Factors That Are Predictive of Involvement of Detained Youth in Adverse Incidents

by

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(Under the Direction of Thomas P Holland)

Abstract

This study seeks to identify factors that are predictive of youth involvement in adverse incidents while placed in detention. The subjects included 13,557 youth involved in 21,179 detention placements in Georgia between July 1, 2001 and June 30, 2002. A Generalized Linear Mixed Model with fixed and random effects was used to identify variables that are predictive of youth involvement in three types of adverse incident including whether a youth was involved in any incident, in a use of force incident or a self harm incident. Independent variables included demographic, facility and public safety risk factors.

The study's use of placement level data produced a rich picture of facility and demographic factors that would not likely have been identified with facility level data. The study found that placement length of stay was the strongest predictor of youth involvement in adverse incidents. Length of stay was significant in all three regressions and had the largest *F* statistic in two models. The difference between average and maximum population during placement (UTILDIFF) proved to be more predictive than either average or maximum population. That the

likelihood of adverse incidents increases as UTILDIFF increases is important because it suggests how overcrowding is related to poor conditions of confinement. Younger youth, youth with more prior detentions and males were at higher risk of involvement in all three types of adverse incidents. Minority youth were more likely to be involved in use of force incidents than white youth. White males were more likely to be involved in self-harm incidents than minority males, both of who were far more likely to be involved in self-harm incidents than females. The study produced inconclusive evidence that youth in the moderate category of the Detention Assessment Instrument (DAI) were at higher risk than youth scoring low or high. DAI scores suggest that no overcrowding would have occurred during the study period if DAI placement recommendations had been implemented. The study considers that policy and constitutional implications of the overcrowding that results from the secure detention of youth who might be better served in less restrictive settings.

INDEX WORDS: Conditions of confinement, Juvenile detention, Adverse incidents, Risk to re-offend, Constitutional rights of institutionalized persons.

# FACTORS THAT ARE PREDICTIVE OF INVOLVEMENT OF DETAINED YOUTH IN ADVERSE INCIDENTS

by

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# DEDICATION

To my wife, Laura Leiden, for all of her love and support throughout the process of conducting this research.

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# Chapter I

## Introduction

The relationship between the conditions of confinement in detention centers and the constitutional rights of confined youth has been a matter of concern both nationally and specifically to the State of Georgia over most of the past decade. While only 15 percent of youth admitted to detention in 1984 were housed in overcrowded conditions, 56 percent of all youth admitted to detention in 1995 were housed in overcrowded conditions (Wordes and Jones, 1998). In a 1998 report of finding regarding the investigation of Georgia's Juvenile Justice facilities, the U. S. Department of Justice found that detention facilities were "grossly overcrowded" (Lann Lee, 1998). The report further stated that: "the population of most of the RYDCs in the system ranged from 150 percent to almost 300 percent of design capacity, with more than half the facilities operating at or above double their capacity" (Lann Lee, 1998).

The literature on overcrowding in detention centers is replete with anecdotal evidence of the negative impact of overcrowding upon conditions of confinement (Burell, n.d., 1999; Lann Lee, 1998; Parent et al. 1994). In a particularly cogent description of the impact overcrowding has on conditions of confinement in detention centers, Burrell wrote:

> In physical appearance and demeanor, these were kids that any high school basketball coach would love to meet. Detention in this setting, however, suggested a different assessment of their value as human beings. Surely, only worthless people would be crammed into this stinking, human sardine can. Their downcast eyes bespoke embarrassment at being viewed in these circumstances, and unmistakable despair.
>
> Staff in this detention center were worried. There had been more fights as crowding increased, and they felt vulnerable to explosive behavioral incidents. There was no way to do meaningful classification, or even to separate out kids with serious medical problems such as gunshot wounds (Burrell, 1999, p. 44).

> …In this atmosphere, trivial incidents such as not getting out of the shower fast enough, often escalated in behavioral crises. Tensions ran high, and there had been "riots" in which youth barricaded their doors and flooded "wet rooms" (rooms with toilets). Staff acknowledged that many such incidents could have been anticipated and prevented if they has [sic] more opportunity to interact with youth, but crowding prevented them from spending the kind of time they needed to be proactive. Instead, they resorted quickly to after-the-fact disciplinary measures, almost invariably involving more locked room time and sometimes resulting in shackling youth to beds.
>
> …While some of the youth became more aggressive in this crowded atmosphere, others became more depressed. A significant number of kids we spoke with had made suicidal gestures by "carving" on themselves, or tying sheets around their neck. Fear was expressed by staff and roommates of suicidal youth that something really bad could happen (Burrell, 1999, p. 45-46).

The legal context for litigation regarding overcrowding and conditions of confinement emerge from two different, though connected, sources. One body of law defines the circumstances in which youth may be lawfully detained. The other body of law defines the rights of confined youth. Both bodies of law agree that detention of youth prior to adjudication is constitutional only if detention is not punishment.

It is ironic that these two bodies of law can be seen as working at cross-purposes. The body of law defining which youth may be lawfully detained prior to adjudication has had the effect of opening detention to <u>any</u> youth accused of <u>any</u> offense, thus creating a flood of young, first time non-felony offenders into detention centers (Lubow, n.d.; Wordes & Jones, 1998). Legal actions brought under the body of law defining the rights of confined youth sited States for maintaining detention centers that violate confined youth's constitutional rights to "reasonable safety, adequate medical and mental health care" (*United States Department of Justice Civil Rights Division, Special Litigation Section. Juvenile Correctional Facilities* (2000). The Special Litigation Section of the U. S. Department of Justice Civil Rights Division cites overcrowding as a cause of preventable youth on youth violence and inadequate mental health care (*United States Department of Justice Civil Rights Division, Special Litigation Section. Juvenile Correctional*

*Facilities* (2000). This overcrowding is brought about, in large measure, by detaining large numbers of young non-violent offenders (Lubow, n.d.).

Given this circumstance, it is important to establish whether overcrowding is empirically related to adverse incidents such as the use of force and self-harm that indicate deterioration in conditions of confinement. If youth with low levels of previous legal involvement who appear to be at low risk of re-offending before adjudication are more likely to victims of adverse incidents than youth with long histories of violent crime; then might it well be the case that detaining these young low-level offenders is, in and of itself, punishment?

The origins of the current epidemic of overcrowding in juvenile detention centers can be traced back to the *Schall v. Martin* decision from the Supreme Court in 1984. In *Schall v. Martin*, the Supreme Court sanctioned the detention of juveniles prior to adjudication for reasons other than to ensure appearance at the adjudication hearing. The majority justified preventive detention, in part, with the assertion that preventing juveniles from committing further offenses before the hearing date served a legitimate state interest. The state interest was presented as having two parts: first that the state had an interest in protecting the community from crime and secondly that preventive detention protected juveniles from "the downward spiral of criminal activity into which peer pressure may lead the child" (*Schall v. Martin*, 1984 as quoted in Weiss, 1984). The majority found that preventive detention of juveniles was not punishment because the detention was time limited and served a regulatory, not punitive, purpose (Weiss, 1984).

The importance of whether preventive detention constituted punishment was one of the few areas the majority and dissenting opinions agreed upon. Both sides agreed that if preventive detention constituted punishment, then preventive detention would be an unconstitutional violation of due process (Weiss, 1984). In his dissenting opinion, Judge Marshall questioned

whether preventive detention was not punishment when he contended the majority had failed to take into account the impact of incarceration upon the child. Judge Marshall cited, in part, the District Court opinion "which found that juveniles in secure detention were subjected to strip searches and some of them were detained with juveniles who were institutionalized for long-term care" (Weiss, 1984 p. 862). From the outset, *Schall v. Martin* was characterized by a tension between the state interest in public safety and constitutionally guaranteed rights of youth that may be violated by conditions of confinement.

The legal rights of confined youth are specified in the Civil Rights of Institutionalized Persons Act (CRIPA) of 1980. CRIPA does not create any new rights; rather it grants the Attorney General of the United States the authority to bring litigation based upon previously established constitutional and statutory rights (Puritz & Scali, 1998). These rights include: "rights guaranteed by the Individuals with Disabilities Education Act, 20 U.S.C. § 400 et seq., the Americans with Disabilities Act, 42 U.S.C. § 12131 et seq., and youths' constitutional rights to reasonable safety, adequate medical and mental health care, rehabilitative treatment and education" (*United States Department of Justice Civil Rights Division, Special Litigation Section. Juvenile Correctional Facilities* (2000). CRIPA permits the U. S. Department of Justice (DOJ) to investigate possible violations that appear systematic in nature. CRIPA does not authorize DOJ into intervene in individual cases (Puritz & Scali, 1998). The focus of this research is on reasonable safety and adequate mental health care.

In 1994 Abt Associates published the landmark study *Conditions of Confinement: Juvenile Detention and Corrections Facilities*. The study consisted of data from the 1991 *Children in Custody* census, a mail survey that included all public and private juvenile detention centers and site visits. The study found that both juvenile injury rates and suicidal behavior rates

were higher in overcrowded facilities. Because data used in the study was aggregated at the facility, not the individual level, the *Conditions of Confinement* study was not able to examine the relationships between variables such as demographic data and safety or between various indicators such as whether youth who were frequently injured were more likely to engage in suicidal behavior (Parent, et al. 1994).

These same issues came into sharp focus in a March 1998 report of "Findings of Investigation of State Juvenile Justice Facilities" to then Governor Zell Miller. The findings reported that the United States Department of Justice found "a pattern of egregious conditions violating the federal rights of youths in the Georgia juvenile facilities, … Because of these conditions, many youths have suffered grievous harm, such as being injured or hospitalized due to fights with other youths or physical abuse by staff; mentally ill youths have degenerated in the State's care …" (Lann Lee, 1997). The letter of Findings also stated that detention populations had increased by approximately one third since the passage of SB440. The increase in detention populations led to detention centers with daily census of 150 to 300 percent of facility design capacity (Lann Lee, 1997). The Findings further stated "The State has a constitutional obligation to assure the reasonable health and safety of the youths in its custody in the RYDCs [detention centers]. … Overcrowding and understaffing of the RYDCs we visited has prevented the State from complying with this constitutional mandate" (Lann Lee, 1997).

On March 18, 1998 the State of Georgia and the United States Department of Justice entered into a Memorandum of Agreement (MOA) that requires improvements in numerous areas including protection of incarcerated youth from harm (MOA & 1998 CRIPPA report). Millions of State and Federal dollars have been spent to address the posited impact of overcrowding on the safety of youth in secure confinement. Despite this expenditure, no

systematic study has been conducted using individual level data to identify factors that are predictive of detained youth becoming involved in adverse incidents. If risk profiles could be developed to identify which types of youth are at greatest risk of involvement in adverse incidents, these findings could be utilized to enhance supervisory and programming practices in detention centers to ameliorate these risks.

Every juvenile detention system in the United States faces the potential problems posed in the use of preventive detention. While the Supreme Court has ruled that preventive detention of juveniles is legal, federal investigations carried out under the Civil Rights of Institutionalized Persons Act have shown that conditions of youth can be such that they violate the constitutional rights of those youth (Lann Lee, 1997). Standards that separate acceptable from illegal conditions of confinement are not clear.

As part of the effort to bring the State into compliance with the MOA, the Georgia Department of Juvenile Justice (DJJ) implemented a centralized statewide database for the collection of adverse incidents that occur to youth under DJJ supervision. Special Incident Reports (SIRs) are the Department of Juvenile Justice's term for the reporting of adverse incidents such as use of force and self-harming behaviors that occur within secure, state administered facilities. In addition to centralized data on SIRs, the centralized state database also includes extensive demographic, placement and legal history data on youth served by the DJJ. The combination of data on SIRs, demographic, placement and legal history of detained youth presents an opportunity to identify factors that predict conditions that are less safe for specific categories of detained youth and thus quantify the personal safety dimension of conditions of confinement.

The purpose of this research is to examine the relationship between the occurrence of different categories of SIRs in detention centers and factors that may be predictive of the occurrence of these incidents, including overcrowding. This research uses a Generalized Linear Mixed Model to test whether factors related to a youth's legal history, demographic characteristics or characteristics related to a youth's placement in detention significantly impact the likelihood of a youth's being involved in an SIR. The research examines data specific to a youth's detention placement as random effects and other variables as fixed factors to model the data.

This study will consider the implications the study findings may have upon practice at the Georgia Department of Juvenile Justice. The study will then seek to identify areas where departmental practice might be altered to address the risks identified in the study. The study will also consider the findings within the broader context of delivery system of care for youth who are abused, neglected, suffering from mental illness, failing at school or delinquent.

These findings may speak to the broader question of the constitutionality of preventive detention. If low-level offenders are more likely to be harmed during preventive detention than offenders with substantial legal histories; then might Judge Marshall have been correct? In the absence of proof that these low level offenders pose a substantial risk to re-offend before adjudication, the harm these low level offenders are more likely to suffer can be seen as punishment. Might statutes, such as Georgia's, that permit preventive detention of youth without requiring guidelines that identify youth more likely to re-offend violate a youth's constitutional right to due process by subjecting these youth to punishment before adjudication?

