws. For these reasons, some sex offenders are relatively disadvantaged in accessing treatment services, putting them at greater risk for failing to meet their conditions of community supervision and having their probation or parole revoked.

Sexual Offending in America

Prevalence

Studies have shown that convicted sex offenders comprise roughly ten percent of the national prison population (Greenfeld 1997; Steele 2007). Recently, the rate of reported sexual assaults has declined by 18 percent. In fact, from 1997 to 2007 the estimated arrest rate for all sex crimes (except forcible rape and prostitution) has decreased from 101,900 in 1997 to 83,979 in 2007 (Federal Bureau of Investigation 1997; 2007). Also, forcible rape has declined by 27 percent from 32,060 estimated arrests in 1997 to 23,307 in 2007 (Federal Bureau of Investigation 1997; 2007). Still, sex offenses continue to be a great concern to citizens and government decision-

makers. Contemporary sex offender laws and legislation have been enacted based on the assumption that a majority of sex crimes are committed by formerly convicted sex offenders (Human Rights Watch 2007). However, most individuals arrested for a sex crime have no prior convictions of a sexual offense (Greenfeld 1997). Sex offenders recidivate at much lower rates, compared to other types of criminal offenders. When they do recidivate, sex offenders are most commonly rearrested for non-sexual crimes (Langan et al. 2003). For example, Langan et al. (2003) found that only 2.5 percent of rapists released from prison in 1994 were rearrested for another rape in the next three years. As with other criminals, sex offenders are less likely to re-offend the longer they stay in the community. There are other factors associated with the likelihood of sex offender recidivism, including the relationship to the victim.

Contrary to media depictions that publicize “stranger danger,” sexual assaults usually involve offenders known to the victim. Most sexual offenses occur in the home of the victim, relative, or neighbor (Greenfeld 1997; Humans Rights Watch 2007), and recidivism rates of sex offenders are much lower when the victims are family members as compared to non-family members (Langan et al. 2003).

Characteristics of Sex Offenders

Research has demonstrated that sex offenders are typically young, white males (Hanson and Harris 2000; Hanson and Morton-Bourgon 2004; Greenfeld 1997). Langan et al. (2003) study of 9,691 sex offenders released from prison in 1994 showed that sex offenders were typically white (67.1 percent) and between the ages of 30-34 (20.0 percent) compared to other sex offenders. Similarly, Greenfeld

(1997) revealed in his study of incarcerated sexual assault offenders to be male (98.8 percent), white (73.9 percent), 18-24 (23.6 percent), and divorced (35.0 percent).

Several empirical studies suggest sex offenders as having severe personality disorders such as reduced impulse control and antisocial characteristics (Paradise et al. 1994), a history of abuse (Finkelhor et al. 1997), and substance abuse (Finkelhor, Omrod and Turner 2007; Irwin and Roll 1995; Johnson 2007; USDHHS 1993; Valliere 1997; Steele 2008).

Consequences

Being the victim of a sex crime can have many negative life outcomes, including physical injury as well as emotional trauma; although no single set of symptoms occur in all victims (Kendall-Tackett et al. 1993; Kolko and Brown 2000). Victims are at risk to experience depression, fear, general anxiety, aggression, nightmares and sleep disorders, physical illness, inappropriate sexual behaviors, school and work problems, delinquency, substance abuse, and symptoms of posttraumatic stress disorder (Breier 1992; Knutson 1995, Kolko and Brown 2000; Lee and Tolman 2006; Letourneau et al., 1996; Malley-Morrison and Hines 2004).

For sex offenders, consequences come in the form of depression and self-doubt, and social vilification, loss of opportunities, vigilantism, and state supervision after sentence expiration.

Purpose of the Study

The purpose of this study is to determine if a disparity in treatment access exists, and, if so, which sex offenders are disadvantaged by this disparity and thus at

greater risk, at least on this factor, for failure and reoffending. More generally, this research explores the way in which Kentucky is implementing the treatment aspect of English et al. (1996) Containment Model, from the theoretical perspective of Reckless' (1961) Containment Theory.

Utilizing geographic information systems (GIS) software, addresses of sex offender residences and treatment providers are mapped to determine the dispersion of offenders and services throughout the state, and statistical procedures are used to determine if there are any underserved areas for sex offenders attempting to access treatment. A GIS is "a useful tool for transforming data from the real world into spatial data, which can be used for a set of particular purposes" (Burrough and McDonnell 1998:11).

Research Questions

Given the purpose of this study, the following questions will be addressed:

- 1) How is Kentucky implementing the Containment Model in terms of treatment accessibility?
- 2) Are there underserved areas in relation to sex offender residences and treatment providers? If so, what are the characteristics of those areas?

From a policy standpoint, this research could improve the current practices of the Kentucky Department of Corrections. By locating relatively underserved areas, Corrections could consider various strategies to improve treatment access for sex offenders under supervision. This research could stimulate future research to improve public safety through the management of sex offenders in Kentucky.

Organization and Explanation of Research

In Chapter II, I review the literature related to the social control of sex offenders through management, restriction, and rehabilitation. In Chapter III, I discuss the methodologies (i.e., spatial and non-spatial) used and describe the data collection process and analysis. Statistical techniques used include point and kernel density maps, origin-destination (OD) matrices, correlation matrices, and a series of OLS regressions. Chapter IV presents the results of the analyses with explanatory comments. Chapter V offers a discussion of the findings and provides policy implications. Chapter VI identifies limitations, and highlights conclusions of the study.

CHAPTER II

SOCIAL CONTROL OF SEX OFFENDERS THROUGH MANAGEMENT, RESTRICTION, AND REHABILITATION

This chapter presents an overview of the strategies used to control convicted adult sex offenders and thus reduce their likelihood of reoffending. I begin with a general review of research concerning sex offender recidivism, and then present a general discussion of the social control perspective of deviance, focusing on one particular approach: Walter Reckless' Containment Theory. I relate it to the Containment Model that, although similar in name, has apparently developed independently from Reckless' Theory. The Containment Model has become the most widely adopted approach for controlling recidivism among adult sex offenders, using both restrictive and rehabilitative strategies. As such, I review the relevant literature concerning sex offender recidivism, restriction and monitoring, rehabilitation, and healthcare accessibility/availability.

Sex Offender Recidivism

A review of research conducted on sex offender recidivism reveals dissimilarities in the groups examined, sample size, how recidivism is defined, follow-up periods, and if control or comparison groups are used (Furby, Weinrott and Blackshaw 1989; Prentky et al. 1997). The majority of recidivism studies focus on offenders who are paroled from prison treatment programs (Barbaree et al. 2001; Beech et al. 2002; Dempster and Hart 2002; Dobson and Konicek 1998; Escarela, Francis and Soothill 2000; Nunes et al. 2002; Prentky et al. 1997; Langan et al. 2003),

and do not separate offenders by their type of sexual offense. Most studies conclude that sex offenders are less likely than other criminals to re-offend, but findings are often unreliable or inconsistent since various types of sex offenders are grouped for comparison to non-sexual offenders (Barbaree et al. 2001; Dempster and Hart 2002; DiFazio, Abracen and Looman 2001; Dobson and Konicek 1998; Hanson and Harris 2000; Nunes et al. 2002). Some researchers have addressed reliability issues by limiting research to offenders that have engaged in the same type of sex crime, including studies of rapists (Prentky et al. 1997; Rice, Harris and Quinsey 1990), child molesters (Hanson, Steffy and Gauthier 1993; Hanson, Scott and Steffy 1995), and extrafamilial child molesters (Firestone et al. 2000; Prentky et al. 1997; Rice et al. 1991).

Opinions differ concerning research definitions of what acts constitute recidivism. For example, some criminologists have found that there is little specialization in type of crime among offenders (Hirschi and Gottfredson 1990), and advocate for recidivism research that encompasses all criminal offenses (Gendreau, Little and Coggin 1996; Barbaree et al. 2001; Escarela et al. 2000). Other researchers, particularly those assessing the impact of sex offender treatment programs, would argue for a definition limited to the recurrence of sex crimes. In addition, researchers rely on re-arrest data (Barbaree et al. 2001; Dempster and Hart 2002; Firestone et al. 2000; Nunes et al. 2002), while others limit their studies to reconviction (Beech et al. 2002; Berlin et al. 1991; DiFazio et al. 2001; Dobson and Konicek 1998; Escarela et al. 2000; Hanson et al. 1993). Even with these

inconsistencies, sex offender recidivism is typically defined as a re-arrest or reconviction for a new sexual crime (Barbaree et al. 2001; Beech et al; 2002; Dobson and Konicek 1998; Escarela et al. 2000; Firestone et al. 1999; Prentky et al. 1997; Quinsey et al. 1995).

Sex offender recidivism studies also vary in their duration, usually calculated from time of release from prison; ranging anywhere from a few months (Barbaree et al. 2001) to five years (Dempster and Hart 2002; Dobson and Konicek 1998; Firestone et al. 2000; Nunes et al. 2002; Bynum et al. 2001) or even longer (Escarela et al. 2000; Hanson et al. 1993; Hanson et al; 1995; Prentky et al. 1997). Regardless of the time period involved, all sex offenders should have the same amount of time to recidivate, and results of recidivism studies should be comparable to time at risk for all sex offenders (Bynum et al. 2001).

Sex Offender Recidivism by Offense

As mentioned earlier, the results of studies that group different types of sex offenders tend to fluctuate, presumably because of internal differences in the study population. For example, even when using a standard five-year follow-up time period, grouped sex offender recidivism rates ranged from 4.3 percent (Dobson and Konicek 1998), to 9.3 percent (Dempster and Hart 2002), and 28 percent (Quinsey et al. 1995). Hanson and Bussiere's (1998) meta-analysis of 61 grouped sex offender studies showed that 13.4 percent of sex offenders were reconvicted on new sex charges after a five year follow-up period.

Examining sex offender recidivism by offense type can provide more detailed and reliable recidivism estimates. An analysis of treated and untreated child molesters and rapists reconvicted of a new sexual offense found rates of recidivism to be 12.7 percent for child molesters versus 36.3 percent and 18.9 percent versus 46.2 percent for rapists (Hanson and Bussiere 1998). In an examination of extrafamilial child molesters, Firestone et al. (2000) found rates of recidivism for treated sex offenders to be 15.1 percent over an eight year follow-up period. Similarly, Prentky et al. (1997) analysis of treated extrafamilial child molesters yielded recidivism rates of 14 percent during a five to twenty-five year follow-up period. Finally, Hanson et al. (1993) report that half of sex offenders released from prison were reconvicted of a new sexual offense over a twenty year follow-up period.

Predictors of Sex Offender Recidivism

The research literature identifies many factors related to the risk of sexual reoffending. These factors can be classified as static or dynamic in nature.

Static Risk Factors. Static risk factors are mostly ascribed or historical characteristics of the sex offender, which cannot be easily altered. Static risk factors identified in existing research include adolescent and young adult age of the sex offender (Escarela et al. 2000; Firestone et al. 1999; Firestone et al. 2000; Hanson and Bussiere 1998; Hanson and Harris 2000), low educational attainment (Firestone et al. 2000; Hanson and Harris 2000), a poor employment record (Dempster and Hart 2002), and single or divorced marital status (Hanson and Harris 2000; Quinsey et al. 1995; Rice et al. 1991). Moreover, static risk predictors include forensic factors such

as number of previous criminal convictions (Dobson and Konicek 1998; Firestone et al. 1999; Firestone et al. 2000; Grubin 1999; Hanson and Harris 2000; Hanson et al. 1993; Hudson et al. 2002), a history of alcohol and/or drug abuse (Dobson and Konicek 1998), and if the sex offender had more than one victim (Maletzky 1991).

Dynamic Risk Factors. Unlike static factors, which usually remain unaltered, dynamic factors can be changed with proper intervention (Craig et al. 2005). Typically, dynamic factors are associated with treatment and include two subtypes: stable and acute. Stable dynamic factors can be gradually changed, but only with a significant investment of effort on the part of treatment professionals and the offender. Examples of stable dynamic factors include deviant sexual preference (Hanson and Bussiere 1998; Craig et al. 2005) and the misuse of drugs and/or alcohol (Hanson and Harris 2000; Hanson and Harris 2001; Craig et al. 2005), and the offender's willingness to take responsibility for their offenses (Hanson and Bussiere 1998; Lund 2000).

Acute dynamic factors, which seem to have a more direct link to recidivism, can vary greatly during a short period of time. Ironically, they have not received much attention from scholars. However, some studies show that acute dynamic factors such as the sex offender's emotional state (McGrath 1991), anger (Hanson and Harris 2000), and negative moods (Hanson and Harris 2000; Hanson and Harris 2001) help explain the likelihood of recidivism. While some scholars point out the limitations of static and dynamic factors in predicting sex offender recidivism, those mentioned above have been associated in research with sex offender recidivism

(Gendreau et al. 1996; Zamble and Quinsey 1997; Hanson et al. 1995; Hanson and Bussiere 1998; Hanson and Harris 2000).

A number of actuarial risk assessment tools have been developed to predict sex offender recidivism. These include the Sexual Predator Risk Assessment Screening Instrument (SPRASI) (English 1999), Rapid Risk Assessment for Sex Offense Recidivism (RRASOR) (Hanson 1997), Sex Offender Need Assessment Rating (SONAR) (Hanson and Harris 2001), and Static-99 (Hanson and Thornton 2000). Each actuarial risk model seems to be associated with sex offender recidivism (Barbaree et al. 2001; Beech et al. 2002; Hanson and Harris 2000; Hanson and Harris 2001; Nunes et al. 2002; Quinsey et al. 1995).

The Social Control Perspective

Unlike traditional theories of crime and deviance, control theories are not necessarily concerned with why people commit crime, but rather, why people *do not* commit crime (Cullen and Agnew 2006). Control theorists assume that the propensity to commit crime is common among individuals, but various control stimuli act as deterrents to engaging in criminal activity. Conversely, the absence of control stimuli increases the risk of criminality. Controls can be social, in the form of relationships that bond people together, and can become stronger and more diverse over time. The individual can also develop internal self-control that can deter criminal behavior in the absence of control relationships (Hirschi 1969; Gottfrédson and Hirschi 1990; Sampson and Laub 1992). Reckless' (1961) Containment Theory is one example of a social control theory.

Reckless' Containment Theory

Reckless' Theory seeks to explain both conforming and deviant behavior. Reckless conceptualizes two elements, which act as mechanisms of social control: inner containment and outer containment. As Reckless explains, when an individual experiences internal and/or external pressures to deviate, which he calls push and pull factors, respectively, a solidified inner containment combined with strong outer containment provides a barrier to deviant behavior.

Inner and Outer Containment. Reckless (1961:55) identifies many inner containment elements, including:

self-control, good self-concept, ego strength, well-developed superego, high frustration tolerance, high resistance to diversions, high sense of responsibility, goal orientation, ability to find substitute satisfactions, and tension-reducing rationalizations.

Outer containment symbolizes the barriers in individuals' lives that isolate them from deviancy. As inner containment elements reside within the individual, outer containment elements are outside of the individual (i.e., in family and other support systems). Some of these controls are:

presentation of a consistent moral front to the person, institutional reinforcement of his norms, goals and expectations, the existence of a reasonable set of social expectations, effective supervision and discipline (social controls), provision for reasonable scope of activity (including limits and responsibilities) as well as for alternatives and safety valves, opportunity for acceptance, identity, and belongingness (Reckless 1961:56).

Pull and Push Factors. Pull factors are external influences that attract an individual to deviance, ranging from occupying minority status to being unable to

gain access within a legitimate organization. In essence, these environmental pulls serve as both an enticement to and promotion of deviance. Push factors, which Reckless refers to as ordinary internal urges toward deviance, are an accumulation of aggravations and discontent felt by the individual who is unable to access legitimate opportunities and achieve according to societal standards.

Reckless (1961) explains that if the pulls of the external environment weaken an individual's outer containment, the inner containment will have to be strengthened to neutralize these attractions. Conversely, strong outer containment will require less inner containment to control deviant urges.

Application of Containment Theory to the Containment Model. To test his theory, Reckless concluded with seven tests of validity for containment. Although each is important in their own regard, the fifth test of validity, that "containment theory is a valid operational theory for treatment of offenders" (Reckless 1961:57) is most relevant for the current study. Containment Theory is applicable to this research for two reasons. First, treatment providers should be able to help sex offenders to strengthen their inner containment. By providing support, treatment providers aid in the process of developing offender's self-control. Second, until the sex offender's inner containment is developed, treatment providers can act as agents of outer containment.

Structural factors that vary between neighborhoods and other geographically-defined locales have been associated with crime rates (Land, McCall and Cohen 1990; Baller et al. 2001; Messner and Anselin 2004; Messner et al. 1999). From a

containment perspective, these factors could increase the likelihood of crime (pull factors) or decrease it (outer containment). This study focuses on family and community characteristics since they relate to sex offending in a general sense. First, family structure, such as single female-headed families and those living in poverty, might encourage sex offending in that they have economic and child supervision incentives to invite a sex offender into the home, increasing the vulnerability of both children and adults. Second, communities that exhibit high rates of poverty and unemployment might be less likely to offer employment and other normalizing opportunities to sex offenders. Sex offenders who cannot easily access treatment might be vulnerable to reoffending if they reside in high-risk locales. Conversely, offenders who can easily access treatment support might be able to overcome risks in the community.

However, treatment can only be effective in containing the pushes and pulls to which sex offenders are exposed if they can access treatment services. If sex offenders in certain communities experience barriers to accessing treatment, they might be at greater risk to recidivate, relative to those who can easily access treatment services.

Formal Control of Sex Offenders

Responding to public opinion during the 1990s, government policy makers and criminal justice system professionals adopted a more punitive approach towards sex offending. Much of this change related to the media's sensational portrayals of

“sexually violent predators,” and resulted in several pieces of restrictive federal, state and local legislation (Quinn, Forsyth and Mullen-Quinn 2004).

Federal Policies

In 1994, Congress passed The Jacob Wetterling Crimes Against Children and Sexually Violent Offender Registration Act, which mandated every state and the District of Columbia, require offenders convicted of a crime against a child or a sexual crime (i.e., rape, sodomy, sexual abuse, incest, etc.) to register their locations with criminal justice personnel (42 U.S.C. § 14071 (2000)). The act also required sex offenders to provide previous convictions as well as the nature of their crime.

Megan’s Law, enacted in 1996 as an amendment to the Wetterling Act, created a collaboration between state and federal law enforcement agencies based on the dissemination of sex offenders’ locations to the public (Megan’s Law, Pub. L. No. 104-145, 110 Stat. 1345 (1996)). Further information on the registry includes the offenders address, photograph, and occasionally their place of employment (Tewksbury and Higgins 2005).

President George W. Bush signed into law The Adam Walsh Child Protection and Safety Act of 2006. The Act established a three-tier system for classifying sex offenders’ risk for re-offense (i.e., high, medium, or low risk) and increasing the time on the registry from ten years to fifteen, for offenders who meet Tier One criteria (Adam Walsh Child Protection and Safety Act of 2006, Pub. L. No. 109-248, 120 Stat. 587 (2006)). Additionally, Tier One offenders must update their information

every year, while Tier Two and Tier Three offenders do so every six and three months respectively.

State and Local Policies

Residency Restriction Laws. Residency restriction laws were developed to isolate sex offenders from any place where children gather. As a result, sex offenders are unable to live with indigenous support networks and are unable to gain entrance in metropolitan areas, which drives them into rural areas. Currently, twenty states invoke residency restriction laws on sex offenders, including Kentucky (Human Rights Watch 2007; Levenson and Cotter 2005; Zandbergen and Hart 2006; Tewksbury and Mustaine 2006; Tewksbury and Levenson 2007; Sterrett 2007; Levenson and Hern 2007).

Sex Offender Policies in Kentucky. As federal sex offender laws are continually revised, their effectiveness is questioned by states due to the accumulating restrictions placed on sex offenders. In Kentucky, restrictions take many forms including limiting job opportunities, redefining the nature of a sex crime, and determining where sex offenders can live when they reenter the community (Kentucky Revised Statutes (KRS) 160.380 2006; 17.545 2006; Sterrett 2007). In Kentucky, residency restriction laws were passed with the inception of House Bill 3 during the 2006 legislative session (H.B. 3, § 7(3), 2006 Gen. Assem., Reg. Session). The law restricts sex offenders from living within 1,000 feet where children congregate (Sterrett 2007). Kentucky requires a ten year registration period for sex offenders reentering the community, to provide demographic characteristics (i.e.,

name, current address, and photos) concerning their location, and to update this information every two years (Sterrett 2007).

These laws are also important for several reasons. First, not all sex offenders convicted of a sexual offense serve time in prison, often as a result of plea agreements. Rather, many are probated into the community to serve their sentence. Second, sex offenders serving time in prison will eventually be released back into the community under supervised conditions. In either case, sex offenders are required to register their residence, which is then placed on the state sex offender registry.

Sex Offender Treatment Program in Kentucky. In the Commonwealth of Kentucky, as in other states, sex offenders are required to complete specialized community-based treatment programs as a condition of their supervision. Legislation adopted in 2000 mandates sex offenders convicted after July 15, 1998; adhere to a three year period of conditional discharge (CD) when released from a correctional institution. This is the case for offenders that receive probated sentences or, more commonly, for those paroled to the community after serving time in prison. To implement its strategy, the Kentucky Department of Corrections established the Sex Offender Treatment Program (SOTP) in institutions and communities in July of 1986.

There are two primary goals of the SOTP, which include: 1) to promote community safety, by allocating resources to sex offenders who are amenable to treatment, and 2) to locate high risk sex offenders and prevent them from further harming the community. Due to court decisions concerning inmate's rights, participation in the institutional SOTP is not mandatory but, under KRS 197.400-

197.440, a sex offender is ineligible for parole unless they have completed the SOTP. The program is at least 24 months in duration and is provided to individuals within four years of their parole hearing (Kentucky Department of Corrections 2005).

In the community, treatment is expected to be as intense as in an institutional setting, although the hope is to keep sex offenders in treatment longer in the community. On average, sex offenders stay in community treatment for approximately 30 months, which is roughly five months longer than the institutional SOTP (Kentucky Department of Corrections 2005). Initial stages of treatment consist of two to three month assessments and orientation groups, which then proceeds into group therapy, where the focus is on cognitive-behavioral skills. The primary goal of a community based SOTP is to help the sex offender transition back into the community and to reduce new sexual offenses.

The Containment Model

While recent legislation creates a legal framework for responding to sex offenders, it does not serve as a strategy for their ongoing management. Extant research shows the Containment Model has become the most widespread form of treatment for convicted sex offenders (Bynum et al. 2001; English et al. 1996). Grounded in descriptive and etiological studies of sex offending (Hanson and Harris 2000; Bynum et al. 2001; Hanson and Morton-Bourgon 2004), the Containment Model uses internal and external control mechanisms to both restrict sex offenders and make them aware of their cognitive distortions. The effectiveness of the approach is a result of both interdisciplinary and interagency collaboration.

In their initial report, English et al. (1996) describe the results of a nationwide telephone survey completed with 732 probation and parole administrators to determine their adult sex offender management practices. Findings revealed a number of components that are essential for an effective sex offender management strategy, including interagency collaboration, open policies, and an approach centered on management (i.e., surveillance) and risk prevention (i.e., sex offender treatment) based on sex offenders' characteristics.

Components of the Model

Five elements emerged that compose the Containment Model (English et al. 1996:1257).

1. A philosophy that values victim protection, public safety, and reparation for victims as the paramount objectives of sex offender management;
2. Implementation strategies that depend on agency coordination and multidisciplinary partnerships;
3. A containment-focused case management and risk control approach that is individualized based on each offender's characteristics;
4. Consistent multi-agency policies and protocols; and
5. Quality control mechanisms, including program monitoring and evaluation.

Philosophy and Goals. In the first premise, primary initiatives are centered on the victim and the community rather than on the sex offender. In many instances, victims have been subjected to manipulation by sex offenders due to rapport that has been established over time. Since offenders and victims often develop their relationship over time in isolation from others, offenders are able to plan their sexual

assaults before acting, and define the action in a manner that leaves the victim feeling at fault (English et al. 1996). In the community, sex offender management is vital to reduce concerns about reoffending, and to promote victim rehabilitation (Bynum et al. 2001). Justice and clinical professionals play significant roles not just with offenders, but victims as well. Victim recovery depends on the cooperation of professionals who manage sex offenders, develop policies, and implement programs.

Collaboration. A collaborative approach amongst agencies creates a systematic effort towards sex offender management. In the past, there have been jurisdictional battles between agencies over sex offender supervision. However, through intra-agency as well as inter-agency endeavors, the line of communication has opened up access to the best outcome in sex offender management. For example, specialized offender management training has resulted from the sharing of ideas between agencies.

Sex Offender-Specific Containment. Since each sex offender has a unique pattern of offending, containment must revolve around their own sexual history. In many cases, when an offender begins serving their probation or parole, agencies have access to little information on the offender, especially their modus operandi. However, through a combination of criminal justice supervision, therapeutic services, and polygraph examinations, agencies obtain sensitive information about an offender for efficient management and treatment.

Criminal justice supervision imposes the threat of legal sanctions on sex offenders to make them comply with set guidelines. For example, probation and

parole officers can penalize offenders for non-compliance with treatment guidelines, violating supervision protocol, and inappropriate behavior that places risk on potential victims. Consequences for such actions include an increase in supervision or revocation of probation and parole.