# Chapter II

## A Review of the Literature

The purpose of this chapter is to review the literature on legal context of preventive detention of juveniles, the civil rights of juveniles and overcrowding within juvenile detention centers. This chapter is comprised of five sections: 1) detention and the law, 2) conditions of confinement in juvenile detention centers, 3) the civil rights of institutionalized persons, 4) Georgia data that reflects data used in the *Conditions of Confinement* study and 5) statement of the problem.

### *Detention and the Law*

In *Schall v. Martin* (1984), the Supreme Court sanctioned the detention of juveniles prior to adjudication for reasons other than to ensure appearance at the adjudication hearing. In it's ruling, the majority reasoned that two fundamental questions were at issue: 1) does preventive detention serve a legitimate state interest, and 2) does the statute under review provide sufficient procedural safeguards to the accused juvenile? On the first matter the court found that although preventive detention did interfere with the juvenile's interest in liberty, that interest was outweighed by the state's interest in protecting safety of the community (Weiss, 1984). The majority held that the state's interest was two fold: 1) to prevent the juvenile from committing further crime, and 2) preventive detention would protect the juvenile from "the downward spiral of criminal activity into which peer pressure may lead the child" (*Schall v. Martin*, 1984 as quoted in Weiss, 1984, p. 860). The court found that the procedural protections of the Family Court Act (the New York statute under review) satisfied the fourteenth amendment's due process

requirements. The majority also found that preventive detention was not punishment because the detention was time limited and served a regulatory, not punitive, purpose (Weiss, 1984).

The dissenting opinion in *Schall v Martin* attacked all portions of the majority's opinion. The pivotal role of the concept of punishment is of particular interest in this study. The dissenting opinion, authored by Justice Marshall, attacked the majority opinion on two broad areas: 1) that preventive detention must not constitute punishment, and 2) that the state interests advanced by the use of preventive detention must outweigh the burden the law places on juvenile's constitutional rights (or preventive detention becomes punishment). The dissenting opinion rejected the majority's assertion that preventive detention was merely a regulatory transfer of custody from parents to the state. Justice Marshall asserted that this position failed to adequately account for the impact incarceration has on youth. Justice Marshall cited the loss of freedom and stigmatization that is generally associated with detention and specifically cited the district court opinion that detained juveniles were subject to strip searches and placement with adjudicated youth under the state's long term care (Weiss, 1984). In citing strip searches and the composition of detention populations, Justice Marshall explicitly used conditions of confinement as part of the measure of the burden preventive detention creates and which must be outweighed by the compelling state interest served by preventive detention.

While never ceding that a compelling state interest would justify preventive detention, Justice Marshall went on to attack the conceptualization of a compelling state interest put forward by the majority. The majority asserted that preventive detention would protect the safety of the community by preventing youth from re-offending during the period between apprehension and adjudication. Justice Marshall asserted, in effect, that in order to protect the community from any particular juvenile re-offending, the courts would have to be able to

distinguish juveniles at a high enough risk to re-offend to warrant preventive detention from those who would not re-offend even if they were not detained. Otherwise, cases where the avowed state interest is advanced (cases where the detained juvenile *would* have re-offended) would be indistinguishable from cases where there was no state interest (cases where the detained juvenile would *not* have re-offended). If juvenile court judges were not able to identify juveniles that posed a substantial risk to public safety, then the majority's claim of compelling interest becomes nothing less than a license to detain any and every youth prior to adjudication.

Justice Marshall went on to cite the district court's finding that even criminologists are poor judges of which juveniles would engage in future criminal behavior and expert testimony at the district court hearing that judges were only able to predict future criminal behavior four percent better than chance. Even if judges are charged with predicting future criminal behavior by the statute under review, the statute offers no guidelines such as considering a juvenile's previous record or the severity of current offense as a means for distinguishing juveniles who may re-offend from those who are unlikely to re-offend. This broad, ill-defined use of preventive detention would maximize the burden to juveniles created by preventive detention while creating minimal protection to the community. Justice Marshall argued that because the burden to juveniles was great and the benefit to the community was small, the compelling interest claimed did not comply with the fairness requirements of due process and thus, constituted punishment (Weis, 1984).

A study by Frazier and Lee (1992) presented results that are consistent with Justice Marshall's implied concern that the authorization of such ill defined preventive detention would produce widespread use of preventive detention that had little or nothing to do with the risk detained youth pose to the community. Frazier and Lee reviewed data from nineteen counties in

Florida and tested for possible statistical relationships between county detention admission rates and three categories of predictor variables: juvenile crime severity, severity of general crime, and social/economic indicators. If detention admission is a function of the severity of detaining offense (a loose proxy for likelihood to re-offend), then declines in detention admissions should have a positive correlation with the juvenile crime severity variables. Comparison of variation in detention admissions and the severity of juvenile crime produced a weak *negative* correlations of *r=-.10* for the juvenile severity of offense variable and *r=-.17* for the proportion of juvenile crime that were felonies variable. When all variables were entered into a regression to form an explanatory model of the variations in detention rates, only the general violent crime index and the per capita income variables entered into the model. The combination of these two variables accounted for 23% of the variation in detention rates (Frazier & Lee, 1992).

To the extent that these finding are typical of detention admissions nationwide, they suggest that admissions to detention had nothing to do with variables measuring severity of juvenile offense but rather were related to the level of violent crime in the *general* population and relative affluence of the community a juvenile resides in. This finding are consistent with Justice Marshall's concern that preventive detention, as formulated by the majority in *Schall v. Martin,* would result in a tremendous burden upon the liberty of juveniles without any evidence that youth are being held on the basis of the risk they pose to the community.

State detention statutes in Georgia conform to precedents set forth in *Schall v Martin.* Preventive detention is generally permitted to ensure that a juvenile appears for all court hearings or to prevent a juvenile from re-offending before adjudication (Wordes and Jones, 1998). Georgia law conforms to this general standard in that detention is permitted if 1) "The child's detention or care is required to protect the person or property of others *or of the child*" [Italics

added], and 2) “The child may abscond or be removed from the jurisdiction of the court” (Official Code of Georgia Annotated, 15-11-46). The last four words of the first quoted section (in italics) establish a third condition under which preventive detention is permitted. In Georgia youth can be held in preventive detention *for the protection of the juvenile*. This stipulation opens the possibility of turning detention centers in Georgia into emergency shelters and acute behavioral/medical healthcare treatment facilities for youth who represent no risk to the community but are in need of services the community has otherwise failed to provide. In their letter of findings to Governor Miller, the Department of Justice referred to the placement of youth in detention not because of the public risk youth represented but because more appropriate non-secure alternatives were not available. “One RYDC director stated that while not all youths accused of violating probation or committing less serious offenses are appropriate for less secure placements, he estimated that thirty percent of the youths in his facility could be adequately supervised in a less jail-like setting” (Lann Lee, 1989, not paginated).

It should be noted that Georgia law governing detention has several provisions that regulate the use of preventive detention so as to safeguard the rights of juveniles. Section 15-11-46.1 of the Official Code of Georgia Annotated states that juveniles can only be detained prior to adjudication only if there is probable cause to believe a juvenile has committed the act for which he or she has been accused. Subsequent rulings in Georgia has determined that a hearing must be held within 48 hours of admission to detention, not excluding weekends or holidays, to determine probable cause (Executive Committee, Council of Juvenile Court Judges of Georgia, Memorandum to member judges, February 16, 1998). Section 15-11-46.1 of OCGA goes on to state, in part, that preventive detention must not be used to punish, treat, or rehabilitate youth or to satisfy the demands of a victim, police or the community. The section then goes on to require,

in part, that preventive detention must protect the physical and psychological health of detained youth, that juveniles receive equal treatment regardless of race, class, sex or ethnicity and that detention must avoid stigmatizing youth.

### *Changing Conditions of Confinement in Detention Centers*

By authorizing the use of preventive detention for the protection of communities from crime, the Supreme Court expanded the circumstances under which juveniles could be detained. An explosion in the average daily population of detention centers followed. From 1985 to 1995, the average daily population of secure detention centers increased by 72% (Lubow, n.d.). The number of available detention beds also increased during that period, but not as quickly as the rise in average daily population. In 1984, bed space capacity exceeded average daily population by 4,000 beds. By 1994, average daily population exceeded bed space by 1,000 youth. Overcrowding is the inevitable consequence of housing more children than the detention system has beds for. While only 15 percent of all youth admitted to detention in 1984 were housed in overcrowded conditions, 56 percent of all youth admitted to detention in 1995 were housed in overcrowded conditions (Wordes and Jones, 1998).

The profile of youth in detention centers also changed during these years. The *Conditions of Confinement* study reported that the proportion of minority youth in confinement rose from 53 percent to 63 percent. The study also reported that the "percentage confined for crimes against persons rose from 22 percent to 28 percent, and those for property offenses declined from 40 percent to 34 percent. The percentage confined for drug-related offenses rose between 1987 and 1989, and then declined somewhat in 1991, resulting in an overall increase of 4 percentage points (6 percent to 10 percent) (Parent et al., 1994, p. Executive Summary 1).

Findings from numerous site visits have documented the poor conditions of confinement in overcrowded detention centers. In a 1992 decision the Superior Court of California, County of San Diego, the court found that a detention center whose census was as much as 93% above capacity created an environment where youth "were constantly faced with unpredictable and potentially hostile new environments" (cited in Burrrell, 1999). These unpredictable environments caused youth to be victims of sexual attacks, made it difficult to separate rival gang members leading to fights in the dayroom, reliance upon lockdowns, lack of recreation, and the inability of staff to respond to requests for bathroom visits by youth, causing youth to urinate and defecate out of cell windows. "The trial judge noted that the practice of urinating out the window was so common that steel windows were corroded and had to be replaced" (Burrell, 1999, p. 47). Psychiatric testimony about the impact of overcrowding asserted a rise in violent incidents, sexual acting and suicide attempts. Mental health resources that were not adequately staffed to meet the needs of a population that was sometime double capacity meant that youth with identified suicide risks were placed in suicide gowns and warehoused in cold, bare rooms instead of receiving the counseling that would address the identified needs (Burrell, 1999). In two other site visits to overcrowded facilities, Burrell found youth housed in rooms with walls "decorated" with deposits of food and human excrement. Ms. Burrell found youth who spent as much as 20 hours in rooms designed for single occupancy that sometimes housed five youth. Ms. Burrell identified youth who were "bulldogged" by older, bigger youth into giving up their food (Burrell, 1999).

### *Civil Rights of Institutionalized Persons*

Although anecdotal studies like Burrell's make a compelling case for the relationship between overcrowding and poor conditions of confinement, they cannot establish what

acceptable conditions of confinement would be and what delineate the boundary between overcrowding and acceptable conditions. Federal law and the investigations that have arisen from the application of federal law have an important impact upon shaping national understanding of acceptable conditions of confinement for youth in detention centers. The legal rights of detained youth are enumerated in the Civil Rights of Institutionalized Persons Act (CRIPA) of 1980. CRIPA does not create any new rights, rather it grants the Attorney General the authority to bring litigation based upon previously established constitutional and statutory rights (Puritz & Scali, 1998). These rights include educational rights defined by the Individuals with Disabilities Education Act, rights granted under the Americans with Disabilities Act (primarily concerning youth with psychiatric and developmental disabilities) and constitutional rights to "reasonable safety, adequate medical and mental health care, rehabilitative treatment and education" (United States Department of Justice Civil Rights Division, Special Litigation Section, Juvenile Correctional Facilities, 2000).

The rights enumerated under CRIPA have a powerful impact on shaping the national debate on conditions of confinement. The letter of findings to Governor Miller provides a roadmap to conditions that can be seen as a violation of rights. The letter lists ten areas where the Department of Justice found Regional Youth Detention Centers to be in violation of rights enumerated under CRIPA. These areas are:

- Punitive conditions
- Protection from harm
- Inadequate mental health care
- Abusive disciplinary practices
- Staff abuse
- Inadequate education
- Medical care
- Delayed probable cause hearings
- Discipline without due process
- Grievance process

Overcrowding can overtax staff ability to perform competently in all areas listed above. This study focuses on punitive conditions, protection from harm, inadequate mental health care and staff abuse primarily because incidents directly tied to these conditions can be tracked in the special incident database.

Concerns raised in the punitive conditions section of the detention center findings cut across all other areas to present conditions which, as a whole, represent the "imposition of restrictive conditions or practices that are excessive in relation to the legitimate governmental objectives of safety, order and security" (Lann Lee, 1998, no pagination). Among the conditions listed as punitive included:

- The practice of detaining youth charged with non-violent or status offenses or probation violations.
- The practice of detaining young and small youth for minor violations. This was of particular concern to DOJ experts who doubted that such youth would be housed in such jail-like facilities in other jurisdictions. The relationship between current offense and governmental objectives of safety, order and security are discussed further in the section "Estimating Pre-adjudication Risk to the Community."
- Jail-like qualities of detention centers including clothing youth in correctional jumpsuits, being surrounded by razor wire, and the use of pepper spray to maintain order.
- "Overcrowded and unsafe conditions in the Regional Youth Detention Centers" (Lann Lee, 1998, unpaginated) was cited in the overall summary of the investigation as part of "a pattern of egregious conditions violating the federal rights of youths in the Georgia juvenile facilities" (Lann Lee, 1998, unpaginated).
- Overcrowding was directly implicated in inadequate living conditions where two to five youth were required to share an eight by ten foot cell designed for one youth. The findings cite detention centers with populations 150 to 300 percent of design capacity.
- The Memorandum of Agreement between the U.S. Department of Justice and the state of Georgia that resulted from the findings of the 1997 investigation specifically address reduction of overcrowding as condition for release from the MOA. Specifically citation 78 states "the State shall submit a plan under this Agreement to reduce crowding in its facilities" (U.S. Dept. of Justice, 1998).
- Inadequate staffing patterns that resulted in prolonged periods of lock down. These lock down periods were seen as creating especially punitive where youth were unsupervised for long periods that often resulted in fights and sexual assaults.