The goal of sex offense-specific treatment is to make the offender accountable for their behavior. As mentioned previously, treatment must be juxtaposed with the offenders' abnormal sexual history to be effective. Whereas criminal justice supervision focuses on external control, sex offender-specific treatment seeks to strengthen internal control. Treatment for sex offenders is somewhat different than conventional therapy for a number of reasons. First, therapists refuse to believe offenders' recollection of their sexual past as accurate. Also, as mentioned in the first element of containment, therapists' main concern is on the community and well being of victims. In this regard, therapy is centered on offenders' abusive behavior that affects others, which leaves their feelings about therapy derivative. Group therapy is the primary approach therapists engage in, due to the manipulative patterns that sex offenders employ. During therapy, if therapists feel that offenders are not being completely forthcoming about their deviant past, polygraph examinations are often utilized to divulge such information (English et al. 1996).

Polygraph examinations act as a bridge between criminal justice supervision and sex-offense specific treatment. To receive the full benefits of treatment, offenders must fully disclose their life histories of sexual deviance. Therapists need to know if offenders are being completely honest during sessions, and knowing an

offender's full sexual history aids therapists in creating a treatment plan that is tailored to the offenders' needs. Probation and parole personnel need to know if offenders are complying with mandated treatment. In essence, treatment and supervision work hand in hand to motivate offenders to change their ways (English et al. 1996).

Consistent Public Policies. As a fourth element of containment, criminal justice organizations must structure meaningful public policies. These policies must be supported by criminal justice personnel and provide a discretionary aspect to handle offenders. Policies are particularly important for the offender, which allow them to better understand what is expected of them during the treatment process. Offenders that grasp their role and responsibilities in treatment will keep them engaged and focused on the task at hand rather than becoming belligerent about the approach (English et al. 1996).

Quality Control. The final element of containment focuses on quality control, which entails supervising the Containment Model to discover if interagency policies are being implemented, and determining if these policies are making a difference in sex offender management. States that adopt the Containment Model should commit to it for the long term. The success of the approach depends on the professionalism of each participating agency (English et al. 1996).

Sex Offender Treatment as a Mechanism of Social Control

Historical Development

Over the past several decades, many approaches have been developed to treat sex offenders, including psychological, behavioral, and cognitive-behavioral therapies. Treatment goals have focused on helping sex offenders address their denial of responsibility, identify and manage risk factors, improve victim empathy, and develop prosocial skills (Bumby 2006). Studies have shown that when treatment is included as a component to sex offender management, outcomes for rehabilitation are promising (Aos, Miller and Drake 2006; Cullen and Gendreau 2000). Since sex offenders are a heterogeneous group, therapists take a variety of approaches in treating them (Maletzky 1991; Ward and Hudson 1998; Ward and Siegert 2002; Ward, Polascheck and Beech 2006).

Psychological/Organic Treatment of Sex Offenders. In 1937, California became the first state to develop a “sexual psychopath” law, which permitted the commitment of any “person who by reason of mental defect, disease, or disorder, is predisposed to the commission of sexual offenses to such a degree that is dangerous to the health and safety of others” (Cal. Stats. S6300, 1967, c. 1667, p. 4107, s37, operative July 1, 1969). As determined by the court (People v. Huffman 1977), any person convicted of a felony sexual offense in California was required to be committed, and, if the victim were under the age of 14, the offender was required to undergo evaluation for sexual psychopathy.

Early forms of psychological treatment are hard to categorize since treatment addressed several needs of sex offenders. Often those labeled sexual psychopaths were diagnosed and treated, at best, by faulty clinical judgment and other patients (Frisbie 1958; Frisbie 1969; Frisbie and Dondis 1965). However, some studies have shown that early treatment involved psychoanalytic therapy, which attempts to make conscious what is unconscious to the offender (Lester and Van Voorhis 2000). As early psychological initiatives were deemed ineffective in treating offenders and reducing sexual recidivism, organic strategies were given greater emphasis (Furby et al. 1989; Grove and Meehl 1996).

The primary goal of organic treatment is to inhibit the offender's deviant sexual motivations. Forms of treatment include biochemical, surgical castration, chemical castration and brain surgery. Biochemical approaches consist of administering medications, which result in lowering or eradicating a sex offender's sex drive. Sex offenders could also be subjected to lobotomies, a form of brain surgery that disconnects the section of their brain which controls sexual arousal from other parts (Lester and Hurst 2000). Surgical (Weinberger et al. 2005) and chemical (Meyer, Cole and Emory 1992) castration have been used in other countries for sex offenders who willfully volunteer for the procedure. However, in the United States, this option is not widely accepted because of possible bodily harm inflicted upon the sex offender and the availability of other alternative treatments for sex offenders, including behavioral treatment.

Behavioral Treatment of Sex Offenders. Behavioral therapists were guided by the belief that sexual offenses were the result of deviant sexual arousal, which emerged from deviant stimuli. Therefore, behavioral interventions focused on reconditioning sex offenders' arousal by modifying present conditioned stimuli. Techniques used to treat sex offenders derive from classical conditioning, including aversion therapy and operant conditioning procedures. Aversion therapy is a behavioral strategy which seeks to help sex offenders join together an unwanted stimuli with current desirable, yet inappropriate, behaviors (Quinsey and Marshall 1983). These include, administering electric shocks, foul odors and tastes, drugs that result in temporary paralysis and drugs that stimulate vomiting (Maletzky 1991; Quinsey and Marshall 1983; Kazdin 1989; Marshall, Eccles and Barbaree 1991; Rice et al. 1991). Aversion therapy for offenders was dramatically curtailed as the result of court cases that defined many aversive techniques as violations of offenders' Eighth Amendment protections from cruel and unusual punishment (Bohmer 1983).

Operant conditioning procedures involves the modification of behavior using rewards (Skinner 1953). Like aversion therapy, operant conditioning administers electric shocks, however, shocks result when a sex offender has a penile reaction to deviant sexual stimuli that surpass prearranged levels; know as a negative reinforcer (Quinsey, Chaplin and Carrigan 1980). Conversely, if a sex offender does not have a penile reaction that surpasses prearranged levels, no shock would be administered and a positive reinforcer (i.e., food, attention, affection) would be given to the sex offenders (Marshall and Barbaree 1988; Marshall et al. 1991).

Other forms of behavioral interventions used to treat sex offenders include verbal satiation (Grossman, Martis and Fichtner 1999), masturbatory reconditioning (Marshall and Barbaree 1998), systematic desensitization (Grossman 1985), imaginal desensitization (McConaghy, Blaszczynski and Kidson 1988), and assisted and covert sensitization (Grossman et al. 1999). Verbal satiation requires sex offenders to express, verbally, deviant sexual images over a period of time, eventually leading to extinction. Masturbatory reconditioning involves the sex offender switching from deviant to nondeviant sexual fantasy right before orgasm. Systematic desensitization reduces the level of nondeviant anxiety in the sex offender. Imaginal desensitization uses relaxing images and sexual deviance to control a sex offender's compulsivity. Assisted covert sensitization joins obnoxious stimuli with sexually deviant thoughts, while covert sensitization pairs sexually deviant images with situations that are undesirable.

Some studies show that behavioral treatment is an effective strategy in diverting sex offenders' deviant sexual fantasies (Marshall and Barbaree 1988; Laws and Marshall 1990). However, behavioral treatment used alone does not seem to be an effective strategy in reducing recidivism (Rice et al. 1991). Currently, most sex offender treatment adheres to the cognitive-behavioral model as the effective form of treatment (McGrath, Cumming and Burchard 2003).

Contemporary Treatment Strategies

Cognitive-Behavioral Treatment. Cognitive-behavioral, or sex-offense-specific, treatment places emphasis on eliminating the sex offender's cognitive

distortions (i.e., denial, minimizations, and motivations) which allow them to rationalize their deviancy (Marshall and Barbaree 1990; Wood, Grossman and Fichtner 2000; McGrath, et al. 2003; Laws and Marshall 2003; Thakker, Ward and Tidmarsh 2006; Ward and Stewart; 2003). Rationalization has a progressive effect, which permits sex offenders to move from fantasy to realized behavior (Council on Sex Offender Management 2005). As opposed to traditional therapy, cognitive-behavioral treatment is tailored to the needs of the offender (Bumby 2006). For example, therapists develop strategic treatment modalities based on offenders' sexual past (Murphy and Page 2000).

Empathy Training, Role Playing, and Social Skills Training. For sex offenders, a determining factor in the success of cognitive-behavioral treatment is confronting the offender's attitudes, beliefs, and defenses (Lester and Hurst 2000). Through empathy training, sex offenders attend group meetings in the presence of victims and clinicians. The goal of empathy training is to help the sex offender become aware of the harm inflicted on their victims. This is accomplished by providing literature to sex offenders on victims of sexual abuse, which is then discussed during group therapy. The purpose of role playing is to allow the sex offender to take on the role of an authority figure (i.e., police officer) and determine how they would confront thinking errors of the sex offender (i.e., therapist).

When sex offenders first enter treatment, they often lack proper social skills to communicate with other individuals. Towards the end of treatment, sex offenders are trained on how to develop positive social skills, which allow them to establish and

continue strong relationships. Sex offenders may mimic the behavior of their clinician or by acting out appropriate behavior in front of others (Maletzky 1991). In current years, relapse prevention has become a common cognitive-behavioral treatment modality for sexual offending.

Relapse Prevention. Relapse prevention was originally developed as a model to eliminate addiction for both drug addicts and alcoholics (Marlatt 1982). However, some studies have furthered the concept of relapse prevention to sex offenders (Pithers et al. 1982; Laws 1989; Laws, Hudson and Ward 2000). The primary goals of relapse prevention are twofold; to assist the sex offender in continuing to benefit from changes in thinking errors as a result of treatment and to continue to use the social skills developed at the completion of treatment.

Relapse prevention is currently popular since it helps sex offenders become aware of psychological and situational elements that increase their risk of re-offense. Upon completion of treatment sex offenders should be able to spot situations that place them at risk for re-offense, strategies to avoid becoming involved with risk factors, and plans to handle situations when risk factors cannot be avoided.

Treatment Outcomes

The inevitable question that faces most clinicians and researchers is “Does treatment work?” Research does not provide a consistent answer to this question, and there are those that are skeptical of sex offender treatment (Furby et al. 1989; Quinsey et al. 1993; Rice and Harris 2003; Marques et al. 2005) and advocates (Alexander

1999; Hall 1995; Marshall and Pithers 1995; Aos et al. 2006; Gallagher et al. 1999; Hanson 2006; Losel and Schmucker 2005).

However, there is an extensive literature that suggests treatment programs for sex offenders can have a beneficial effect in reducing recidivism. A meta-analysis of forty-three studies measuring treatment effects found that members of treatment groups had a lower rate of sexual reoffending than did members of comparison groups (12.3 percent and 16.8 percent, respectively), and lower rates of general recidivism (27.9 percent and 39.2 percent, respectively). Contemporary treatment approaches such as cognitive-behavioral treatment were particularly associated with lower sexual recidivism relative to comparison groups (17.4 percent and 9.9 percent, respectively) and general recidivism (51.0 percent and 32.0 percent), while older treatment approaches had little effect (Hanson et al. 2002).

In Kentucky, Peterson (2005) investigated the effectiveness of the SOTP and its impact on recidivism. She found that from 1989 to 1995 criminal recidivism in general increased slightly from 30.8 percent to 33.1 percent, but recidivism rates for sex offenders, arrested for any new crime, decreased from 16.9 percent to 14.6 percent. In 1997, sex offenders who completed the SOTP recidivated 3.4 percent of the time, while those failing to complete treatment had a higher recidivism rate of 8.7 percent.

Peterson also found recidivism rates varied by the type of sexual offense including rape, sex crimes against the family, and sex crimes against non-family members. Interestingly, rapists who completed the SOTP had no new incidents of

sex crimes for the time studied. Rapists who did not complete treatment committed a new sex crime at the rate of 19.2 percent. Sex offenders who sexually abused family member's recidivated 3.1 percent following the completion of treatment, while those failing to complete treatment recidivated 10.0 percent of the time. Finally, new sexual offenses against non-family members occurred at a rate of 17.6 percent with treatment and 20.5 percent with no treatment.

The results of Peterson's study on sex offenders' rates of recidivism are important for several reasons. First, sex offenders who complete the SOTP have generally lower rates of recidivism as compared to those who do not. Secondly, sex offenders who complete treatment based on a specific offense recidivate less often than those who do not complete treatment. For these reasons, all would agree that any benefits that might derive from treatment will be lost if offenders cannot gain access to it.

I conclude that modern treatment programs, such as the SOTP in Kentucky, can have a beneficial effect in reducing criminal recidivism, both of a sexual and general nature. Conversely, sex offenders who are unable to access treatment may be more at risk for reoffending. While I am unaware of any research concerning treatment accessibility for sex offenders, an extensive body of research discusses healthcare accessibility and availability in a general sense.

Access to Treatment

Accessible primary healthcare is an important concern for people of the United States. Research has focused on the relationship between healthcare costs and

its use, but scholars have paid less attention to other issues affecting healthcare utilization, including accessibility and availability of healthcare services.

Accessibility refers to “travel impedance (distance or time) between patient location and service points” whereas availability refers to “the number of local service points from which a client can choose” (Guagliardo 2004:2).

Healthcare Delivery in America: A Brief History

In the 19th Century, treatment providers judged individuals as incapable of recognizing their own emotional problems and need for mental health treatment. Instead, physicians were responsible for locating reasonable care for them. Those who could afford adequate treatment entered a therapeutic setting, but most people were routed into custodial insane asylums, which offered little, if any, effective treatment (Rosen 1968; Joseph and Phillips 1984; Hunter, Shannon and Sambrook 1986). In addition to economic influences, treatment accessibility was also affected by the individual’s proximity to a limited number of therapeutic facilities.

In the mid 1850s, Edward Jarvis was the first to study the impact of treatment proximity to admission rates to mental hospitals. He concluded that admission rates declined as a result of increasing distances from individuals’ households, which became known as Jarvis’ Law (Jarvis 1852; Sohler and Thompson 1970; Sohler and Clapis 1972; Joseph and Phillips 1984). Incorporated into Jarvis’ Law is the notion of distance decay, which states that the relationship between two locations disappears as distance between them increases (Fotheringham 1981; Joseph and Phillips 1984; Eldridge and Jones 1991). Dear (1976) maintained that admission to mental health

treatment is the result of three components; the roles of services, the demographics of clientele, and the juxtaposition of treatment. Service availability depends primarily on the institutional intake policies as well as the capacity of the facility and the costs of treatment. An additional influence on treatment services is the severity of mental health problems and treatment needs of potential patients. Finally, the likelihood of receiving services depends on the distance from the individuals' residence to treatment. These earlier works on healthcare accessibility laid the foundation for contemporary research, especially that concerning spatial accessibility to healthcare (Luo and Wang 2003; Guagliardo et al. 2004; Luo 2004).

By today's standards, healthcare professionals consider accessibility as an important factor in public health (Guagliardo 2004). Healthcare accessibility and availability can be better understood if we study their stages and dimensions. First, stages describe development from potential to realized delivery systems. Potential systems appear when there are individuals seeking services and healthcare providers who can deliver such services. On the other hand, realized care systems reflect those that have recognized and overcome obstacles to services (Penchansky and Thomas 1981). Second, healthcare accessibility and availability are dimensions of "spatial accessibility" (Guagliardo 2004).

Healthcare Accessibility

Scant research exists on barriers to spatial accessibility such as travel distance that limits access to care. However, Fortney et al. (1995, 1999) examined distance to travel in relation to the utilization of mental health and substance abuse treatment

services. Results confirmed that patients who lived closer to primary treatment providers were more likely to receive care from their primary provider and made more trips to treatment than those that lived greater distances from their primary provider.

Teach et al. (2006) assessed spatial accessibility of urban children with asthma to primary care physicians. In a sample of 411 respondents, children with higher spatial accessibility made more scheduled visits to their physician as compared to children with lower spatial accessibility. Like Wells et al. (2002), Teach et al. (2006) note the challenges faced by the underprivileged in accessing services.

Elements of spatial accessibility. Spatial accessibility is a multidimensional concept that includes four elements: provider-to-population ratios, travel impedance to nearest provider, average travel impedance to provider, and gravity models (Gesler 1986).

Provider-to-population ratios describe the number of providers and services per resident within circumscribed areas. Population and provider resource data are often easy to acquire and they do not necessarily utilize GIS instruments or methods. Ratios constitute the unit of analysis, for areas such as states, counties, and healthcare service regions. Once the ratio is calculated, researchers determine if provider-to-population ratios are associated with healthcare delivery. As with all concepts, provider-to-population ratios have some limitations. First, patients who cross borders to receive services are not taken into consideration. This is a significant limitation in that individuals often have to cross boundaries because treatment opportunities may

be limited or nonexistent in their area of residence (Connor, Kralewski and Hillson 1994; Probst et al. 2007). In addition, ratios do not recognize disparities to accessibility within boundaries. Further, ratios do not provide the information necessary to compute measures of distance and time to travel (Guagliardo 2004).

Travel impedance to the nearest provider measures the distance from an individual's address to the healthcare facility. This measure is satisfactory for measuring straight line (Euclidean) distance. However, not all areas contain roads or streets that can be measured as a straight line. Fryer et al. (1999) found that this approach is not suitable for urban areas due to multiple providers located close to each other. Analysis in some rural areas also would suffer from such an approach, due to the winding roads in their region (Guagliardo 2004).

Average travel impedance to provider is a combination of both availability and accessibility. Like travel impedance to the nearest provider, average travel impedance to provider calculates the distance from an individual's address to a healthcare facility, and the value is "summed and averaged" (Guagliardo 2004:4) for all individuals. This technique is seldom used in healthcare research (Dutt et al. 1986). Limitations associated with this approach are twofold. First, provider resources can be overestimated when they are centralized in the area under investigation. Second, like provider-to-population ratios, average travel impedance to provider does not consider boundary crossing.

Gravity models employ a combination of availability and accessibility. They were originally constructed to help in the aid of land development (Hansen 1959), and

are considered the most efficient measure of spatial accessibility either in an urban or rural atmosphere. The goal of gravity models is to establish a framework based on interaction between an individual's location and treatment locations. A flaw in gravity models is that as travel impedance increases, models weaken, which leaves individuals vulnerable to obtaining no services.

Healthcare Availability

Neale, Sheard and Tompkins (2007) used a qualitative approach to study the barriers injecting drug users (IDUs) faced when trying to acquire drug treatment and other services in three areas of England. They identified several obstacles to effective treatment, including a complete absence of services for IDUs in some areas and an inadequate number of service providers for the increasing number of drug users (Metsch and McCoy 1999; Wood et al. 2002; Freund and Hawkins 2004; Sterk, Elifson and Theall 2000; Deck and Carlson 2004). Further analysis revealed that most respondents were content with the services they received, but the authors made three recommendations to enhance healthcare availability. First, many respondents believed that providing more service personnel would make availability easier for IDUs. In particular, many IDUs felt that services in rural areas were limited, and that service provision should be increased in rural areas. Also, most IDUs mentioned that there was a consistent need for more specialized community services, such as substance abuse and mental health treatment. Conversely, respondents living in urban areas sought more general services, like being able to call on providers on an informal basis. IDUs also recommended improving transportation to and from

treatment, for example, by providing bus fare, especially for those who received treatment on a daily basis (Neale et al. 2007).

Second, many IDUs were aware that in order for current operations to be more efficient, programs would have to provide more treatment assets. Respondents indicated that waiting for medication took too long, but they were sensitive to the fact that the number of service professionals was limited. A smaller number of respondents suggested that healthcare facilities be more private, which would allow for the safeguarding of IDUs confidentiality. IDUs also stated that drug treatment should be made available to couples. This, they felt, would allow each one to play a supportive role for the other and aid in preventing relapse for one or both individuals (Neale et al. 2007). In the three areas studied, couples treatment was not always feasible due to staffing issues.

Third, in rural areas, IDUs claimed that insufficient availability of drug services was due to the inability to attract professionals away from urban areas, and high turnover rates among staff successfully recruited to these areas. However, IDUs mentioned that professionals in rural areas were more approachable than their counterparts in urban settings. In general, IDUs felt that providers should be less critical in assigning labels based on their clients' histories. Furthermore, IDUs believed that if providers were more supportive, greater strides in treatment could be made. Lastly, IDUs indicated that proper training was imperative, and that former drug users should be allowed to participate in service provision (Neale et al. 2007).

These suggestions provided by IDUs would increase the likelihood of healthcare availability, which, in turn would increase their chance of an effective recovery.

In a similar study, Marsh, D'Aunno and Smith (2000) analyzed the implementation of healthcare in Illinois for mothers who have a drug abuse problem. Respondents were asked about their previous experiences with drugs as well as their current use. Using a quasi-experimental design, a path analysis revealed that women often could not access programs such as transportation and child-care, even when they were made available in their area. Since services were not accessible, women were not able to participate in drug treatment. However, staff attributed their absence from the program to substance use. The authors conclude that: 1) “the absolute number of services for women has been inadequate; 2) women face significant barriers to gaining access to services even when they are available; and 3) many services for women do not effectively address health, mental health, and family problems of women” (Marsh et al. 2000:1245).

Recently, Mobley et al. (2006) assessed admission for Ambulatory Care Sensitive Conditions (ACSC) amongst the elderly. Examining the admission rates of the elderly during the 1990s, as well as the location of more than 6,000 general physicians, the authors reached some conclusions about the availability of services for the elderly. Using spatial regression, results indicated that elderly persons living in urban settings had a greater likelihood of being admitted to an ACSC facility than those living in rural areas. This was attributed to the fact of greater physician

availability in urban areas. The authors conclude that by locating more physicians in rural areas, the influx of elderly patients being admitted for ACSC should increase.

Sherman et al. (2005) discuss the concept of “activity space,” and how it relates to travel-to-service in the western part of North Carolina. Often, the standard deviational ellipse (SDE) is used to calculate distance to travel. However, Sherman et al. (2005) used several alternative analytical techniques including calculation of road network buffers (RNB), thirty-minute standard travel time polygons (STT), and a relative travel time polygons (RTT) to calculate distance to services. They assert that activity space can be defined as “the availability of healthcare opportunities within that individual’s activity space” (Sherman et al. 2005:2). This definition was compiled from a review of extant studies on activity space (Gesler and Meade 1988; Kwan 1999; Golledge and Stimson 1997; Nemet and Bailey 2000). When incorporating structures such as roads into the analyses, calculating the SDE is most useful, but the STT is acceptable to use when an individual lives in an area close to roads, which makes access to services easier. RNB and RTT could be used in the situation of bypassing areas, and RTT showed the strongest relationship between activity space and services.

Conclusion

Since healthcare accessibility/availability research supports the assumption that individuals benefit from effective treatment, denying sex offender’s ready access to treatment is problematic, in that it can enhance the likelihood of failure in treatment and criminal recidivism. In the next chapter I describe an approach to

determine access to sex offender treatment in Kentucky, identify those who might be at a disadvantage in accessing mandated treatment, and describe environmental risk factors faced by those offenders.

CHAPTER III

METHODS

Building on the research questions presented in Chapter I, this chapter presents the general research approach used in this study, primary subject groups and data collected, study population characteristics, the measurement of independent and dependent variables, and quantitative analytical techniques.

Research Approach

In brief, the purpose of the research is to investigate the implementation of the treatment component of the Containment Model in Kentucky. Of specific interest is the degree of access and availability of sex offender treatment for offenders located in the community. The first stage of research involves determining the location of treatment services and sex offenders under active corrections supervision that are required to seek services. Given additions and deletions from the group of treatment providers as well as offenders seeking treatment, and geographic mobility of each group, I anticipate that a cross-sectional analysis will show that all sex offenders do not experience equal access, in a spatial sense, to treatment. Therefore, the next stage of the analysis involves describing the nature and degree of disparity in treatment access experienced within the study population of sex offenders. Of particular interest, both for analytical and policy reasons, are those offenders who are relatively disadvantaged in their access to mandated treatment. Further investigation will explore characteristics of communities in which these offenders reside, with special attention directed towards factors that could influence criminal recidivism.

Geographic Information Systems (GIS): A Brief Overview

Since this study conceptualizes treatment access in a spatial sense, it relies heavily on spatial research tools to manage and analyze geographical data. Since its inception in the early 1960s, GIS have been used in a variety of spatial analysis studies, including healthcare (Hare 2004; Hare 2005), income inequality (Reeves and Parkansky 2006), and crime mapping (Block and Block 1995; Brantingham and Brantingham 1995; Eck et al. 2005; Sherman, Gartin and Buerger 1989; Steele, Guerin and Nakao 1993).

Spatial means “related to the space around us, in which we live and function” (Clarke 2003:3). The basic components of a GIS consist of three parts: (1) the database; (2) the map information; and (3) a way of combining the two together. The functionality of a GIS relies on a computer, individuals to use the system, and software.

The structure of a GIS is comparable to other types of software that utilize spreadsheets or word processors. First, GIS software maintains a framework and templates, which allow for the collection, collation, and analysis of the data. Second, based on the data, the individual using the system determines what parts are necessary and unnecessary to use (Boba 2005).

The capabilities of a GIS are not limited to the construction of maps; users are able to view data geographically, merge pieces of data together, and manipulate data sources and map configurations. Additionally, a GIS performs statistical analyses for further interpretability of the data (Boba 2005).