- The use of detention for youth with minor infractions who could not be housed in less restrictive placements because of the lack of more appropriate alternatives. The letter of findings asserted that not only that it was punitive to place a youth who belonged in a less restrictive environment in detention but that many of these youth "suffer disproportionately from the harms associated with the facilities' punitive conditions and other deficiencies (like lack of adequate mental health care)" (Lann Lee, 1998, no pagination). One detention center director reported that "thirty percent of the youths housed in his facility could be adequately supervised in a less jail-like setting." (Lann Lee, 1998, no pagination).

Protection from harm refers to the State's constitutional obligation to protect detainees from harm by other detainees. Among the conditions the report listed as violations of this obligation include:

- The lack of adequate classification that would "separate younger, more vulnerable youth from older, potentially predatory detainees" (Lann Lee, 1998, no pagination). The finding cites overcrowding as contributing to the inability of DJJ to implement adequate classification. The findings cited an instance of a youth detained for violation of probation who was sexually assaulted by three youth housed in the same cell who were accused of armed robbery and aggravated assault.
- Staffing levels that do not permit staff to make visual checks on rooms as often as would be necessary to prevent fights or minimize harm if fights are encountered.

The mental health treatment section of the findings refers to the State's obligation to provide mental health treatment for detained youth as well as the State's obligation to prevent suicide by detained youth. Among the conditions cited as violations under these obligations include:

- Detention centers lack sufficient resources to meet the needs of detainees. Access to psychiatric services was cited as extremely limited, medical testing to monitor the effects of psychotropic drugs on heart blood and liver were not ordered, little interaction between medical staff and psychiatric consultants was evident and counseling was largely limited to services provided by overworked bachelor-degree level staff only when a youth's distress level was such that hospitalization is required.
- Detention centers failed to make use of what meager resources were available. Monthly retainers for services were contracted for at some detention centers which were not being utilized.
- Detention centers were not meeting their constitutional obligation to identify and effectively respond to behaviors that indicated risk of suicide or other self-injurious behavior.

There is an important apparent contradiction between the broad constitutional obligation to provide mental health treatment outlined in the Findings letter and Georgia law OCGA 15-11-46.1. Section 46.1 of OCGA stipulates that "Interim control or detention shall not be imposed on an accused juvenile child: (1) To punish, treat, or rehabilitate the juvenile child." (Official Code of Georgia Annotated, Chapter 11 of Title 15, Section 46.1). While CRIPPA asserts a constitutional requirement for mental health care for institutionalized persons, Georgia law prohibits the use of detention to provide treatment. This contradiction makes it difficult to define in legal, much less empirical, terms what level of mental health care would be sufficient to satisfy and resolve the requirements of constitutional and State law. Furthermore, JTS, the statewide departmental database does not keep data that could be used to estimate the *adequacy* of mental health care. The database does track instances of completed suicide, attempted suicide and suicidal gestures. These data will permit this study to investigate the relationship between suicidal/self-harming behavior and other variables.

The staff abuse section of the findings refers to the State's obligation to not use excessive force against detained youth. Among the conditions cited as violations of this obligation include:

- The use of pepper spray at the Dekalb RYDC on youth for annoying, non-compliant but not dangerous behavior.
- Persistent use of excessive physical force against youths, in the form of hitting or slamming youths onto the ground and into walls, or otherwise injuring the youths.

### *Variables that Might Predict Poor Conditions of Confinement*

The findings of site visits make a compelling case that poor conditions of confinement are associated with overcrowding. The case these site visits make is anecdotal, however, and not subject to the sorts of statistical testing that could elucidate the *manner* and *degree* to which overcrowding is associated with poor conditions of confinement. Because these visits are usually conducted at overcrowded sites, for example, one might be tempted to conclude that

overcrowding *causes* poor conditions of confinement. But it could also be the case that these detention centers could be unsafe and provide inadequate educational, medical and mental health services even when they operate below their official capacity. Without the systematic study of both crowded and un-crowded facilities, it is impossible to determine the relationship between crowding and conditions of confinement.

In 1994 Abt Associates published *Conditions of Confinement*, a nationwide study of juvenile detention and correctional facilities (Parent et al., 1994). The Abt *Conditions of Confinement* is the first, and to date the only, published systematic study of the relationship of conditions of confinement in detention centers and factors thought to impact conditions (including overcrowding). This study, required by Congress by its 1988 Amendments to the Juvenile Justice and Delinquency Prevention Act, included data from three sources. Sources included a 1991 survey mailed to all 984 public and private juvenile detention centers and juvenile correctional facilities, data from the 1991 Children in Custody census and two day site visits to a representative sample of 100 facilities in the fall of 1991 (Allen-Hagen, 1993; Parent et al., 1994). The purpose of the report was to "assess conditions of confinement for juveniles, to determine the extent to which those conditions conform to recognized national professional standards, and to report findings to Congress. (Parent et al., 1994, executive summary 1).

The most cogent finding of the study was that conformance to nationally accepted standards were not generally related to improvements in conditions of confinement. The report concluded that this was due, in large part, to standards that were written to achieve procedural regularity but failed to specify benchmark results that conformance to standards should achieve. The lack of empirical benchmarking in professional standards reflected a lack of consensus about the goals of confinement (Parent et al., 1994). Examples of the lack of linkage between standards

and results are astonishing. There was no relationship between conformance to classification assessment standards and injury rates. There also was no relationship between supervision staff ratios and rates of injury (Parent et al., 1994)!

The fact sheet that preceded publication of the study and the Executive Summary both emphasize the impact of overcrowding upon conditions of confinement (Allen-Hagen, 1993; Parent et al., 1994). The Executive Summary states that "Juvenile and staff injury rates were higher in crowded facilities" (Parent et al., 1994, p. executive summary-9). The executive summary does not mention a relationship between overcrowding and suicidal behavior. Curiously, the detailed statistical analysis contained in the body of the report presents a different picture. The study conducted a regression analysis to determine if factors gathered for the study could predict outcomes indicative of poor conditions of confinement. Although the Executive Summary fails to mention it, overcrowding was predictive of suicidal behavior. In contrast to the relationship between overcrowding and juvenile and staff injury, the regression analysis only establishes a significant relationship between overcrowding and staff injury in training schools (*not*

Table 1

*Summary of Conditions of Confinement Study Regressions*

| Independent Variable | Suicidal Behavior | Juvenile on Juvenile Injuries | Staff on Juvenile Injuries | Juvenile on Staff Injuries |
|---|---|---|---|---|
| % Male | | | | |
| % Minority | | | | |
| % > 16 | | | | |
| Age Range | | | | |
| Serious Offenses | | | | |
| % Drug Offenses | | | | |
| Pop < 50 Residents | | | | |
| % Single Rooms | | | | |
| Admits/month | | | | |
| ACA Accreditation | | | | |
| 12' Fence | | | | |
| Classification | | | | |
| Security Staff ratio | | | | |
| Staff turnover | | | | |
| Counseling Staff ratio | | | | |
| Living Unit size | | | | |
| Population exceeds design | | | | |
| Minimum Room Size | | | | |
| Search Rate | | | | |
| Short-term Isolation | | | | |
| Long-term isolation | | | | |
| Suicide Prevention Plan | | | | |
| Suicide Screening | | | | |
| Staff Training | | | | |
| Monitoring Suicide Risks | | | | |

Shaded areas indicates $p < .05$

*detention centers*) and does not report any significant relationship between overcrowding and youth on youth injuries or staff on youth injuries (Parent et al., 1994).

The *Conditions of Confinement* study examined other factors that could be tested as being predictive of adverse events such as suicidal behavior and events that caused injury to juveniles and staff. These factors are listed as independent variables in Table 1. The results can be fairly characterized as a smattering of significant associations. Only overcrowding (population exceeds design) and staff turnover are significantly associated with more than one type of adverse event. In addition to staff turnover, the ratio of security staff to youth was also associated with suicidal behavior, but not juvenile on juvenile, staff on juvenile or juvenile on staff injuries; all areas in which administrators expected to see an association. Demographic factors such as percent minority and age were associated with juvenile on juvenile injuries but not with other categories of adverse events (Parent et al., 1994).

The design of the *Conditions of Confinement* study gathered data at the facility, not the individual youth level. This design permits the study to draw conclusions about differences between facilities but tells us nothing about whether or how individual youth characteristics interact with facility level characteristics. In the conclusion of the Executive Summary, the study states:

> …the study was based on data about facilities, not data about individual juveniles in facilities. This made it more difficult, at times, to determine how nonconformance affects juveniles within facilities or to identify links between variables. Without data on individual juveniles, we cannot determine, for example, if juveniles who are more frequently injured by other juveniles are more apt to engage in suicidal behavior. (Parent et al., 1994, p. Executive Summary 15)

The absence of individual level data may also mean that important relationships were not identified by the study because the relationship was only statistically significant within a sub-population of detained youth. The *Conditions of Confinement* study, for example, did not find

that overcrowding was a predictor of youth on youth violence. It may be, however, that while overcrowding is not predictive of youth on youth violence for the *entire* population in a detention center, that the combination of individual characteristics and overcrowding might identify a particular sub-population that is at a statistically significant heightened risk of becoming the victim of youth on youth violence. Are there factors that might differentiate sub-populations who are more likely to be associated with adverse events that the U.S. Department of Justice has identified as indicators of poor conditions of confinement such as use of force, youth on youth assault, youth on staff assault or self-harming behaviors? Such questions can only be addressed by a study that utilizes individual level data.

### *Georgia Detention Data Available at the Individual Level*

The Georgia Department of Juvenile Justice maintains data on detained youth on the individual youth level in it's *Juvenile Tracking System* (JTS) database. Many of the variables used in the *Conditions of Confinement* study are kept in JTS and could be utilized in a study that looks at predictive factors of adverse events using individual level data. Age is identified as a variable in the *Conditions of Confinement* (Parent et al., 1994) and was also cited in the Letter of Findings under the Punitive Conditions part of the detention center findings. This section stated that the lack of an effective classification system prevented detention centers from separating younger, more vulnerable youth from older predatory youth (Lann Lee, 1998). A one-day count on April 20, 2003 of youth housed at the Metro RYDC demonstrates the age range of youth typically held at detention centers in Georgia. The average age youth held at Metro RYDC on this date was 15.0 years. Ages ranged from eleven to eighteen years.

Factors relating to staffing were among the more productive items examined in the *Conditions of Confinement* study. Staff turnover was significantly associated with suicidal

behaviors and juvenile on staff injuries. Security staff ratios were also associated with suicidal behavior. The most sensitive measure of the impact of staff would probably be a measure that associated staffing ratios at any given shift with adverse events. These data, while kept on paper at individual detention centers, is not kept in a central database. Detention centers in Georgia are all staffed using the same staffing ratios, so without individual shift data, staffing ratios would not be a productive variable. Data on staff turnover could not be obtained for this study.

The number of beds per facility is similar to the living unit size used in the *Conditions of Confinement* study. The design capacity of detention centers in Georgia ranged from twenty-six to two hundred youth in June 2002 (Table 2). It may be that the size of detention centers impacts the likelihood of youth being involved in adverse events.

Table 2
*Georgia Detention Centers 7/1/01-6/30/02*

| Capacity | # of Centers |
|---|---|
| 26 Youth | 1 |
| 30 Youth | 13 |
| 40 Youth | 1 |
| 50 Youth | 1 |
| 64 Youth | 1 |
| 70 Youth | 1 |
| 100 Youth | 2 |
| 200 Youth | 1 |

It may be that the number of days a youth is held in a detention center impacts the likelihood of a youth being involved in an adverse event. There was no length of stay variable in the *Conditions of Confinement* study. This may be because data for the study were collected at the facility, not the individual youth level. Still average length of stay per facility could, in theory, been collected. Curiously, the impact of length of stay data was not mentioned as one of the advantages of conducting a study using individual level data. The number of days youth were held in detention on April 20, 2003 ranged from one to three hundred sixty-four days. The average length of stay was 23.7 days. Given this variation, it would seem that length of stay should be a variable in studying factors that are predictive of adverse events.