In this study, a spatial analytical approach was used to determine the distances sex offenders travel to treatment resources, which becomes a measure of accessibility. Since sex offenders are a heterogeneous group, there may be a disadvantage that exists in travel time in minutes to sex offender treatment resources. This may be attributed to the environments sex offenders are placed in once they are probated or paroled back in to the community. Indicators of neighborhood characteristics will either exacerbate or neutralize the likelihood of sex offenders accessing treatment resources.

Subject Groups, Data Sources, and Data Collection

The research relies on information concerning three study groups: sex offender treatment providers, sex offenders under supervision by State Department of Corrections (DOC) in community settings, and communities in which offenders reside.

Treatment Providers

Sex offender treatment is provided by two groups of professionals in Kentucky; those who are employed by the DOC (N=6), and private providers (N=47) who have been approved by the State to treat sex offenders. As a part of a larger study conducted at the Center for Justice Studies at Morehead State University, both types of treatment providers were interviewed from May to July 2007. Relevant to the current study, interviewees provided the geographic location and client capacity of each treatment group. Data were entered into a Statistical Package for the Social Sciences (SPSS) data file, version 15.0. Accuracy of the data was checked

periodically and, when needed, revisions were made to the database. The locations of treatment providers were confirmed again from June to July 2008 to determine changes in providers and so they could be accurately mapped using ArcMap 9.2.

Sex Offenders

Sex offenders comprising the subject population for this study were those under DOC community supervision in the state in July 2008 (N=1074). Data were retrieved from the Kentucky State Police Sex Offender Registry (kpsor.state.ky.us). Information collected consisted of where sex offenders reside, their gender, ethnicity, and age. Residential data were mapped in a manner similar to that used for the treatment providers. Coding schemes were developed to manage demographic data¹, and entered into SPSS 15.0 for analysis.

As shown in Table 3.1, males (95.7 percent) make up the overwhelming majority of sex offenders under community supervision, and are overrepresented compared to the general population of Kentucky (48.9 percent). In Kentucky, white sex offenders (85.0 percent) greatly outnumber offenders of other ethnic groups, including black offenders (13.2 percent) and others (1.8 percent). Black sex offenders (13.2 percent) are slightly overrepresented compared to the general population (7.3 percent). The mean age of sex offenders under community supervision is 41.05 years. The youngest offender under community supervision was 17 years, while the oldest was 88 years of age.

¹ 0=Male and 1=Female for gender; 1=White, 2=Black, and 5=Other for ethnicity; and age at time of data collection was calculated in whole years.

Table 3.1. Demographic Characteristics of Sex Offenders under Community Supervision (in percentages).

Gender	Sex Offenders	Kentucky*
Male	95.7	48.9
Female	4.3	51.1
Ethnicity		
White	85.0	90.1
Black	13.2	7.3
Other	1.8	2.6
Age		
Mean	41.05	
Median	40.00	
Range	17-88	

*Source: U.S. Census, 2000

Communities

To determine the characteristics of communities in which sex offenders reside, I extracted data from the U.S. Census estimates for 2007, using PCensus 8.73. Information retrieved consisted of family and community characteristics, which may be associated with the likelihood of sexual reoffending. Data were entered into SPSS 15.0 for analysis.

Measurement of Variables

Dependent Variables

Treatment accessibility, the dependent variable for the analysis, is measured as time of travel in minutes. The dependent variable was calculated for time to the nearest treatment location, but also as the average time to the nearest three and five

treatment locations. Travel to multiple locations was considered due to the possibility that the treatment capacity for some providers might not meet the demand for service, particularly near geographical concentrations of sex offenders.²

A travel time origin-destination (OD) matrix was calculated between all offender residences and all provider facilities using ESRI's ArcGIS 9 (2008). The resulting matrix was transformed into a series of attributes including travel times to nearest facility and various statistical aggregations of the nearest several provider facilities. In other words, beyond travel time to the facilities used, travel times were calculated to the nearest facilities and to a variety of sets of facilities close to each patient's residence. Some studies show that given choices, patients often travel further than the nearest hospital for medical care (Gesler and Meade 1988; Bronstein and Morrissey 1991). Such decision-making depends on a variety of factors, such as the perception of personal needs and available treatments (Gesler and Meade 1988). Gesler and Meade (1988) also suggest that people are more likely to bypass the nearest clinic when they reside at increasing distances from the nearest clinic. Hence, accessibility to multiple facilities is assessed near patient residences, specifically calculating mean travel times from each offender residence to the nearest sets of one and three service provider facilities, as well as to all facilities in the study area. Also, travel time calculations were used from provider facilities to characterize service

² After analyzing the distribution of offender time-to-treatment for the nearest five provider locations, and correlating it to community characteristics, it was found that this contributed little empirically to the research. From a policy standpoint, offenders were not likely to be denied access from more than three nearest treatment sites. As a result, analysis of average time-to-treatment for the nearest five provider locations was dropped, and time to the nearest and three nearest sites was retained.

areas. ArcGIS and PCensus were tested for these calculations which revealed the results to be identical. Hence, PCensus was used for the final service areas maps due to its speed and simplicity.

Independent Variables

Family Characteristics. Based on earlier research (Ohlin and Tonry 1989; Crowell and Burgess 1996; Lauritsen and Schaum 2004), three indicators of family structure and economic vulnerability were selected from U.S. Census data for analysis: percentage of families below poverty, percentage of female-headed families below poverty, and percentage of female headed households with children.³ Census data were accessed from PCensus 8.73 at the block group level. Measures were calculated for residents of neighborhoods in which sex offenders lived.

Neighborhoods were operationalized as a group of contiguous census blocks within 0-2 minutes driving time of the residence of the sex offender. Note that in the case of 28 offenders who lived in extremely rural areas that the definition of their neighborhood was extended to residents of census blocks within 0-6 minutes of the offender's residence, due to low population density.

Community Characteristics. Four indicators of community characteristics were also selected from the U.S. Census data for analysis: micropolitan community, metropolitan community, population density, and owner occupied housing value, all

³ Other family indicators considered but dropped from the final analysis, due to issues of low association with the dependent variable or collinearity with independent variables, are average household size, percent of homes headed by a female householder with one or more children under 18, average number of vehicles, percent of married couples with children, average age, and divorce rate.

which have been related in earlier studies to social disorganization and community general crime rates (Bursik 1988; Sampson and Groves 1989).⁴ As with family characteristics, community factors were measured for census blocks within 0-2 minutes driving time of the sex offender's residence (and, as noted above, within 0-6 minutes of offenders residing in extremely rural areas).

Table 3.2 provides descriptive statistics of all the variables. As shown in Table 3.2, the unlogged mean travel time, in minutes, for sex offenders to their nearest and three nearest treatment providers are 24.942 and 32.523, respectively. Sex offenders reside in communities where, on average, 15.441 percent of the families live below the poverty level, while 44.689 percent of families headed by a female live below the poverty line. A female heads 8.414 percent of families, on average, in communities in which sex offenders reside. The population density in these communities ranges from a low of 11.999 people per square mile to a high of 20006.998 people per square mile. The owner occupied housing value of communities in which sex offenders live varies from \$16221.236 to \$305511.259. Last, sex offenders more likely live in communities that are primarily metropolitan (0.616) compared to micropolitan (0.159) or rural (0.234; not shown). Metropolitan areas contain urban concentrations of more than 50,000 residents, whereas

⁴ Other community indicators considered but dropped from the final analysis, due to issues of low association with the dependent variable or collinearity with independent variables, are unemployment rate, average house value, percent educational attainment, single female household by type, and average household income.

micropolitan areas have more than 10,000 but less than 50,000 residents, and rural areas have no urban concentrations greater than 10,000 (U.S. Census 2000).

Table 3.2 Descriptive Statistics.

Variables	Mean	SD	Min	Max
Nearest Provider (ln)	2.536	1.287	-2.813	5.177
Nearest Provider	24.942	27.992	0.060	177.160
Nearest Three Providers (ln)	2.947	1.144	-1.297	5.236
Nearest Three Providers	32.523	31.706	0.273	188.007
Families Below Poverty	15.441	9.407	0.000	51.519
Female Families Below Poverty	44.689	20.202	0.000	100.000
Female Householder with Child	8.414	4.825	0.662	29.127
Population Density	3959.899	4312.715	11.999	20006.998
Owner Occupied Housing Value	73256.563	31842.053	16221.236	305511.259
Metropolitan	0.616	0.485	0.000	1.000
Micropolitan	0.159	0.363	0.000	1.000

N = 1074

Data Analysis

To assess differential treatment access, this study uses several different spatial and traditional non-spatial analytical strategies. GIS and spatial data analysis techniques include several methods of GIS data visualization, kernel density mapping, and travel time modeling. Non-spatial techniques used are descriptive measures of central tendency, bivariate correlations, and multivariate regression. The latter were used to explore the effects of the independent variables on sex offender time-to-treatment to their nearest, and three nearest, treatment providers.

All of these analyses depend on the accurate determination of the locations of service provider facilities and offender residences. While there are a wide variety of applications for the geocoding of address information, all depend on standardized

address information. The initial databases contained address information for each facility and offender residence, spread across several variables. Many of the addresses, however, were not formatted appropriately for geocoding. Hence, the first stage was to clean and correct the address information in the data files. Several different tools for geocoding were explored, including ArcGIS 9, PCensus 8.73, and Batch Geocoder (www.batchgeocode.com). After testing of the tools, Batch Geocoder was used due to its simplicity, dependence on a known and well-respected road-address database NAVTEQ, and low number of ungeocoded addresses. Samples of geocoded locations to check for accuracy were also examined.

The geocoded facilities and offender databases were loaded into ArcMap 9.2 and GIS data files were created using the corresponding latitude and longitude for point locations, and associated data fields for attribute columns. These were the basis of the basic point maps of facilities and offender residences. Data layers were overlaid on a base map of Kentucky, including data layers for state, county, and municipal boundaries, major towns and cities of Kentucky, and an outline of the Kentucky counties defined as being located in Appalachia.

Point maps are useful subjective manifestations of spatial distributions, but can often be difficult to interpret objectively, especially for data layers with large numbers of features. However, point data were used as the basis for creating density maps to better reveal underlying patterns in the point distributions (Levine 2005). Based on previous crime mapping projects (Block and Block 1995; Brantingham and Brantingham 1995; Eck et al. 2005; Sherman, Gartin and Buerger 1989), kernel

density estimation were used to generate density surfaces for each of the point data sets. Kernel density estimation is a nonparametric statistical method for estimating probability densities where points can have attached continuous values or weights. Fundamentally, kernel density estimation describes the probability of finding a particular feature in any one place.

The previous techniques are targeted at identifying patterns in the distributions of individual sets of features, but the study also entails exploration of offender accessibility to provider facilities. The calculation of accessibility measures entails relating the locations of offenders' residences with locations of service provider facilities. In order to approximate the difficulty of traveling to services, travel times were calculated in minutes between offender residences and all available service provider facilities. Travel time data derives from the point locations of service provider facilities, the point locations of offender residences, and a database of the Kentucky road network, following the model constructed by Liu and Zhu (2004). Travel time calculations derive from the length and speed limit for specific route segments as well as the nature right and left turns at intersections.

Two correlation matrices were constructed to describe the relationships among the dependent and independent variables. Also, the correlation matrices provide some evidence for multicollinearity between the independent variables. For the OLS regressions, each dependent variable (i.e., the nearest, three nearest, treatment providers) were subjected to a logarithmic transformation, as shown previously in Table 3.2, due to skewed, non-normal distributions of these dependent

variables. As seen in Table 3.2, the descriptive statistics for the logged dependent variables show less skewing than is the case with the raw measures of these same variables. Two sets of block entry, stage-wise OLS regressions were calculated using the naturally logged dependent variables and the measures of independent variables. Results from the OLS analysis describe the association between covariates and each dependent variable.

CHAPTER IV

RESULTS

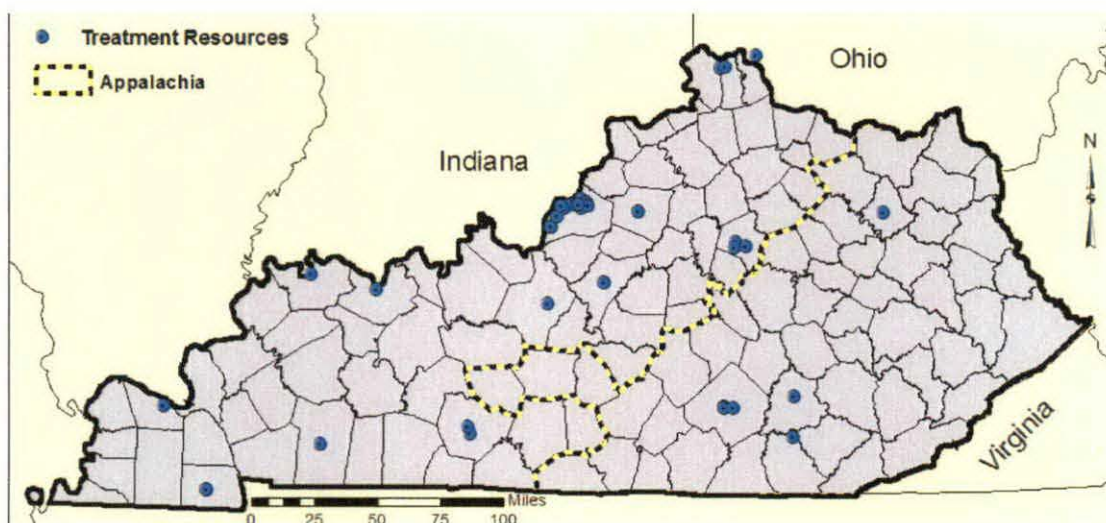
This chapter presents the findings resulting from implementing the research methods described in Chapter III. First, I present the location of treatment resources and sex offenders. After identifying treatment and offender locations, I present time-to-treatment results, including descriptive measures of central tendency and travel time variations among offenders. Time-to-treatment calculations for each offender are then associated with characteristics of communities in which they reside.

Location of Treatment Resources and Sex Offenders in Kentucky

Treatment Resources

Figure 4.1 illustrates the dispersion of treatment resources throughout Kentucky. Many providers are located in urbanized areas (i.e., Louisville, Lexington, and Northern Kentucky). The yellow and black dotted line represents the boundaries

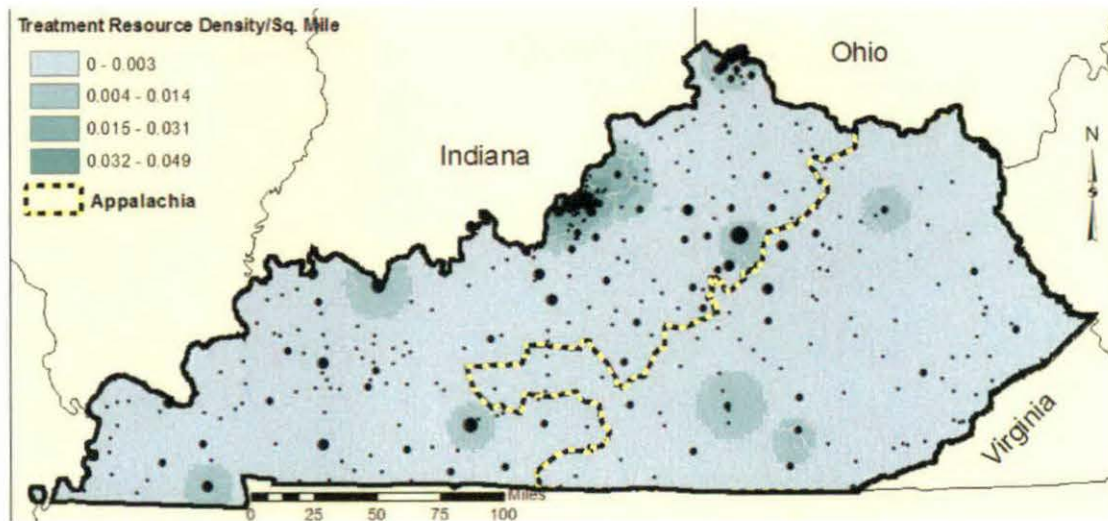
Figure 4.1. Treatment Locations in Kentucky.



of the Appalachian region of the state. As indicated in the Figure, relatively few treatment locations are situated in the Eastern, or Appalachian, portion of Kentucky, a geographic area that is predominantly rural.

Figure 4.2 provides a kernel density map of treatment resources for geographical areas. As mentioned previously, kernel density estimation describes the probability of finding a particular feature in any one place. Simply stated, the darker the area of the map, the more treatment resources there are accessible to sex offenders. On the other hand, the lighter the color, the lesser the amount of treatment resources there are accessible to sex offenders. Concentrations of treatment resources are located in metropolitan areas (i.e., Louisville, Lexington, and Northern Kentucky) out of the Appalachian region.

Figure 4.2. Density of Treatment Resources by Population in Kentucky.



Sex Offenders

Residential locations of sex offenders under community supervision in Kentucky are illustrated in Figure 4.3. Although offenders are dispersed throughout the state, sex offenders under community supervision are concentrated in urbanized areas, similar to the location of treatment resources. However, a substantial number of sex offenders under community supervision also reside in Appalachian counties.

Figure 4.3. Residences of Sex Offenders under Community Supervision in Kentucky.

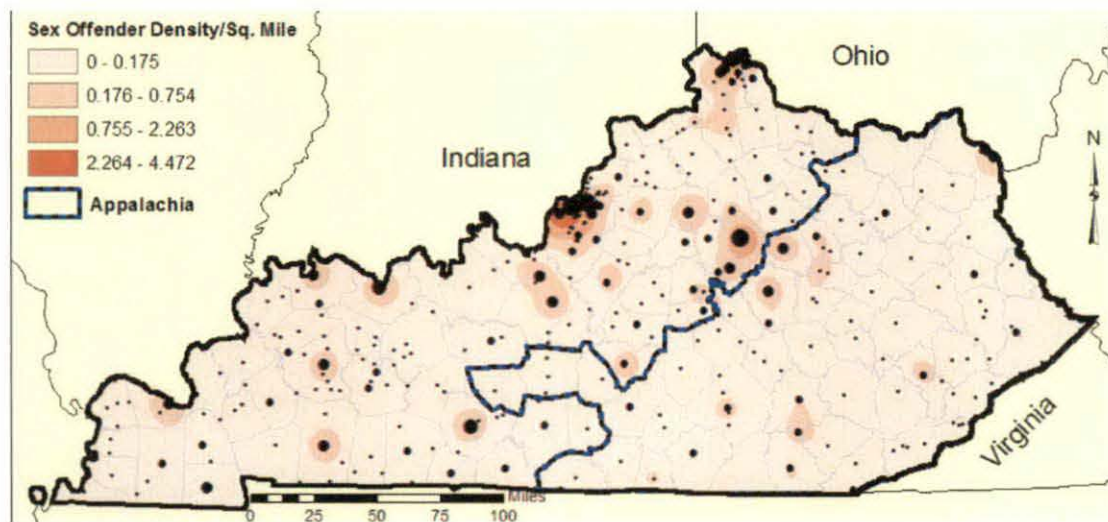


Figure 4.4 more clearly demonstrates the concentration of sex offenders under community supervision. As shown there, offenders are more densely located in large urban areas, with lesser concentrations near smaller cities and towns in the state.

Review of treatment resource and offender residence locations indicates most of the sex offender treatment resources and sex offenders under community supervision are located in urban areas outside of Appalachia. However, an important

portion of sex offenders under community supervision also live in Appalachian rural areas, but treatment resources are relatively limited in these areas. The implications

Figure 4.4. Density of Sex Offender Residences in Kentucky.



of these findings are investigated in greater depth by calculating time-to-treatment for offenders.

Treatment Accessibility: Travel Times for Sex Offenders in Kentucky

From calculation of the origin-destination matrix, Table 4.1 presents the distribution of travel time to nearest treatment provider for all offenders currently under community supervision. The mean travel time to the nearest provider for the entire sample is 24.94 minutes, but nearly half of the offenders live within fifteen minutes of the nearest provider. In contrast, approximately 10 percent of offenders have to travel more than an hour to treatment from their residence. This suggests that a relatively great disparity among offenders in terms of their access to treatment, as determined by their time of travel from home to their nearest treatment location.

Table 4.1. Distribution of Mean Travel Times, in Minutes, for Sex Offenders to their Nearest Provider in Kentucky.

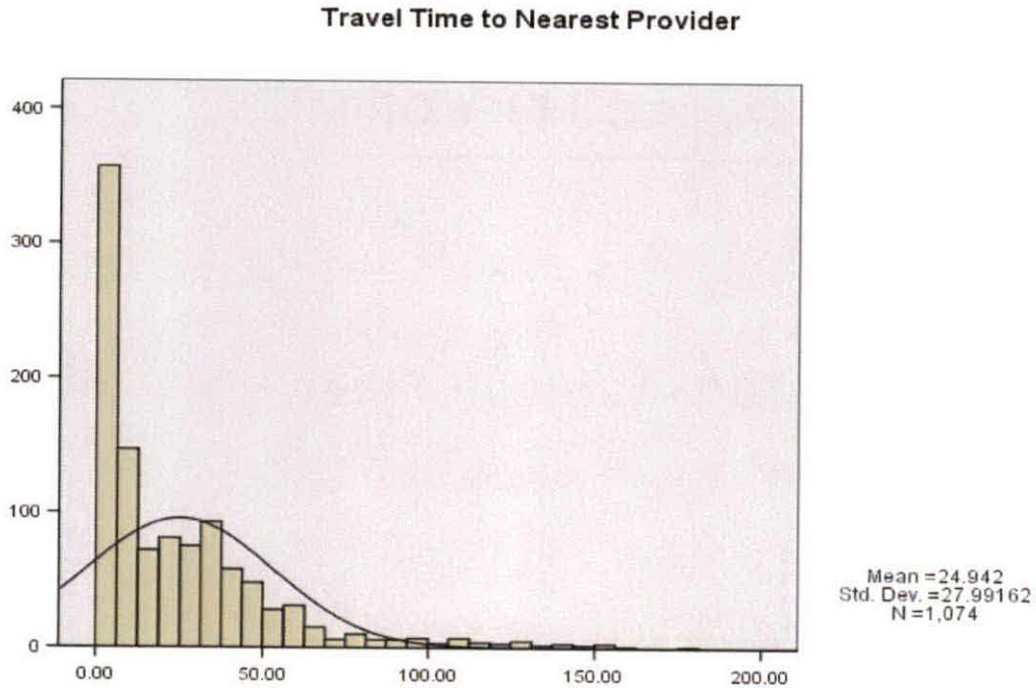
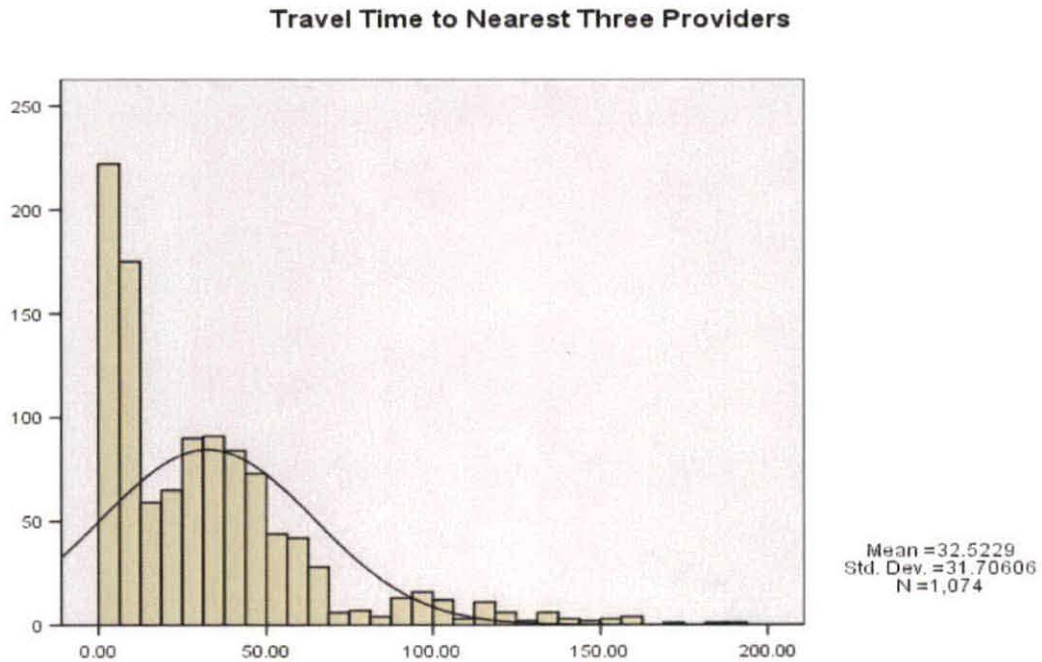


Table 4.2 reveals the results of the OD matrix calculated for sex offenders' travel time to the nearest three treatment providers. This analysis is important in that some offenders might not be able to access services at their nearest provider, because of limited treatment capacity, time conflicts, or prior unsatisfactory experiences in the client-provider dyad. The mean travel time to each of the nearest three providers for the entire sample is 32.52 minutes. Nearly half of the sample still lives within fifteen minutes, on average, of their nearest three treatment providers. Substantial variation in travel times remains among sex offenders, in that approximately 10 percent of the offenders must travel more than one hour to access their nearest three treatment providers.

Table 4.2. Distribution of Mean Travel Times, in Minutes, for Sex Offenders to their Nearest Three Providers in Kentucky.