Race/ethnicity was also examined in the *Conditions of Confinement* study as a factor that could be predictive of youth involvement in adverse events. Percent minority was, in fact,

significantly associated with juvenile on juvenile injuries (Parent et al., 1994). Race/ethnicity is a politically important factor in Georgia as African Americans are disproportionately represented in detention center populations. As shown in Table 3, while only 1.1 percent of White youth were detained in 2001, 3.0 percent of African American youth between the ages of ten and sixteen comprised were detained (D. K. Jackson, data developed for Department of Juvenile Justice, October 1, 2002). This means that African American youth were 2.7 times more likely to be detained than White youth during 2001.

Table 3
*Disproportionate Minority Representation of Detained Youth: Georgia 2001*

| Race/ Ethnicity | At Risk* | | Detention | |
|---|---|---|---|---|
| | # Youth | % of At Risk | # Youth | % of Category Detained |
| White | 482516 | 56% | 5279 | 1.1% |
| Black | 299743 | 35% | 8858 | 3.0% |
| Hispanic** | 42418 | 5% | 510 | 1.2% |
| Other | 32689 | 4% | 162 | 0.5% |
| Total | 857366 | 100% | 14809 | 1.7% |

* At Risk youth are youth between ages 10-16
** Hispanic youth are probably undercounted

The *Conditions of Confinement* study looked at percentage of serious and drug related offenses as variables. These measure may have been used a proxy measures for the percent of youth who represented a high public safety risk and thus youth who needed to be detained. A variable that measured this public safety risk would be important because it is this population that represents the compelling State interest that justifies preventive detention in *Schall v. Martin* (Weiss, 1984). In his dissenting opinion, Judge Marshall criticized the lack of procedural guidelines that could serve as safeguards in the implementation of preventive detention. Specifically he cited the lack of any required consideration of previous legal history or severity of current offense in determining risk to public safety that was the majority's compelling interest in upholding preventive detention (Weiss, 1984). Implied in this part of Justice Marshall's dissent is a concern that detention centers would see an increase in numbers of juveniles that were not a substantial safety risk to the community.

There is substantial evidence both nationally and from Georgia that suggests that a large number of juveniles who are a low risk to public safety are held in preventive detention. A one-day national count of juveniles in detention in 1995 showed that only 29 percent of youth in detention were detained for violent offenses (Lubow, n.d.). A second study showed a one day count of juveniles in detention in 1991 showed 18 percent of that day's census were detained for violent offenses (Parent et al., 1994). In their letter of findings to Governor Miller, the Department of Justice cited DJJ statistics stating that three quarters of detained youth were charged with non-violent offenses and that one third were charged with status or probation offenses (Lann Lee, 1998).

Using severity of current offense as a measure of a juvenile's risk to the public during the period between apprehension and adjudication is problematic. A youth with a previous adjudication for violent offense, for example, could be apprehended for a petty property crime and, if only severity of current offense is judged, be considered a low public safety risk. As illustrated in Figure 1, risk to re-offend before adjudication probably has at least two dimensions: severity of offense history and chronicity of offending behavior. The number of prior adjudications or the number of prior detentions could measure chronicity of offending behavior.

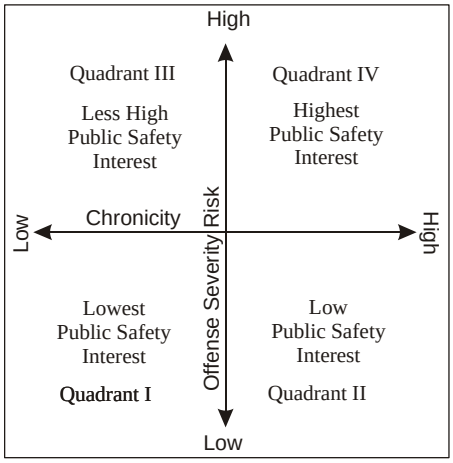



*Figure 1*
Juvenile Pre-Adjudication Public Safety Risk

Consider a juvenile with no previous record who is accused of an offense that is a low risk to the public such as first time misdemeanor curfew violation. Such a youth could be seen as representing a low severity risk and low chronicity risk (Quadrant I). It is questionable whether any public safety interest is served by

detaining such a youth before adjudication. On the other extreme, a juvenile might have an extensive history of adjudications for violent crimes while currently apprehended for murder. Such a youth represents a high chronicity risk and the highest severity risk (Quadrant IV). The public safety interest served by detaining such a youth before adjudication is obvious and compelling. Cases of moderate chronicity/low severity (Quadrant II) or low chronicity/moderate severity (Quadrant IV) are more typical and constitute a public safety risk that is more difficult to characterize.

Interest in creating objective means of measuring this mutli-dimensional risk have grown over the past decade. In 1987 a federal class action lawsuit was brought against the Florida Department of Health and Rehabilitative Services alleging cruel and unusual punishment in the Broward detention center, which had an average daily population that was 44% above design capacity at the time. The consent decree, developed as a result of the suit, stipulated the development of a risk assessment instrument (RAI) to establish objective criteria for assessing the risk youth posed to public safety (Bishop and Griset, n.d.). Other jurisdictions then developed RAIs as part of the Annie E. Casey Juvenile Detention Alternatives Initiative (JDAI). RAIs developed at JDAI sites share common features. RAIs assign each youth points based upon the 1) the seriousness of the current allegation, 2) the number of prior adjudications, 3) current legal status and 4) prior detention related failures (previous incidents of failing to appear in court). The seriousness of current allegation and current legal status quantify the severity of public risk dimension while the number of prior adjudications measures the chronicity dimension. The consistent use of RAIs ensures that risk is assessed on the basis of each individual juvenile's current charges and past legal history instead of staff biases and subjective decisions (Orlando, n.d.).

In March 1998, the U. S. Department of Justice filed a complaint and settlement agreement in response to its 1997 investigation of Georgia. The complaint was then provisionally dismissed subject to Georgia's compliance with the settlement agreement (1998 CRIPA Report). The agreement, entitled Memorandum of Agreement Between the United States and the State of Georgia Concerning Georgia Juvenile Justice Facilities (referred to subsequently as the MOA) stipulated in citation 79 that the Department of Juvenile Justice "shall create a Risk Assessment instrument for pre-adjudication detention decisions …" (United States Department of Justice Civil Rights Division, 1998, pp.35-36).

DJJ contracted with the National Council on Crime and Delinquency to develop a risk assessment instrument for the state. This instrument eventually became known as the Detention Assessment Instrument (DAI). The DAI is similar to other RAIs in that it assigns points for the seriousness of current offense, previous adjudications and instances where the youth has failed to appear in court. The instrument is somewhat more sensitive than the general outline put forward by Orlando in *Controlling the Front Gates* in that the instrument assigns points for additional current charges and pending charges not related to the current admission (Wagner, Weibush and Lunning, 2001). As with most risk assessment instruments, point assignment in the DAI is heavily weighted toward violent felony offenses with few points assigned for misdemeanors and no points assigned for status offenses.

Total scores from the DAI are used for making detention recommendations to intake workers and judges. Youth with scores of twelve or over are recommended for secure detention. Youth scoring between 8 and 11 points are recommended for release with conditions. These conditions are community placements and/or services designed to address the risks identified by

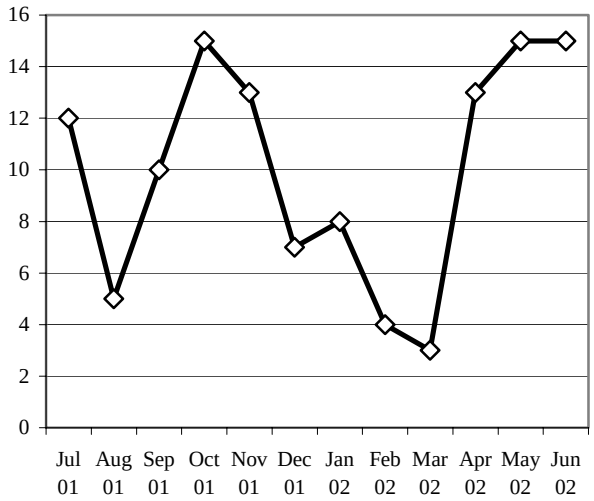
the DAI. Unconditional release is recommended for youth with scores under eight (Wagner et al. 2001).

It is important to emphasize that placement recommendations generated from administration of the DAI do not carry any legal authority. Section 15-11-46 of Official Code of Georgia Annotated assigns detention placement decisions to *judges*, not the Department of Juvenile Justice. Judges are free to override the DAI and, in fact, frequently do. While override rates for RAIs in Multnomah (Portland), Cook and Sacramento Counties varied from 9-14% (F. Orlando, personal communication, February, 2001), DAI override rates in judicial districts in Georgia have continued to be over 50% (Busch, 2002)! Further discussion of DAI data follows in the next chapter.

The primary goal in the implementation of RAIs was to bring down detention overcrowding. The average daily population in detention centers in Georgia has, in fact, fallen since implementation of the MOA was signed. The reductions, however, have been far less striking than in JDAI sites such as Portland where override rates are dramatically lower. The average detention population for the twelve months after the MOA was signed (3/98-2/99) was 1197 while the average daily population for the period of this study (7/01-6/02) was 1032. This represents a fourteen percent decline. By comparison, the average daily population in the Multnomah detention center fell by 66% after the implementation on their risk assessment instrument (Handout from 2nd National Training Conference on Juvenile Detention Reform, Portland, OR., January 2002).

It is also important to note that overcrowding in the Georgia detention systems is seasonal. Detention centers reach two peaks each year: one peak after school lets out in summer and again before Thanksgiving. Detention centers also experience two periods of low utilization

each year: summer and the holiday period between Thanksgiving and Christmas. Figure 2 graphs the number of detention centers with average daily populations above capacity during the time period used for this study. For a discussion of choice of time for this study, please see discussion in Chapter III under dependent variable. The detention utilization pattern during this period generally follows the expected pattern except during the months of February and March. A steady rise in overcrowding from January through June would have been more typical than the decease in overcrowding during February and March that occurred.




These variations in overcrowding create an important research opportunity. The purpose of this study is to examine the relationship between the occurrence of different categories of SIRs in detention centers and factors that may be predictive of the occurrence of these incidents. In order to do this there must be enough variation with independent variables to accurately test possible relationships. The variation in number of youth detained in overcrowded detention centers provides a rich data environment in which to test the possible relationship between overcrowding and the occurrence of SIRs.

While the implementation of the DAI in Georgia has not resulted in the dramatic reduction in detention center populations that some other JDAI sites have seen, the fact that all youth entering detention have DAI scores creates a risk profile of youth in Georgia detention centers. As shown in Figure 3, the percent of pre-adjudicated females admitted to detention with low DAI scores (scores less than eight) was much higher than for males. While 26% of pre-adjudicated males scored in the low range, 45% of females had low scores. By matching DAI admission scores with youth who are involved in SIRs, this study will be able to explore whether youth who score low on the DAI are more likely to become involved in SIRs than youth who score high on the DAI. By matching overcrowding to DAI scores and SIRs this study will be able to explore whether overcrowding also impacts the likelihood of youth with low scores to become involved in SIRs.

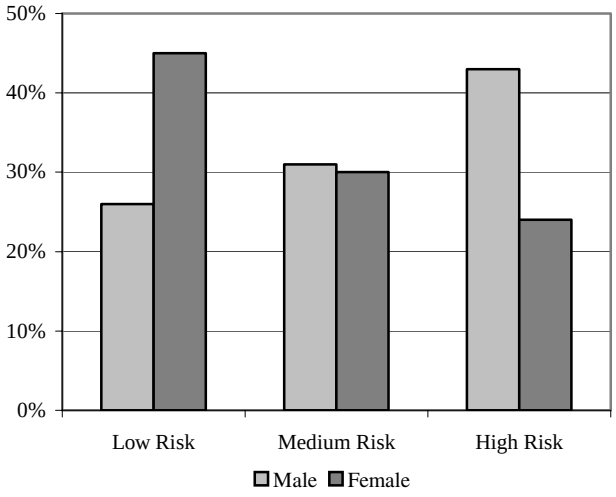



*Figure 3:*
*Comparison of 2001 DAI Scores by Gender*

The *Conditions of Confinement* study did not consider the possible impact of transfers as a predictor of youth involvement in adverse incidents. Transfers are when a youth begins a detention stay in one center but moves to other centers in the course of a detention episode. Youth are often transferred from overcrowded centers to centers operating below capacity as a tool to manage detention populations throughout the system. Transfers may identify a particular risk that may arise from youth becoming the “new kid” and having to establish him or herself within the social order of a center multiple times within a detention episode. If it were to be the

case that youth who are new to a center are more likely to be picked on, then youth who are transferred into a center could be at greater risk. This risk may be compounded by a decrease in social support and a greater sense of isolation for youth who are moved farther from their families and thus are less likely to receive family visits. The *Conditions of Confinement* study may not have considered transfers because the study sought to study conditions in individual centers, not the relationships among centers.