The inequities experienced by some sex offenders accessing their nearest and three nearest treatment providers may be a result of communities into which sex offenders are probated or paroled. First, there are the inequities of geographic distance and travel time. Second, specific familial and community characteristics may inhibit sex offenders from accessing treatment providers, thus, limiting their ability to develop self-control. The results of the spatial OD matrices shown above are complemented by the analysis of non-spatial factors.

Treatment Accessibility: Community Correlates

Bivariate Relationships

Table 4.3 shows the correlations between sex offenders nearest provider with family and community characteristics. According to the table, travel time to the nearest provider had a weak but statistically significant negative relationship with the proportion of families below poverty within their neighborhood (-0.07). In addition, time to nearest provider had a moderately negative significant association with female families below poverty (-0.36). The last family characteristic, female householder with children also produced a moderate inverse significant relationship with nearest provider (-0.35). Thus, sex offenders residing in communities with lower rates of families living below poverty, female families living in poverty, and female-headed households with children have greater difficulties in accessing mandatory offender treatment, as indicated by their greater travel times.

Among community indicators, travel time to the nearest provider was strongly negatively associated with neighborhood population density (-0.50). Travel time also was negatively associated with the value of owner occupied housing (-0.13). Time to the nearest provider had a significant negative relationship with metropolitan (-0.42), and a moderate positive significant relationship with micropolitan (0.15), indicators of community size. These associations suggest that offenders experiencing relatively great travel times to treatment live in rural neighborhoods with lower home property values. Those residing in large cities benefit from a shorter time of travel to

treatment, while those residing in smaller towns and rural areas experience longer travel times.

Table 4.4 reveals the results of the bivariate correlations between travel time to the three nearest providers and family and community characteristics. Time to the nearest three providers was negatively associated with families below poverty (-0.03) but this relationship was not statistically significant. However, similar to the findings concerning time of travel to the nearest single treatment provider, time to the nearest three providers was significantly negatively associated with the proportion of female families below poverty in the neighborhood (-0.37), and female householders with children (-0.35). Once again, sex offenders who live in communities where there are fewer female-headed families living in poverty and those with smaller proportions of female householders with children are required to travel for longer times to access treatment.

The community characteristics for travel time to the nearest three providers are quite similar to those of time to the nearest single provider. Travel time was found to be strongly negatively associated with population density (-0.51), and less strongly but significantly negatively associated with owner occupied housing value (-0.15). As with travel time to the nearest single provider, time to the nearest three providers had not only a strong negative correlation to population areas described as metropolitan (-0.43), but also a positive and significant relationship with communities described as micropolitan (0.17) in nature.

Table 4.3. Bivariate Correlations among Time of Travel to the Nearest Treatment Provider and Explanatory Variables.

Variables	1	2	3	4	5	6	7	8
1. Nearest Provider (ln)	1.00							
2. Families Below Poverty	-0.07*	1.00						
3. Female Families Below Poverty	-0.36**	0.15**	1.00					
4. Female Householder with Child	-0.35**	0.62**	0.64**	1.00				
5. Population Density	-0.50**	0.32**	0.56**	0.65**	1.00			
6. Owner Occupied Housing Value	-0.13**	-0.62**	-0.01	-0.34**	-0.01	1.00		
7. Metropolitan	-0.42**	-0.19**	0.41**	0.32**	0.49**	0.37**	1.00	
8. Micropolitan	0.15**	0.03	-0.13**	-0.15**	-0.19**	-0.14**	-0.56**	1.00

*p < 0.05; **p < 0.01

N = 1074

Table 4.4. Bivariate Correlations among Time of Travel to the Three Nearest Treatment Providers and Explanatory Variables.

Variables	1	2	3	4	5	6	7	8
1. Nearest Three Providers (ln)	1.00							
2. Families Below Poverty	-0.03	1.00						
3. Female Families Below Poverty	-0.37**	0.15**	1.00					
4. Female Householder with Child	-0.35**	0.62**	0.64**	1.00				
5. Population Density	-0.51**	0.32**	0.56**	0.65**	1.00			
6. Owner Occupied Housing Value	-0.15**	-0.62**	-0.01	-0.34**	-0.01	1.00		
7. Metropolitan	-0.43**	-0.19**	0.41**	0.32**	0.49**	0.37**	1.00	
8. Micropolitan	0.17**	0.03	-0.13**	-0.15**	-0.19**	-0.14**	-0.56**	1.00

**p < 0.01

N = 1074

Multivariate Analysis⁵

Block entry, stagewise OLS regressions were completed to determine the effect of family and community variables on each dependent variable. Table 4.5 presents the standardized (Beta) and unstandardized coefficients, standard errors, and R-squares of regressing the natural logarithm of travel time to the nearest single provider on the independent variables. Model 1 introduces family-related independent variables and finds that they were all significantly associated with the dependent variable at the 0.001 level. Offenders who experienced longer travel times to treatment were more likely to live in neighborhoods with more families living in poverty (0.186), but were less likely to live in neighborhoods with female-headed families living in poverty (-0.146), and female-headed families with children (-0.374). Taken together, the family and community characteristics in Model 1 explain a little over 17 percent ($R^2 = 0.171$) of the variation in the dependent variable.

Model 2, in Table 4.5, introduce community influences to the family characteristics in Model 1. When community factors are added, both families below poverty (0.009) and female families below poverty (-0.035) lose their significance, while female householders with children (-0.094) is nearly significant, at the 0.10 level. On the other hand, all of the community characteristics are significantly associated with travel time to the nearest provider. Population density has a

⁵ SPSS diagnostics for evidence of multicollinearity revealed that this potential problem was negligible in the multiple regression models specified for this study.

Table 4.5. Regression of Time of Travel to Nearest Single Provider (Logged) on Family and Community Characteristics.

Variables	Model 1			Model 2		
	Beta	B	(SE)	Beta	B	(SE)
Constant		3.396	(0.102)***		3.855	(0.179)***
Families Below Poverty	0.186	0.026	(0.005)***	0.009	0.001	(0.006)
Female Families Below Poverty	-0.146	-0.009	(0.003)***	-0.035	-0.002	(0.002)
Female Householder with Child	-0.374	-0.100	(0.013)***	-0.094	-0.025	(0.014)
Population Density		.		-0.329	-0.000	(0.000)***
Owner Occupied Housing Value		.		-0.086	-0.000	(0.000)*
Metropolitan		.		-0.213	-0.006	(0.001)***
Micropolitan		.		-0.059	-0.002	(0.001)
R ²		0.171			0.300	

*p < 0.05; **p < 0.01; ***p < 0.001

N = 1074

moderate negative relationship (-0.329), and the value of owner occupied housing has a weak significant negative association (-0.086) with time to treatment at the 0.05 level. Metropolitan had a moderate negative relationship with nearest provider (-0.213), suggesting that sex offenders living in larger communities benefit from travel to treatment times of shorter duration, and those living in micropolitan (-0.059) and rural areas have longer travel times. Model 2 explains thirty percent ($R^2 = 0.300$) of the variation in the dependent variable.

Table 4.6 presents the results of the block entry, stagewise OLS regression for the natural logarithm of the offender's average travel time to their nearest three providers. In Model 1, each of the family characteristics is significant at the 0.001 level. The proportion of families living in poverty has a moderate positive relationship with travel time to the nearest three providers (0.245), greater than the association found to the nearest single provider in Table 4.5. In addition, sex offenders residing in neighborhoods with smaller proportions of female-headed families below poverty (-0.140) and female householders with children (-0.413) experience longer travel times to treatment. Together, family characteristics in Model 1 explain about 19 percent ($R^2 = 0.189$) of the variation in the dependent variable.

Model 2, in Table 4.6, incorporate community characteristics with those of the family in neighborhoods where offenders reside. Unlike results for travel time to the nearest single provider, families below poverty (0.081) retains a weak, though statistically significant, positive relationship with average travel time to their nearest three providers. The proportion of female-headed families below poverty levels in

Table 4.6. Regression of Time of Travel to Nearest Three Providers (Logged) on Family and Community Characteristics.

Variables	Model 1			Model 2		
	Beta	B	(SE)	Beta	B	(SE)
Constant		3.666	(0.089)***		4.050	(0.157)***
Families Below Poverty	0.245	0.030	(0.005)***	0.081	0.001	(0.005)
Female Families Below Poverty	-0.140	-0.008	(0.002)***	-0.031	-0.002	(0.002)
Female Householder with Child	-0.413	-0.098	(0.012)***	-0.147	-0.035	(0.012)**
Population Density		.		-0.346	-0.000	(0.000)***
Owner Occupied Housing Value		.		-0.101	-0.000	(0.000)**
Metropolitan		.		-0.163	-0.004	(0.001)***
Micropolitan		.		-0.035	-0.001	(0.001)
R ²		0.189			0.314	

*p < 0.05; **p < 0.01; ***p < 0.001

N = 1074

the neighborhood (-0.031) fails to retain significance when the community characteristics are introduced in the regression. Proportion of female householders with children (-0.147) retains an inverse moderate relationship with travel time to the nearest three providers and is significant at the 0.01 level. Population density (-0.346) maintains a moderate negative relationship and is significant at the 0.001 level, and owner occupied housing values (-0.101) maintain a somewhat weak but significant negative relationship with nearest three providers. Both metropolitan (-0.163) and micropolitan (-0.035) measures of community size are inversely related with time of travel to the nearest three providers. Metropolitan is highly significant at the 0.001 level, but the relationship with micropolitan communities is not statistically significant. Model 2 explains roughly 31 percent ($R^2 = 0.314$) of the total variation in the dependent variable. The R-squares for time to treatment with the three nearest providers are slightly improved over those to the nearest single provider presented in Table 4.5. This suggests that for the purposes of this research the average travel time to the three nearest providers is a marginally more reliable measure of treatment access than the travel time to the nearest single provider.

Summary

The results of both the spatial and non-spatial analyses reveal disparities within the population of sex offenders under community supervision in the state. Both sex offenders and treatment resources are concentrated in urban areas. However, the OD matrices reveal substantial differences in travel times to treatment among sex offenders, with roughly 10 percent of offenders having to travel more than

one hour to the nearest treatment provider, and somewhat longer to the average of the nearest three providers. Offenders having to travel the greatest difference reside primarily in the most rural areas of Kentucky, characterized by higher levels of poverty, lower housing values, and the absence of any substantial population concentrations. These findings are discussed in relation to Containment Theory and the Containment Model in the next chapter.

CHAPTER V

DISCUSSION

This chapter discusses the research findings concerning access to sex offender treatment and their implications for the Containment Model, within the context of Reckless' Containment Theory. Based on these findings, I propose some recommendations for reducing inequities in treatment access in Kentucky.

Implementing the Containment Model in Kentucky

Returning to the initial research question, a critical component of the Containment Model is the provision of treatment services to sex offenders. Among these services is sex offender treatment, as well as others such as substance abuse and mental health treatment. The current research indicates that Kentucky has in fact created a network of sex offender treatment programs that are operated by the Department of Corrections. Most treatment providers are employees of the Department, while some offenders receive services from private providers hired on a contractual basis. In a general sense, treatment program sites and offenders are similar in their geographical location: most offenders reside, and most program services are located, in urban areas such as Louisville, and Northern Kentucky. Fewer offenders live in rural areas, and fewer providers are located there. However, the research findings show only an approximate geographical match between the offender residences and treatment locations.

By using spatial analysis techniques, I discovered that a relatively great disparity in access to sex offender treatment exists for offenders in the

Commonwealth. Specifically, while treatment access is a multidimensional concept, there are great differences among offenders on one important dimension: that of time of travel to treatment locations. Fortunately, travel time to treatment does not pose a great obstacle to most offenders, as indicated by the fact that the mean travel time to the nearest provider is 25 minutes (Table 4.1), and the mean travel time to an average of the three nearest providers is slightly over one-half hour (Table 4.2). On the other hand, some offenders are required to travel more than two hours to the nearest treatment location.

I conclude that, as a portion of its efforts to implement the Containment Model, the Commonwealth has made a significant investment in the provision of sex offender treatment to those who are under supervision in the State. However, some offenders are relatively disadvantaged in being able to access those services. Relating this to Reckless' Containment Theory, I conclude that offenders who must travel for longer periods of time to treatment are at greater risk for failing to develop effective personal inner controls and not experiencing the outer control provided by therapists and other offenders who participate in treatment groups.

Distinguishing Sex Offenders Based on Access to Treatment

Having established, based on travel times, a disparity in access to treatment, I investigated some distinctions between offenders based on this differential. I found that offenders with relatively easy access to their nearest treatment location lived mostly in urban areas, and practically all of those who had easy access to their three nearest treatment sites lived in urban areas. While not a part of the current study, I

assume that access for urban-residing offenders was also facilitated by the availability of cheap public transportation.

Those who had to invest the most time and energy into accessing treatment lived in rural areas of the State. A strong and statistically significant negative relationship exists between population density of the neighborhoods in which offenders reside and their time of travel to treatment. When comparing time to treatment based on the size of the community in which offenders reside, a slight distinction resulted from comparing access to the nearest, and three nearest, treatment locations. In both cases, the direction of the relationship between community size and time to treatment was negatively associated, but the relationship with travel time for those living in small towns (micropolitan areas) became non-significant when considering access to the nearest three provider locations. I interpret this to mean that some offenders live near the few treatment providers located in the highly dispersed non-urban locations in the State. While these offenders might conveniently access the nearest location, they would have to travel a great distance to their next two nearest provider locations. On the other hand, if an urban-dwelling offender were not able to gain access to treatment from their nearest treatment provider, they would not have to travel much further to the next nearest provider.

Besides their rural nature, the locales in which offenders with less access to treatment reside can be distinguished in terms of family structure and economic conditions. Considering access to the nearest three provider locations, offenders with longer travel times live in areas with a significantly higher proportion of families

living below poverty when controlling for all other factors (Table 4.6). In addition, the value of owner occupied housing is significantly less in areas where these offenders reside. When considering access to the single nearest provider location, the significance of families living in poverty is lost when community variables are introduced in Model 2, but the association with property values remains significant, when controlling for all other factors (Table 4.5).

Contrary to expectations, offenders who travel longer to their nearest and three nearest treatment providers live in locales that are less likely to have high proportions of female-headed households living in poverty and families headed by females with children. The statistical significance of these relationships is lost when introducing community variables in Model 2, with the exception that significance is retained for families headed by females with children in the situation of travel time to the three nearest providers.

Reckless' Containment Theory provides a basis for speculating about the influence of neighborhood factors on recidivism among sex offenders under community supervision. Those who live in urban areas, with relatively short travel times to treatment, benefit not only by increase ease of access to treatment, but also from living in neighborhoods with more wealth as indicated by higher owner occupied housing values and less poverty. The latter might suggest better employment opportunities in the area, and a job could be considered a form of outer control, from Reckless' perspective. However, to the degree that the proportion of female-headed households with children in their neighborhood is a valid indicator of

local social disorganization, urban-based offenders might be living in less regulated and organized areas. Social disorganization could indicate lower outer control and increased opportunities for reoffending, using Reckless' conceptualization.

Conversely, rural-residing offenders who must travel longer times to treatment could be depicted as living in more socially organized areas, increasing outer control, but also in relatively impoverished locales offering fewer economic opportunities. While certainly not definitive, these hypotheses could be investigated in future research using more direct measures of community disorganization and economic opportunity.

Risk to participation in and completion of treatment is obvious when linking economic disadvantage with the long travel times to treatment experienced by sex offenders. Assuming the data accurately indicate that offenders living in rural areas experience longer travel times and share the economic deprivation characteristic of the locales in which they reside, they are likely to find it difficult to arrange stable plans for travel to treatment, for a number of reasons. First, while not directly measured in the current study, the research literature suggests that sex offenders are typically economically impoverished, since they are undereducated, lack work skills, and employers might be reluctant or prohibited from hiring them (Levenson, D'Amora and Hearn 2007; Mustaine, Tewksbury and Stengel 2006; Zevitz 2004). Sex offenders also incur costs associated with their conditions of probation and parole: they are required to pay for a range of treatment services and supervision costs. For sex offenders, finding work at this time is particularly hard under the current difficult economic conditions, but especially in the depressed economic areas

in which those who must travel longer to treatment reside. Second, because of their precarious financial situation, sex offenders are unlikely to own or be able to maintain their own vehicle. This is problematic given that affordable and convenient public transportation is not available in rural areas of the State. Without personal or public transportation, offenders must rely on members of the limited number of people that make up their social networks, usually family members, to provide transportation to treatment. The resources of their networks to help is limited, however, since they are likely to suffer similar economic disadvantages and lack flexibility in their employment, child care and other obligations to loan their vehicle to the offender or devote much time to transporting the offender to and from treatment.

Policy Implications

It is in the interest of the Department of Corrections and the Commonwealth of Kentucky to address inequities in access to treatment for sex offenders. Using a “fair and equal treatment” definition, the State should invest effort into understanding disparities in treatment access among sex offenders, and attempt to minimize them as much as is practical to confirm its commitment to social justice, equality and nondiscrimination. From the perspective of promoting public safety, it makes sense to assess the challenges faced by offenders who find it difficult to access treatment, and determine the risk this poses to dropping out of treatment, violating conditions of community supervision, having one’s probation or parole revoked, and committing new sex-related or other crimes. This research is complex and beyond the scope of the current study. However, the findings presented here suggest that offenders who

live at great distance from treatment services can find it quite difficult to conform to the requirements of participating in treatment and thus reap its monitoring and therapeutic benefits.

Using time of travel as a single measure of treatment access, there are three possible courses of action that could reduce disparities among offenders: redistributing treatment resources closer to the residences of sex offenders, relocating sex offenders closer to treatment resources, or some combination of both.

Redistributing Treatment Resources

It might be possible to modify the overall geographical matrix of treatment locations to match more closely that of sex offender residences. The current analysis can easily be extended to identify locations where the Department might reasonably expect offenders to reside in the future, based on the addresses of current and previous offenders under treatment. Redistribution of services might provide a partial solution, if the research identified a chronically underserved area of the State with a consistent need for services. The Department is developing satellite treatment locations, offering services on a part-time basis, which could help in reducing travel time. Their success depends on finding and convincing qualified specialized treatment providers to relocate in isolated rural areas or travel some distance to the treatment site. Private therapists can be particularly difficult to recruit into rural practice, since they rely on densely populated areas to provide a constant flow of clients for their general practice. Success also depends on accurate placement of treatment locations, based on spatial analysis.

Over time, a close fit with the geographical residential pattern of offenders requiring treatment could be difficult to achieve and maintain. Many sex offenders move frequently, and the offender population constantly changes, as new offenders require treatment and others complete it. Investment in a new treatment location is expensive, although part-time facilities could be established if qualified staff could be convinced to travel from site to site in each work week. Regardless if the facility operated on a full- or part-time basis, citizens and community groups commonly mobilize in opposition to establishing a sex offender program in their area.

Relocating Sex Offenders

As an alternative, offenders could be required to live near treatment programs and providers to facilitate access. This solution would require rural offenders to relocate to urban centers. Advantages of this approach are that urban areas maintain reliable public transportation systems, and it might be easier to relocate offenders than specialized service providers and facilities.

This strategy also has some disadvantages. By removing offenders from their home communities, they lose the assistance offered by family, friends and other local indigenous support groups. These networks are critical in the current system for helping offenders meet their other needs for housing, employment and affiliation. Offenders are not likely to go along willingly with a policy that forces them to live in an area not of their own choosing, and urban areas are likely to be opposed to such a policy, using their political influence to oppose it. Given their impoverishment, if offenders relocated to urban areas, they would be most likely to live in high crime

areas of the city and thus be exposed to greater criminal risks and opportunities. Finally, because of the greater density of daycare centers, parks, schools and other places where children are likely to congregate in urban areas, current residency restriction laws effectively prohibit sex offenders from living close to treatment providers in urban areas.

An Integrated Solution

Taking all of these concerns into account, a more acceptable policy is to develop a system of regional reintegration centers for sex offenders. These centers would provide a location where sex offenders could gradually become used to the stresses typically faced by sex offenders in the community, help them establish employment skills and histories, and develop social networks while providing treatment and close monitoring. Using spatial analysis, centers could be placed strategically throughout the State so that offenders could be reasonably close to their home community. Offenders would spend a reasonable amount of time at the center, such as one year, giving them sufficient time to complete an intensive treatment program. Offenders that successfully completed this phase could then choose to move to their home community, or live in the community where the reintegration center is located if they have found employment and developed social networks. Offenders could then enter into less intensive monitoring and treatment programs. The Department itself might operate such facilities, or contract with private providers. Reintegration centers that provide on-site treatment services have shown great promise in reducing violations of conditions of parole and probation and criminal

recidivism in other States (English et al. 1996). A program with many of these characteristics operated in Louisville by Dismas House Charities was rather successful before being forced to close after the enactment of residency restriction laws in Kentucky in 2006. More generally, reintegration programs have been proven successful, with other types of offenders (Mackenzie and Shaw 1990; Mackenzie, Wilson and Kider 2001).

In the current legal climate, establishing such a program facility could involve seeking a waiver or exception to current residency restriction laws. However, the body of recent research indicates that residency restriction laws in their current form place a significant burden on criminal justice professionals and contribute little to public safety (Human Rights Watch 2007; Levenson and Cotter 2005; Zandbergen and Hart 2006; Tewksbury and Mustaine 2006; Tewksbury and Levenson 2007; Sterrett 2007; Levenson and Hern 2007). It is possible that they will be reviewed, revised, and possibly repealed in the foreseeable future, removing this obstacle to implementing reintegration centers for sex offenders.

CHAPTER VI

SUMMARY AND CONCLUSION

Overview of the Current Study

The main purpose of the current study is to explore the implementation of the treatment component of the Containment Model in Kentucky. It focuses on the offender's ability to access mandatory sex offender treatment by comparing the spatial distribution of treatment resources to that of offender residences in the State. The research specifically questioned if a disparity in treatment access, measured by time to travel to treatment, exists for some sex offenders under community supervision in Kentucky and, if so, the nature and magnitude of that disparity. Analysis led to the conclusion that substantial disparity in treatment access exists, and the research shifted to investigate which family and community variables were associated with disparities in treatment access. The study produced some insights about offender characteristics and the Department of Corrections' strategies to prevent recidivism, which I interpreted using Reckless' Containment Theory. In addition, I offer some policy recommendations intended to refine the implementation of the Containment Model.

Methods

Data were collected on three study groups: sex offender treatment providers, sex offenders under community supervision, and communities where sex offenders live. First, telephone interviews were conducted with State DOC (N=6) and private providers (N=47). Second, characteristics of sex offenders under community

supervision were retrieved from the Kentucky State Police Sex Offender Registry (N=1074). Sex offenders under community supervision in this study were predominantly male (95.7 percent), white (85.0 percent), with an average age of 41.05 years. Finally, data were extracted from U.S. Census estimates for 2007 to determine community characteristics of sex offenders' residences. Both spatial (OD matrices) and non-spatial (OLS regressions) analytical strategies were used to analyze the data.

Research Findings

Results of the spatial analysis revealed an inequity in treatment access for sex offenders to their nearest and three nearest treatment providers. The average travel time to the nearest provider, for the entire sample, was 25 minutes. However, roughly 10 percent of the offenders travel between one and two hours to treatment. Similarly, the average travel time to the nearest three providers was one-half hour for the entire sample. Variation in travel time remained in that 10 percent of offenders traveled between one and two hours to treatment.

Using OLS regression, I found that disparities in treatment access for offenders are statistically significantly associated with five characteristics of their residential locale. These are: proportion of families living in poverty, proportion of female householders with children, population density, value of owner occupied housing, and community size (metropolitan, micropolitan, or rural), when controlling for all factors (Model 2 of Tables 4.5 and 4.6).

Limitations of the Study, and Directions of Future Research

There are a number of limitations to the current study. First, it does not relate treatment access to important offender outcomes, such as treatment completion rates or recidivism. Research is now underway to determine the impact of travel time to treatment on successful completion and criminal recidivism relative to other influences.

Second, the analysis is limited to a single state and may or may not be generalizable to other states. I recognize that states vary in a variety of ways including the spatial distribution of sex offenders, treatment providers, and general population; treatment resources relative to the number and type of sex offenders in treatment; and economic and social conditions that might influence the availability of transportation.

Third, this study defines treatment access in terms of time of travel to treatment locations. Likelihood of accessing treatment is in fact a complex, multidimensional concept influenced by both personal and organizational factors, such as personal estimates of costs and benefits of participating in treatment, structural limitations, and treatment capacity. I am exploring ways in which the latter factor can be added to the current statewide analysis, and other influences in a case-level analysis of sex offenders and treatment.

Finally, this study focuses on a single, relatively understudied, aspect of the Containment Model. While more research has focused on monitoring and restraint of sex offenders, both treatment and these factors should be considered simultaneously

in a larger research design, especially when attempting to assess the implementation and effectiveness of containment strategies.

Conclusion

In closing, the present study contributes to our understanding of sexual offending and its social control. I am unaware of any literature that examines the accessibility of treatment for sex offenders, considering time of travel.

It is imperative that sex offenders under community supervision have equal opportunity to treatment. The legitimacy of public efforts to control sex offending as a social problem of great concern to citizens and decision-makers rests partially on perceptions of fair treatment. Fairness must be achieved by reducing the barriers to treatment experienced by offenders living in rural, impoverished areas. Addressing their situation should increase their likelihood of participating in and successfully completing mandatory sex offender treatment, avoiding revocation, and protecting citizens from further sexual victimization.

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