Reports of suicidal behavior and reports of altercations resulting in injuries formed the dependent variables used in the *Conditions of Confinement* study. The Georgia Department of Juvenile Justice maintains a statewide, internet based database of all SIRs reported within the Department. This study can not mirror the categories of adverse incidents examined in the *Conditions of Confinement* study because the DJJ Incident database did not have an injury severity code for incidents during the period under study. The Incident database did have codes for Youth on Youth assault with Injury and Youth on Staff assault with Injury, but the extremely small number of incidents resulting in injury (2% for Youth on Youth assaults and 4% for Youth on Staff assaults) suggests that these codes may not have been reliably implemented. This study will examine three dependent variables thought to be good indicators of conditions of confinement. The study will test whether the independent variables significantly predict youth involvement in *any* SIR during detention placement. This coding will combine the categories of allegations of child abuse, allegations of sexual assault, use of force, youth on youth assault (with and without injury), youth on youth assault (with and without injury), suicide gestures and suicide attempts, and injury requiring outside medical care. The study will also test whether the independent variables significantly predict youth involvement in SIRs involving the use of force. Finally, the study will test whether the independent variables significantly predict youth

involvement in SIRs that involve self-harm by youth (combining the suicide gesture and suicide attempt categories).

### *Statement of the Problem*

The U. S. Supreme Court ruling of *Schall v. Martin* established rules for the pre-adjudication detention of juveniles. *Schall v. Martin* was followed by an increase in juvenile detention that lead to widespread overcrowding. Although there were many areas of disagreement between the majority and dissenting opinions in *Schall v. Martin,* both majority and minority opinions agreed that pre-adjudication detention would be an unconstitutional violation of due process if that detention were to be punitive in nature. Ironically, the overcrowding that followed *Schall v. Martin* has been cited by the U.S. Department of Justice as punitive in CRIPA investigations such as the investigation in Georgia that culminated in the 1998 Memorandum of Understanding between the U. S. Department of Justice and the State of Georgia. Two of the major problems cited in the *Letter of Findings* to Governor Miller were unsafe conditions and inadequate mental health treatment (Lann Lee, 1998).

In 1998 the U. S. Congress mandated that a study of the conditions of confinement of juveniles be undertaken to study this emerging problem. The 1994 *Conditions of Confinement* study sought to identify factors that were predictive of unsafe conditions of youth in confinement as expressed in adverse incidents reporting suicidal behavior, injury to youth and injury by youth. The study utilized data aggregated at the facility level. In the Executive Summary, the report noted that the lack of individual level data made it difficult to links between independent and dependent variables (Parent et al., 1994).

Data maintained by the Georgia Department of Juvenile Justice presents an opportunity to study conditions of confinement in detention centers at the individual level. The JTS database

provides important demographic and detention risk data. The Incident database provides data on adverse incidents that can be linked to specific detention placements. Variations in detention center populations in Georgia between July 2001 and June 2002 provide an opportunity to study the impact of overcrowding.

The present study will match the independent variables tested in the *Conditions of Confinement* study where equivalent or similar variables could be identified. The present study will use an *any* SIR variable, use of force SIR, and self-harm SIR as the dependent variables. These variables are discussed in greater detail in the Methodology section, where the discussion of each variable concludes with a hypothesis stating the expected relationship between the independent variable and adverse incidents that comprise the dependent variables.

The *Conditions of Confinement* study found only a scattering of significant associations in the regression analysis performed. In instances where significant associations were found, the present study will use those findings as the basis for forming hypotheses. The *Conditions of Confinement* study found, for example, that the percent minority youth in confined populations, for example, was positively associated with juvenile on juvenile injuries (although not with staff on juvenile injuries, juvenile on staff injuries, or suicidal behavior). The present study will hypothesize that minority status will be positively associated with *all* types of incidents to see if the limited findings of the *Conditions of Confinement* study generalize in this study using individual level data. In instances where there were no significant associations found in the *Conditions of Confinement* study, this study will craft hypothesis that address legal issues established in review of *Schall v. Martin.*

One of the most important points of dissent in *Schall v. Martin*, for example, concerns whether you who are thought to be a low risk to public safety during the period between

apprehension and adjudication should be subject to pre-adjudicative detention. This issue is characterized by attempts to devise risk assessment instruments such as the DAI in Georgia. This study will hypothesize that youth will low DAI scores will be more likely to be involved in adverse incidents not because other studies suggest this to be the case (there are no such published studies); but because if such an association were established, it would form a powerful argument that the detention of such youth may be unconstitutional both because these youth comprise such a low public safety risk that their confinement serves no compelling state interest *and* that their confinement can be seen as unconstitutional because it is punitive.

# Chapter III

## Methods

The purpose of this research is to identify factors that are predictive of youth involvement in certain types of Special Incident Reports (SIRs) in Georgia juvenile detention centers. Predictive factors will be identified utilizing Generalized Linear Mixed Model with random effects for individual placement data and fixed effects for other youth related variables to model the data. This chapter is comprised of four sections: 1) Variables, 2) Subjects, 3) Procedures, and 4) Limitations of the Research. The variables section will describe the variables that will be used in the study and their known limitations. As the study draws upon a public database, numerous problems of accuracy are described. The subjects section will describe rules used to identify youth records included in the data set. The procedures section will describe the process for compiling the data set and the statistical methods that will be used to test the relationships between SIRs and the independent variables.

### *Variables*

The rules for creating the data set used in the study are contingent upon the decision regarding the unit of measurement. Because the purpose of the study is to identify factors that are predictive of youth involvement in SIRs, the unit of measurement is individual, not group level data. But the organization of data at the individual level still leaves open various options. The data could be organized so that the study compares individuals *entire* detention experience during the study period, compares individual detention episodes or individual detention placements. Each option represents a tradeoff between simplicity and sensitivity of data analysis.

Consider, for example, the fictitious, but not untypical, detention experience presented in Table 4. The youth in Table 4 had two episodes of detention (7/10-8/15 and 5/5-6/25) that included six different placements in four different centers. The youth was involved in two incidents that occurred during different episodes of detention at different centers. An analysis that reduces this individual's entire detention experience during the period under study to one line of data would permit a simple, straight forward analysis using logistic regression. It would also discard obviously important variation within a youth's detention experience by lumping everything together. We could, for example, create a rule that assigned site to the center where the youth had the longest detention stay. Such a rule would assign this youth's detention experience to Gwinnett. The assignment of Gwinnett as site would ignore that the youth stayed at three other centers and that *neither* of the SIRs the youth was involved in occurred at Gwinnett. We could create a length of stay variable for this "one line of data for each youth" model by summing the lengths of stay to arrive at a 87 day total. This would miss, however, that placement lengths of stay varied from ten to twenty days. Such a configuration is not adequate for organizing the data. The data could also be organized along detention episodes, with the same deficiencies.

Table 4

*Detention Epidosdes vs. Placements Example*

| Episode | Placement | Site | Admit Date | Release Date | Length of Stay | Involved in SIR? |
|---|---|---|---|---|---|---|
| 1 | 1 | Athens | 7/10/2001 | 7/20/2001 | 10 | No |
| 1 | 2 | Gainesville | 7/20/2001 | 8/5/2001 | 16 | Yes |
| 1 | 3 | Gwinnett | 8/5/2001 | 8/15/2001 | 10 | No |
| 2 | 4 | Gwinnett | 5/5/2002 | 5/25/2002 | 20 | Yes |
| 2 | 5 | Athens | 5/25/2002 | 6/10/2002 | 16 | No |
| 2 | 6 | Metro | 6/10/2002 | 6/25/2002 | 15 | No |

The organization of the data by detention *placement* does the best job of incorporating all the variations within the data, but also entails a disadvantage. Continuing with the example in Table 4; the use of detention placement as the level of measurement results in six lines of data. A logistic regression of the data would treat this as if there were six independent observations,

which they are not. These multiple observations make the n appear considerably larger than it really is and does not address the problem of autocorrelation that results from the demographic data being the same in all placements. These problems may cause factors to appear less significant than they really are. The use of Generalized Linear Mixed Model with random effects for individual placement data and fixed effects for other youth related variables will permit the analysis to be adjusted to account for these affects.

*JTS Database*

The variables that will be used in this study are extracted from the data fields of the Juvenile Tracking System (JTS) database maintained by the Georgia Department of Juvenile Justice (DJJ). JTS is a statewide, Internet based database that contains data on all youth served by DJJ. Because DJJ is the sole provider of detention services in Georgia, data on all youth with placements in the state's twenty-two detention centers are entered into JTS.

The variables included in this study can be seen as falling into four categories. Special Incident Reports (SIRs) form the dependent variable of the study. Demographic variables are individual characteristics of detained youth. Individual Detention Risk variables are items related to aspects of a youth's detention stay during the time period under study. Public safety risks are aspects of detained youth's involvement with juvenile justice that may be predictive of that youth's association in SIRs. Categories and variables are presented in Table 5.

Table 5
*Variables in This Study*

| Category | Variable |
|---|---|
| Dependent Variable | Special Incident Report Codes |
| Demographic | Age of Juvenile |
| | Ethnicity/Race |
| | Gender |
| Individual Detention Risk | Placement Length of Stay |
| | Episode Length of Stay |
| | Average Utilization during Detention |
| | Maximum Utilization during Detention |
| | Site Size |
| | Transfers |
| Public Safety Risk | Severity of Offense |
| | DAI Score |
| | # Prior Detentions |

*Dependent Variable: Special Incident Reports (SIRs)*

This study posits that as conditions of confinement deteriorate, as evidenced by the frequency a detention center operates a above the facility's stated capacity, the rate of incidents of injury, restraint or mental distress of youth will increase. These episodes of injury, restraint or mental distress are measured by reports of adverse events are reported as Special Incident Reports in the Department's incident tracking database. According to Department of Juvenile Justice policy 8.15, a special incident is "An event involving youth, employees, programs/facilities/offices (owned, operated or contracted) that interrupts normal procedure or precipitates a crisis." (http://www.djj.state.ga.us/policy/PolicyPDF/Safety_Security_Control_PDF/DJJ%208.15%20Special%20Incidents.pdf). DJJ policy 8.15 requires that all special incidents are entered into the Incident and Tracking Database (a sub-section of JTS) as soon as possible, but within seventy-two hours excluding weekends and holidays.

The Incident and Tracking Database was established in 1999. A wide area network between secure facilities was being built and training on the changes in reporting procedures were also conducted during 1999. SIRs were faxed to DJJ central office while detention centers were waiting to be added to the wide area network. It was noted that the number of reported incidents increased throughout 1999 as facilities were added onto the wide area network, as facilities became more used to reporting incidents and as monitoring procedures became more established. The net result of this growth process is that DJJ investigators believe that episodes that require Special Incident Reports to be filed are more likely to be submitted and that SIRs are more likely to be corrected coded than when the initiative began in 1999 (personal conversations

with Dallis Davis, Director of Investigations and Jimmy Taylor, Legal Services Officer for Investigations).

The rules defining what behaviors require the submission of an SIR have also continued develop through the period from 1999 to 2002. At the onset of the period, for example, a use of force report was required whenever a Juvenile Corrections Officer (JCO) placed his/her hand on a juvenile. If a JCO simply placed his/her hand on a youth to stop and redirect a youth, a "guiding hand" use of force report was required. The Department decided to drop this category of SIRs during 2000 after discussions with the U.S. Department of Justice and consultations with federal monitors. The Department also decided to implement an Injury Severity Rating for all SIRs to determine the extent of injury (if any) resulting from the reported incident. The injury rating was implemented on July 1, 2002.

The impacts of these changes are important to consider in determining what data should be included in this study. If an investigator examined SIR report rates during 1999 without taking into account the training and technology changes that occurred throughout the year, an investigator might well conclude that the rate of reporting was increasing when, in fact, the increase was in large part an artifact of *underreporting* earlier in the year. Similarly, if an investigator examined use of force reports during 2000, an investigator might well conclude that the use of force had dramatically declined during the year when, in fact, the decline was largely attributable to DJJ discontinuing a frequently used sub-code.

Data for this study should ideally be drawn from a period where minimal administrative changes were made that impact the conditions under which SIRs are required and a period when the reporting process was not known to have systemic problems that would cause one part of the reporting period to less reliable than another. Because of the seasonality of detention

overcrowding discussed in Chapter II, it was concluded that a full year's data is needed to capture the full variation of crowding within the detention system. Dallis Davis, the Director of Investigations, is the employee at DJJ who is most familiar with the administration of the Incident and Tracking Database as well as the administrative changes that would impact how SIRs are reported. Mr. Davis felt that the addition of injury severity ratings on July 1, 2002 resulted in some confusion and may have particularly impacted they way facilities coded use of force incidents. Mr. Davis indicated that the period between July 1, 2001 and June 31, 2002 represents the most reliable twelve month period where no administrative changes occurred that were thought to impact the coding of incidents (personal conversation with Dallis Davis November 1, 2002). Upon that recommendation, SIRs with occurrence dates between 7/1/01 and 6/30/02 will be used for this study.

A field indicating the type of involvement of youth is included in special incident reports. Youth involvement can be classified as accused, victim, witness, complainant, reporting, supervisor, and contact. It is tempting to look only at incidents coded as victim, but this presents certain problems. Preliminary investigations suggest that the application of these codes is unreliable. A lack of clear instruction appears to be a problem in some instances. The SIR form provides no instruction, for example, as to whether a person committing a suicide gesture is a victim or the accused. Most suicide gestures appear to be coded "accused" while many are coded "victim." The choice appears to be arbitrary. In other instances, the ability to code a single incident with multiple codes impacts the integrity of the type of involvement codes. In one incident, for example, a youth "began swinging the water cooler around attempting to hit other residents." An officer stepped in front of the youth to prevent him from injuring other students on the unit and was hit in the lower forearm, resulting in a cut to the officer. The youth

subsequently accused the officer having “slapped him to the ground”. The incident was coded as CF (youth on staff assault without injury, even though injury to the officer was reported) and AB (allegation of child abuse). Identifying the type of involvement in this incident is problematic because the youth is the “accused” in the youth on staff assault and “victim” in the allegation of child abuse. The type of involvement in this incident was listed as “accused.” In other instances, the option assigned to the type of involvement code appears to be nonsensical. It is difficult to imagine how a youth’s involvement in an incident could be characterized as “supervisor”.

The involvement type code can be used to separate out some reports that are not of interest to the study. Incidents where the youth is identified as supervisor, witness, contact, or reporting will be excluded from the study. Because the reliability of victim, witness and complaint is unclear, incidents with any of these involvement type codes will be allowed in the study. Because of the unreliability of these data, involvement type will not be used as an independent variable.

Three dependent variables will be constructed from SIRs for use in the present study. All independent variables are dichotomous variables that indicate whether a youth was involved in any incident of the category studied or not. A youth involved in multiple incidents in one category during a placement is coded the same as a youth involved in one incident. The first variable, “Any SIR” will indicate whether a youth was involved in any SIR during a detention placement. This variable is constructed by combining the categories of allegations of child abuse, allegations of sexual assault, use of force, youth on youth assault (with and without injury), youth on youth assault (with and without injury), suicide gestures and suicide attempts, and injury requiring outside medical care. The second variable, “Use of Force” indicates whether a youth was involved in an incident that involved a use of force as defined by DJJ policy. A third

variable, “Self-Harming Behaviors” is constructed by combining the suicide gesture and suicide attempt codes. These codes are combined both because of their relative infrequency and because the lack of operational definitions specifying the difference between an attempt and a gesture at the time of the study means that there is no reliable difference between the two and are better considered together.

*Demographic Variables*

*Age of Juvenile*

The birth date of all youth is a required field in JTS. Indeed the birth date forms part of the juvenile id number and, thus, can always be identified. The age of juvenile upon admission to detention is used to calculate age. This research posits that when age is entered into a logistic regression with all other independent variables listed into this section with “Any SIR” as the dependent variable, that age will be a significant factor with a negative beta. That is to say, when controlled for other factors in this section that younger youth will be at significantly higher risk of involvement in special incidents than older youth.

*Ethnicity/Race*

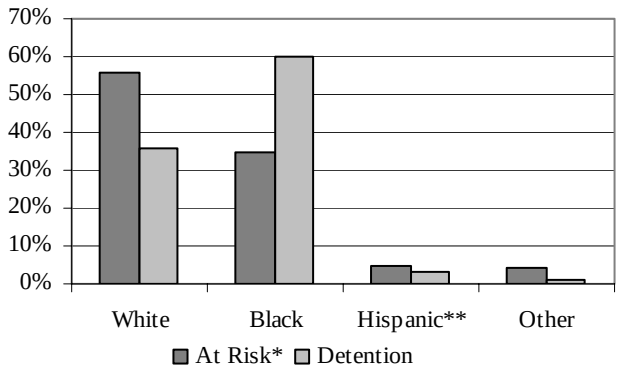



Figure 4
Comparison of Ethnic Representation in At Risk Population & Detained Population 2001

Ethnicity/race may be a risk factor in involvement in SIRs. As shown in Figure 4, African American youth are disproportionately over-represented in detention centers in Georgia. Although African American youth between the ages of ten and sixteen comprised 35% of all youth aged ten to sixteen in Georgia during 2001

(the at risk population); sixty percent of all youth detained during 2001 were African American (D. K. Jackson, data developed for Department of Juvenile Justice, October 1, 2002). Although we might expect African American youth to be involved in a majority of SIRs simply because of their over-representation in the detention population, the question here is whether African American youth, even after accounting for this over-representation, are at greater risk of involvement in SIRs. It may be that simply being African American creates a greater risk of involvement in SIRs than the general detention population. It may also be that when controlled for other factors relating to severity of juvenile justice involvement, ethnicity is not a significant risk factor.

JTS, the Department's database, also has a field for identifying whether a youth is Hispanic and a catch-all "other" category. It is widely among DJJ staff thought that Hispanics are underreported within the database. Although the Hispanic identification is included in the data, the unreliability of these data limits its utility. It should also be noted that Hispanics and "Others" make up only four percent of the detained population in 2001. Between the lack of reliability of the Hispanic data and the small percentage of Hispanics and Others, a better data analysis can be obtained by collapsing the data into White and Minority categories. This characterization of race/ethnicity is also consistent with the *Conditions of Confinement* study. This research posits that when race/ethnicity is entered into a logistic regression with all other independent variables listed into this section with "Any SIR" as the dependent variable, then minorities will be at significantly higher risk of involvement in SIRs than whites.

*Gender*

Gender may also be a risk factor in involvement in SIRs. Admissions to detention are disproportionately male. Females comprised 49% of the at-risk population between ages 10-16 in

2001 but accounted for only 25% of admissions. The differences between the risk profiles of males and females, as measured by the Detention Assessment Instrument (DAI- discussed in following section), are of more importance to this study.

As shown in Figure 5, the risk profiles for males and females in 2001 were almost perfect bookends. While 45% of all DAIs for females and only 26% of all males admitted to detention were in the low category; 43% of all males and only 24% of all females were in the high category. This research posits that youth with a low level of juvenile justice involvement (as measure by the DAI) will be shown to be at greater risk of involvement in SIRs than youth with a high level of involvement. If this proves to be the case, then females would likely be at higher risk of involvement of SIRs than males. This may be confounded by the fact that males and females have relatively little interaction within detention centers, so that the DAI profile within females is probably more relevant than the differences between male and female DAI profiles. It may also be the case that females, regardless of risk profile, are involved in different sorts of SIRs and at different frequencies than males. This research posits that when gender is entered into a logistic regression with all other independent variables listed into this section with "Any SIR" as the dependent variable; then gender will be a significant factor in predicting the likelihood of youth to become involved in special incidents. This study posits when gender is entered into a logistic regression with all other independent variables listed in this section with "Suicidal/Self-Harm Behavior" as the dependent variable, females will be at significantly higher risk of involvement in suicidal/self

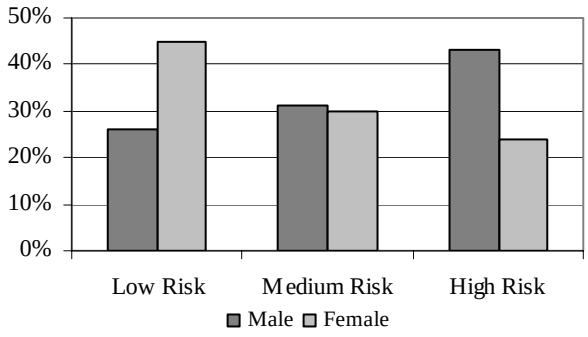



Figure 5
*Comparison of 2001 DAI Scores by Gender*

harm SIRs than males. Finally, this study posits when gender is entered into a logistic regression with all other independent variables listed in this section with “Any SIR” as the dependent variable, males will be at significantly higher risk of involvement in “Any SIR’s than females.

*Individual Detention Risk*

*Length of Stay*

On its face, the relationship between of length of stay (LOS) and risk of involvement in an SIR should be simple. Greater length of stay equals greater exposure to risk of becoming involved in an incident. The issue becomes somewhat more complicated when we ask if risk is cumulative over the course of an episode of detention or specific to the length of stay at a particular placement. The problem is closely related to the unit of measurement problem discussed at the beginning of this chapter. Part of the data from Table 4 is reproduced in Table 6 to illustrate the problem. The youth in this episode was involved in an incident during the placement two at Gainesville. Is the risk associated with length of stay specific to the sixteen days the youth spent at Gainesville or is that risk cumulative and thus twenty six days?

Table 6

*Placement vs. Episode Length of Stay*

| Episode | Placement | Site | Admit Date | Release Date | Placement LOS | Cumulative LOS | Involved in SIR? |
|---|---|---|---|---|---|---|---|
| 1 | 1 | Athens | 7/10/2001 | 7/20/2001 | 10 | 10 | No |
| 1 | 2 | Gainesville | 7/20/2001 | 8/5/2001 | 16 | 26 | Yes |
| 1 | 3 | Gwinnett | 8/5/2001 | 8/15/2001 | 10 | 36 | No |

The problem of whether risk is cumulative or placement specific is a potentially important question that is best answered empirically. Variables for episode length of stay and cumulative length of stay will be created to test the question. This study posits that when “Cumulative LOS” and “Episode LOS” are entered into a logistic regression with all other independent variables list in this section with “Any SIR” as the dependent variable, then both

"Cumulative LOS" and "Episode LOS" will be significant factors with positive betas but that "Cumulative LOS" will have the higher beta. This is to say that risk of involvement in any SIR will be found to increase with both "Cumulative LOS" and "Episode LOS" but that "Cumulative LOS" will be the more predictive of youth involvement in SIRs.

*Maximum Utilization during Detention*

It is widely thought that overcrowding causes the conditions of confinement for youth in detention to deteriorate. It is unclear how specific in time the harmful impact of overcrowding is thought to be. Is it the case that overcrowding on one single day is predictive of involvement in SIRs or it may be that overcrowding over a period of time is more important in understanding the impact of overcrowding on conditions of confinement? The *Conditions of Confinement* study used data from the 1991 *Census of Public Juvenile Detention, Correctional, and Shelter Facilities* (more commonly referred to as the Children in Custody or CIC). The CIC collects data on a one day census of all detention centers in the United States. The collection date for the 1991 CIC was February 15, 1991. The Census has a section on capacity that asks "How many residents is your facility constructed to hold without overcrowding (Parent et al., 1994, p. 268)?" The Census later asks the total number of juveniles at the facility on the day of the census. The *Conditions of Confinement* reported facility population as a percentage of design capacity. The *Conditions of Confinement* study noted that this calculation was problematic because the CIC does not provide an unambiguous definition of design capacity. The measure for overcrowding "is subject to considerable random variation and even the potential of systemic error (Parent et. al., 1994, p. 10)."

This research has access to far more than a one day sample to measure overcrowding. This study operationalized overcrowding in two different ways in order to address this question.

In order to examine whether specific instances of overcrowding are predictive of involvement in SIRs, the Maximum Utilization during Detention variable was created. This variable was calculated by taking the maximum population count for the youth's placement at a detention center and dividing that number by the stated capacity of that facility. If the maximum daily population during a youth's stay at a detention center was thirty-three and the facility has a stated capacity of thirty, for example, the Maximum Utilization during Detention variable for that youth would be 1.3. This study posits that when "Max Utilization" is entered into a logistic regression with all other independent variables listed in this section with "Any SIR" as the dependent variable, then Max Utilization will be a significant factor with a positive beta. That is to say that the likelihood of a youth being involved with an SIR increases with the maximum utilization during a youth's placement at a detention center.

*Overcrowding during Detention*

It may be the case that overcrowding during a period of time is more predictive of involvement in SIRs. Take an example of a youth who is in detention for three days and is involved in an SIR on the third day. On the first two days, the daily count for the center was thirty percent over capacity, but on the third day the census is only seventy percent of capacity. If the study were only to look at Maximum Utilization during Detention, only the 130% figure would be counted. Yet the facility was not overcrowded on the day of the incident. The Overcrowding during Detention variable was created to examine whether overcrowding over the time a youth is detained is predictive of involvement in SIRs. This variable created an average utilization for total time in detention by calculating the total number of child care days provided at the center(s) the youth stayed in and dividing that by the total number of child care days available at capacity. In the three day example, the average is 110%. This provides the average

detention center utilization for placement of detention. This study posits that when “Avg. Utilization” is entered into a logistic regression with all other independent variables listed in this section with “Any SIR” as the dependent variable, then Avg. Utilization will be a significant factor with a positive beta. That is to say that the likelihood of a youth being involved with an SIR increases with the average utilization during a youth’s placement at a detention center. This study further posits that when Avg. Utilization and Max Utilization are entered into a logistic regression with all other independent variables listed in this section with “Any SIR” as the dependent variable, Avg. Utilization will have a higher F statistic than Maximum Utilization.

*Site Size*

Detention centers in the DJJ system vary from 30 bed units to the 200 bed unit at Metro. It may be that youth housed in certain size facilities are more likely to become involved in SIRs than other similar youth in other sized faculties. Detention centers in the DJJ system will be coded as small facilities with up to 30 beds (14 detention centers), moderate size facilities with 40 to 70 beds ( 5 detention centers) and large facilities of 100 or 200 beds (3 detention centers). This study posits that when “Site Size” is entered into a logistic regression with all other independent variables listed in this section with “Any SIR” as the dependent variable, then Site Size will be a not significant factor.

*Transfers*

A transfer is the movement of a detained youth from one center to another within the same detention episode. For the purpose of this study, detention episode is continuous stay in detention that may involve placements in multiple detention centers. While transfers occur for numerous reasons, youth are transferred from one center to a second center primarily to manage overcrowding. It has often been the case, for example, that the Dekalb RYDC is overcrowded

while the nearby Metro RYDC is operating under capacity. In this situation the Department often transfers youth from Dekalb to Metro in order to alleviate overcrowding at Dekalb. Because some detention facilities are chronically overcrowded while other facilities are typically under capacity, transfers will tend to cluster in detention facilities that typically operate under capacity.

Transfers may form a particular risk for detained youth. It may be that youth who were acclimated to the social structure of the detention center they are being transferred from will be less acclimated to the social structure of the detention center they are being transferred to. It may be that youth with a low level of involvement in the juvenile justice system (as measured by a low DAI score) and who are, therefore, relatively inexperienced at acclimating to the detention center environment, adapt poorly to being transferred between facilities. Youth who are transferred are usually being transferred to a facility that is farther from home. If youth in detention centers form groups on the basis of county/city affiliation, transferred youth may find themselves going from an "insider" status to an "outsider" status. Outsiders may be more likely to be picked on. Statistical analysis will show whether low risk youth who are transferred are at greater risk of involvement in SIRs than the general detention population and whether detained youth who have been transferred are at greater risk of involvement in SIRs than the general detention population. The Transfers variable will be a yes/no variable that indicates whether a youth has a detention placement at another detention center immediately preceding placement at the current center. This study posits that when the variable "Transfers" is entered into a logistic regression with all other independent variables listed in this section with "Any SIR" as the dependent variable, then Transfers will be a significant factor with a positive beta. That is to say, youth who have been transferred from another detention center to their current placement will be

significantly more likely to become involved with an SIR than youth who have remained at their initial placement during a detention episode.

*Public Safety Risk Variables*

Variables that can be seen as being an estimate of public safety risk comprise one category of variables included in this study. These variables are components of a juvenile's legal history. Separately or in combinations, these variables may identify specific types of juveniles who are at significantly greater risk of being involved in certain types of SIRs. Descriptions of the strengths and weaknesses of these variables follows.

*Severity of Current Offense*

Every youth who is detained must have an offense recorded upon admission to detention. When a juvenile is detained with multiple offenses, JTS is programmed to utilize a lookup table that prioritizes offenses from the least to most serious. This insures that each detention will have an offense associated with it and that when multiple offenses are associated with a detention, then the same mechanism is used to identify the most serious offense. It should be noted that the ordering of seriousness of offense is a somewhat arbitrary process. The ordering is done by the Assistant Director of the Office of Technology and Information Services and is done according to his best judgment. The ordering has face validity, with murder being the most serious offense and status offenses being the least serious. But when one comes down to finer judgments, it is difficult to say whether "Giving a False Statement to an Officer" is a more serious offense than "Attempted Arson." The problem for database designers is that in order to operationalize the concept of "most serious offense," each offense must be assigned a priority and no such prioritization exists within Georgia code. The lookup table created and maintained by the Office of Technology and Information Services represents a practical, if imperfect, solution.

The use of current offense as a predictor of any sort of future behavior has obvious limitations. A youth with multiple adjudications for felony aggravated assault may be detained on a violation of curfew charge. If one is only to consider the violation of curfew charge as a measure of future risk, one would underestimate the risk this youth poses to public safety. A measure that takes into account a youth's delinquent history would be a better predictor of future risk. Current offense data also only informs us as to what happened on an occasion, not what might have happened. A youth may be adjudicated on a property offense because the house was unoccupied at the time of the house was broken into. Such an offense is categorized as a non-violent offense. The youth may have been armed at the time and the most serious offense may well have been assault with a deadly weapon had the home been occupied at the time.

Categorization of seriousness of current offense is challenging from an administrative standpoint as well. Given the 251 unique offenses listed in the database (email from Josh Cargile, Program Analyst Georgia Department of Juvenile Justice, 12/2/02), the identification of the most serious offense would not be a practical variable. Such a classification, for example, would separate "Shoplifting over $100" from "Shoplifting under $100." It would be more practical, and produce a stronger statistical analysis to subsume individual codes into categories of similar severity. The study creates three broad categories of severity of offenses:

- Low Severity: status offenses, public order offenses, traffic offenses, violation of probation/violation of placement, violation of after care offenses.
- Medium Severity: property offenses, drug use offenses, drug selling offenses, non-violent sex offenses.
- High Severity: violent sex offenses, other violent offenses, offenses that involved the use of weapons.

Because “Severity of Offense” identifies only the youth current offense and not the youth’s entire legal history, this study posits that when “Severity of Offense” is entered into a logistic regression with all other independent variables listed in this section with “Any SIR” as the dependent variable, then Severity of Offense will be a not significant factor.

*Detention Assessment Instrument (DAI) Score*

The DAI score is a broader measure of the offense history of detained juveniles than severity of current offense because the score reflects not only the current offense but also additional current charges, additional pending charges and previous adjudicated offenses and failures to appear in court. The instrument is heavily weighted toward current offense, with point assignments ranging from the most serious violent offenses receiving fifteen points down to no points assigned for a youth with no new charges and only a court order/DJJ order for detention. Up to three points can be awarded for two or more additional current charges, up to three additional points added for three or more pending charges, up to six points added for prior adjudications and three points added for one or more previous failures to appear/runaways.

DAI scores are used as classification tools to identify placement recommendations for youth at risk of placement in secure detention. Unconditional release is recommended for youth scoring less than eight points (Low category). Release with conditions and/or services are recommended for youth scoring between eight and eleven (medium category). Secure confinement is recommended for youth scoring above eleven points (high category). The categorical scores will be investigated because these scores reflect how the instrument is used by the agency.

Characteristics of the data impact the reliability and validity of DAI scores. As discussed in Chapter 2, the JTS database is the product of merging the facility and community databases.

The merge resulted in a large number of duplications where the same youth had different id's in the two different databases (or multiple id's in the same database). This is particularly a problem in this instance because DAI scores are dependent upon legal history data. Legal histories are more complete in the community database. When a duplicate record is created with the legal history under one id and the detention history in a duplicate id, the DAI score of a juvenile whose "detention" id is used will be artificially low.

Data on the DAI concerning youth from "independent courts" will be less reliable than data concerning youth from "dependent counties." Counties with independent courts provide probation services for juveniles adjudicated in their county whereas DJJ provides probation services for "dependent court" counties. The legal histories of juveniles from independent courts are less reliable than dependent court counties because independent counties keep their own databases. The primary legal record of juveniles from independent courts is separate from the JTS system. If the DAI score is generated by the Detention center at the time of admission, officers may well not have accurate information on previous adjudications because they can not access the independent court database. This is most likely to under represent those cases where youth from an independent court have been placed on probation resulting from charges that did not involve a detention admission. This has the effect of causing the DAI score for some juveniles from independent courts to be lower than they should be.

Finally it should be noted that the DAI scores as well as the JTS data DAI scores are partially dependent upon, are subject to user error. Employees sometimes fill out DAI scores in the middle of the night with little interest in administering the instrument and little investment in the form being filled out thoroughly and accurately. These user errors are believed to be

randomly distributed throughout the data. It is not possible to determine the extent or effect of this problem.

The authors of the DAI conducted a validation study of the instrument in February 2001. The study examined whether the instrument separated youth into the groupings that were consistent with the instrument's design. The study concluded that the instrument was being administered as intended but that the results were overridden at a high rate (Wagner, Wiebush, and Lunning, 2001). This finding essentially establishes face validity for the instrument. The study demonstrated that juveniles accused of murder and rape, for example, were classified in a separate category from a youth charged with misdemeanor shoplifting. The study did not demonstrate that youths charged with misdemeanor shoplifting were less likely to re-offend than youths charged with murder. A validation study of whether DAI scores are actually predictive of likelihood to re-offend or failure to appear for a scheduled court date has not been done. While the validity of the DAI may be an important issue for the development of state policy, this problem has no direct bearing on the current study. DAI scores are used in the present study as a proxy for severity of legal history, not likelihood to re-offend. The validation study conducted in 2001 did establish that the instrument accurately categorizes youth according to the severity of delinquency. Hence, if a youth has multiple admissions into detention during the period under study, the highest DAI score will be used. The present study posits that when the variable "DAI" is entered into a logistic regression with all other independent variables listed in this section with "Any SIR" as the dependent variable, then "DAI" will be a significant factor with a negative beta. That is to say, youth in the "high" DAI category will be less likely to be involved in an SIR than youth in the "low" category. This hypothesis is chosen because, if true, it would have the greatest legal impact. If low DAI (low public safety risk) youth are at a greater likelihood to

become involved in an SIR than high DAI youth; than youth whose detention forms the *least* compelling state interest would also be the group whose conditions of confinement could be best characterized as punitive.

*Number of Prior Detentions*

The Number of Prior Detentions may attenuate Age of Juvenile as a risk factor. It may be that youth with multiple prior detentions learn skills during previous detentions that help them cope with the physical and psychological dangers of living in a detention center. It may also be that youth with numerous detention stays are more aggressive and, therefore, more likely to be involved in fights. Number of Prior Detentions is a count of previous detention episodes. Youth are sometimes transferred, for example, between from the Dekalb RYDC to the Paulding RYDC because the Dekalb facility is overcrowded and the Paulding facility is below capacity. For this research the entire stay in both the Dekalb and Paulding facilities would be considered one detention episode. Detention episodes will be operationalized as any series of RYDC placements where the release date from one facility is less than 48 hours than the admission date at another facility. This study posits that when the variable “Prior Detentions” is entered into a logistic regression with all other independent variables listed in this section with “Any SIR” as the dependent variable, then Prior Detentions will be a significant factor with a negative beta. That is to say, youth with a higher number of previous detentions will be significantly less likely to become involved in an SIR than youth with fewer previous detentions. The logic for this hypothesis is the same one presented for the DAI. This research posits that when “Prior Detentions” is entered into a logistic regression with all other independent variables listed into this section with “Any SIR” as the dependent variable, then Prior Detentions will be a significant

factor in predicting the likelihood of youth to become involved in a special incident but that DAI will have a higher F statistic.

### *Subjects*

Subjects for this study will be all youth with episode in detention centers in Georgia whose admission date was between July 1, 2001 and June 30, 2002 and whose release date was on or before June 30, 2002. A detention episode is defined as a continuous stay in detention centers regardless of whether the youth had placements in multiple centers.

### *Procedures*

Data analysis utilized a Generalized Linear Mixed Model with random effects for individual placement data and fixed effects for other youth related variables to model the data. Because individual detention placement is the unit of analysis for the study, the data set for the study contains one line of data for each placement included in the study. If, for example, a youth was admitted to the Paulding RYDC on July 1, 2001 and was then transferred to Gainesville RYDC on July 10$^{th}$ where the youth was subsequently released from detention on July 15$^{th}$; the data set would have two lines of data for this detention episode.

#### *Obtaining and Compiling the Data*

A data request was made to the Office of Information and Technology Services for data used for the study. Four tables were requested. A Demographic Table was requested that contained demographic information on all youth detained in Georgia whose detention episode had an admission date was between July 1, 2001 and June 30, 2002 and whose release date was on or before June 30, 2002. A Detention Table was requested that had information specific to each detention placement. A table labeled DJJ Site Table was also requested to link the numeric site variable in the Detention Table with the center's text name. Finally an Incidents Table was

requested that has all SIRs that were reported from all detention centers from July 1, 2001 to June 30, 2002. A description of the tables follows.

The Demographic Table contains information about youth characteristics that do not change over the course of the year under study. These characteristics include:

- JuvenileID: a unique identifier for each youth. This field was used to link the Demographic Table, the Detention Table and the Incidents Table.
- JuvDOB: Date of Birth
- Ethnicity: Whether youth is White, Black, Hispanic or Other.
- Gender: Male and Female

In addition to these variables, the following variables will be calculated from the data.

- Ethni2: Collapses Ethnicity into White and Non-White in case the number of Hispanic and Other youth is too small to contribute to the analysis.
- IntAge: The youth's age at first admission to detention during the study. This variable is calculated as an integer.

Individual records of individuals with an age of twenty-one or older will be examined to determine whether the records represent valid data. Invalid cases will be excluded from the study.

The Detention Table contains information specific to each detention placement. Variables in this table included:

- JuvenileID: same as in Demographics.
- PlDt: Placement Date.
- RLDt: Release Date.
- Days: Number of days in detention for that detention placement.

- Site: Numeric site identifier.
- Transfers: whether the placement was immediately preceded by placement in another detention center.
- DAI: Detention Assessment Instrument score that is valid for the detention placement.
- MSO: The JTS code for the most serious detaining offense.
- MSOType: the category the MSO falls into (Status, Public Order, Traffic, Violation of Probation/After Care/Alternate Placement, Property, Drug Use, Drug Selling, Sex Non-Violent, Violent Sex, Violent, Weapons).
- PriorDets: The number of prior detention episodes.
- AvgUtil: The average daily percentage of authorized capacity during detention placement.
- MaxUtil: The highest daily percentage of authorized capacity during detention placement.

In addition to these variables, the four other variables are calculated from the detention data.

- Sitecat: Collapses the site data into small (30 bed or less) moderate (40-70 bed) and larger facilities (100-200 bed facilities).
- MSOCat: Collapses MSOType into Low (Status, Public Order, Traffic, Violation of Probation/After Care/Alternate Placement), Medium (Property, Drug Selling, Drug Use, Sex Non-Violent) and High categories (Violent Sex, Weapons).
- DetID: a unique integer identification for each detention placement.
- Length of Stay: Calculated by subtracting the release date from the placement date.

The Incidents Table contains information specific to incidents. Each line of data documents one youth's involvement in one incident. Because one incident can receive multiple codings (i.e. an incident can be both a Use of Force and Youth on Youth Assault), each line has a yes/no field for each type of incident code. Because multiple youth can be involved in an incident, a single incident may include multiple lines of data. Variables in the Incidents Table include:

- JuvenileID: same as in Demographics.
- IncNumber: Unique identifier for incidents.
- incDateOfIncident: Date of incident.
- sitlocationcode: Numeric site identifier (same of Site in Detention Table).
- InvolvementType: Type of involvement in incident. Possibilities include accused, victim, witness, complainant, reporting, supervisor, and contact.
- uofType: Type of force used in Use of Force incidents (soft hand control, mechanically restrained, hard empty hand control).
- AB: Yes/no field indicating whether SIR was coded as an allegation of child abuse.
- AC: Yes/no field indicating whether SIR was coded as an allegation of sexual assault.
- AE: Yes/no field indicating whether SIR was coded as a suicide attempt.
- AF: Yes/no field indicating whether SIR was coded as a use of force.
- AG: Yes/no field indicating whether SIR was coded as a serious injury requiring outside medical attention.

- BC: Yes/no field indicating whether SIR was coded as a youth on youth assault with injury.
- BD: Yes/no field indicating whether SIR was coded as a youth on staff assault with injury.
- CD: Yes/no field indicating whether SIR was coded as a suicide gesture.
- CF: Yes/no field indicating whether SIR was coded as a youth on staff assault without injury.
- CG: Yes/no field indicating whether SIR was coded as a youth on youth assault without injury.

Data in the "Involvement Type" will be evaluated to eliminate incidents where the involvement type is witness, supervisor, reporting, or contact.

After all the individual variables have been constructed, they must be compiled so that each line of data has the demographic, detention placement and incident data specific to each placement. This requires a two step process. The first step is the creation of a table (SPSS2) that links demographic and detention data (through the use of the JuvenileID) and links incident data through the use of a compound key comprised of the JuvenileID, site id, and a query statement that evaluates whether the incident took place on or after the youth's placement date and on or before the youth's release date. This will create a table that has one line of data for each incident. In order to create one line of data for each placement, a new table (SPSS3) creates a variable that sums the totals for each type of incident for each detention placement (SumAB, SumAC, etc.). The sum variables are then evaluated to create a dichotomous variable for each incident typed indicating whether the youth was involved in that type of incident during each detention placement during the study period.

In addition to these variables, the seven other variables are calculated from the SSPS2 Table data.

- SitTot: The sum of number of incident fields coded “yes” for each detention placement. Because a single incident can receive multiple codings, the value in this field is not necessarily an unduplicated count of the number of incidents a youth is involved in during a detention placement.
- Any Sir: Indicates whether a youth was involved in *any* allegation of child abuse or sexual assault, use of force, youth on youth assault, youth on staff assault, self-harm or serious personal injury incident during a detention placement. This variable evaluates the SirTot variable and assigns zero if SirTot equals zero and one if SirTot is greater than zero.
- Use of Force: Indicates whether a youth was involved in a Use of Force (coded AF) during a detention placement.
- Self-Harm: (Suicidal/Self-Harm Behavior) Evaluates whether there are yes responses to AE or CD fields for incidents youth was involved in during detention placement.

Data from the SSPS3 table was exported into an Excel 97-2002 format spreadsheet for analysis in SPSS.

*Statistical Procedures*

An analysis of factors that are predictive of youth involvement in SIRs must test 1) the significance of the relationship between dependent and independent variables in the regressions, 2) the fit of the model, and 3) the relative strength of each factor in the regression. A Generalized Linear Mixed Model (GLMM) with fixed effects and random effects will be used to identify

factors that are predictive of youth becoming involved in SIRs. The Generalized Linear Mixed Model procedure evaluates whether the variance explained by the model is significantly higher than the variation explained by random sample variation. A Generalized Linear Mixed Model with fixed effects for youth related variables and random effects to model the impact of individual placements will be used to identify factors that are predictive of youth becoming involved in the different combinations of SIR types discussed in the immediately preceding section.

The use of the Generalized Linear Mixed Model procedure is important because utilizing a logistic regression model could underestimate the predictive power of variables while not accounting for the impact of the effects youth who may have multiple placements. Because each line of data represents a detention placement and many youth will have multiple placements, the total number of cases will be inflated in a logistic regression. If eight-hundred youth have fifteen-hundred detention placements, the logistic regression model will evaluate improvements in the likelihood ratio as if there were fifteen hundred independent observations. This could have the effect of the model underestimating the predictive power of variables by overstating the number of observations. A Generalized Linear Mixed Model procedure that assigns child demographic data as random subject effects will permit the data to be more accurately modeled.

While the GLMM procedure establishes which factors are significant predictors of youth involvement in SIRs, it is important to understand how well the model fits the data. In linear regressions the fit of the model is assessed by comparing the sum of the squares before independent variables are added to the regression and the sum of the squares with the independent variables added to the equation. The difference in the sums demonstrates the improvement due to the independent variables and is reflected by the $R^2$ statistic which indicates

the percent of variance explained by the model. Explanatory variables will be tested for significance using an approximate *F* test (Vonesh & Chinchilli, 1997). The magnitude of the serves as a measure of the relative contribution each dependent variable makes to the model.

### *Limitations of the Research*

The discussion of the sample used in this research and certain characteristics of the data suggest certain limitations of the data which will restrict the generalizability of the results. The sample of this study is youth detained in the State of Georgia between 7/1/01 and 6/30/02. The results from this research can not be generalized to youth living outside Georgia. The results of this study can not be generalized to other states for other reasons. Other jurisdictions almost certainly have different rules for coding adverse incident than Georgia, so results based on SIRs in Georgia could only form a rough guideline for understanding risk in other jurisdictions. The rules for admission to detention vary among states. The rules governing the transfer of youth between detention centers also vary. Thus the rules for detention vary within states. It would seem unwarranted to generalize the result of this study to Portland, Oregon, for example, because Portland has experienced dramatic success in their efforts to restrict detention to those youth that have high scores on the risk reduction instrument that is used there (Handout from 2nd National Training Conference on Juvenile Detention Reform, Portland, OR., January 2002). The detention population in Portland is very different from the detention population in Georgia where many youth scoring in the low and moderate range on the DAI wind up in detention.

Various problems with the dependent data have been noted that negatively impact the reliability and validity of the dependent variables. These problems include the lack of clear definitions for special incident codes that have undoubtedly resulted in the same behavior being coded differently by different employees. This is particularly evident in the coding of suicide

gestures and suicide attempts where policy in place at the time of the study gave employees no guidance as to what the difference between a gesture and an attempt would be. It is also believed that some sites may be more conscientious about filing reports than other sites. These factors combine to diminish both the reliability and validity of the dependent variables in this study because the same behavior does not always result in the same data entry.

Similarly, problems with various independent variables have been discussed. The use of risk assessment instruments (RAIs) to define admission to detention is an important priority for the Detention Alternatives Initiative of the Casey Foundation. The relationship between the DAI and the risk of youth involvement in SIRs may be of particular interest to this group. Any relationship between the DAI and risk of involvement in SIRs can not be properly generalized both because the Georgia DAI and other RAIs are not the same and because of problems with the DAI data. As mentioned in the discussion of the DAI, data from independent courts is probably less reliable than jurisdictions where the Georgia Department of Juvenile Justice performs all court services. There are also questions as to what the DAI measures because an empirical study establishing the specificity and sensitivity of the DAI. That is to say, it has never been empirically established that the DAI is capable of predicting which youth are most likely to commit an offense between the time they are apprehended and the time their court case is adjudicated. This is a critical limitation and will be addressed in the recommendations for further research section of the discussion of results. Finally there are known problems with the detention placement data that have caused detention placement to be dropped from the study because youth were too old to have possibly been detained during the study period and because of placements with over-lapping placement dates.

With the exception of the possible impact of independent courts on DAI scores, none of these problems represent systematic bias but rather reflect the realities of a live database. The designers of the database have had to address structural problems while the system was being deployed. The merging of separate facility community databases produced anomalies like overlapping placement dates. The data in the database was created by busy employees who are sometimes more concerned with completing data entry tasks than ensuring that the data is accurate. The net result is a data set with a certain amount of background noise that can not be precisely specified. The result of this research will be stated in very specific terms that may give the illusion of precision that is not warranted. The research may find, for example, that a one percent increase in the average utilization during a youth's placement results in a youth having a one percent greater chance of becoming involved in an SIR. The cumulative effect of problems with the quality of the data means that such precision would not be warranted. If pristine data for the same youth were available, the actual impact might be larger or might be less. It is the author's contention, however, that because the errors in the data are almost entirely random and because the sample size is very large, then the relationships found in the study and the relative magnitude of the predictive factors will be valid.

# Chapter IV

## Results

### *Descriptive Statistics*

A query of youth with placements in detention centers from July 1, 2001 and June 30, 2002 identified 13, 557 youth with 21,179 placements. Six youth were identified as having ages of over twenty years of age at placement. No one over twenty years of age can be housed in a detention center, so the data regarding these youth is inaccurate and the youth's records were eliminated from the study. In addition there were 230 instances where the begin date of one placement overlapped with the end date of a previous placement. It is not possible to determine what the actual placement and release dates were, so these placements were also eliminated from the study. This resulted in an additional forty youth being excluded from the study because all of the placements contained overlapping placement dates. Forty-seven youth had placements eliminated because of the overlapping placement problem but remained in the study because some of their placements did not contain overlaps.

This left a total of 20,949 placements for 13,517 youth were included in the study. The average number of placements per youth was 1.5 placements. As shown in Table 7, over 87% of youth had either one or two placements. The relatively few youth with multiple placements are important to the study as the average number of SIRs for youth with

Table 7
*Placements per Youth, Average SIRs per Placement*

| Placements | Frequency | % | Avg SIRs |
|---|---|---|---|
| 1 | 8873 | 65.6% | 0.14 |
| 2 | 2955 | 21.9% | 0.50 |
| 3 | 1051 | 7.8% | 0.87 |
| 4 | 380 | 2.8% | 1.59 |
| 5 | 150 | 1.1% | 1.47 |
| 6 | 60 | 0.4% | 2.27 |
| 7 | 23 | 0.2% | 2.04 |
| 8 | 11 | 0.1% | 2.00 |
| 9 | 8 | 0.1% | 1.50 |
| 10 | 4 | 0.0% | 0.75 |
| 11 | 2 | 0.0% | 0.00 |
| Total | 13517 | 100.0% | 0.35 |

multiple placements escalates quickly as the number of placements rises. The sixty youth who each had six placements had an average of 2.27 SIRs or *sixteen* times the average SIRs of youth with only one placement. A total of 3,738 or 28% of the youth included in the study were female. A total of 9,779 or 72% of the youth included in the study were male. A total of 8,957 or 66% of the youth in the study were minority youth (either African-American, Hispanic or other non-white), while 4,560 or 34% of the youth in the study were White. It is estimated that 33% of the population in Georgia was minority (all populations but White) and that 66% of the population was White in 2002 (Boatright & Bachtel (Eds.), 2003). The proportion of minority students detained during the study period was double the proportion of minorities in the general population while the proportion of Whites was half the proportion of the general population.

Because the ethnic and gender composition of the population of detained youth are important from both a political and research point of view; it is worth considering how dependent and independent variables differ in these regards. As shown in Table 8, almost all variables had statistically significant differences when compared by gender and ethnicity. The only exceptions to this were gender and number of self-harm incidents and ethnicity and number of placements. There where there were no statistically significant differences in these categories. In a study with an n of thousands, it is possible that the differences between two categories within the study population would be statistically significant but of a small magnitude. Cohen's *d* effect size statistic for scale level variables and the *phi* statistic for ordinal variables provide a measure of magnitude. Cohen states that a *d* .2 can be understood as a small difference, a *d* of .5 represents a moderate difference and .8 or above represents a large difference (Cohen, 1988**)**. Green, Salkind and Akey (1997) state that *phis* of .1, .3, and .5 represent small, medium and large effect sizes, respectively. By this measure the differences in all variables were small. The

Table 8

*Comparison of variable in study by Ethnicity and Gender*

| Variable | Factor | Comparison | Mean | n | missing | t | *p* | *df* | *d* |
|---|---|---|---|---|---|---|---|---|---|
| Age* | Ethnicity | Minority | 14.72 | 8957 | 0 | 9.8 | 0.000 | 9559.6 | 0.2 |
| | | White | 14.96 | 4560 | | | | | |
| | Gender | Female | 14.72 | 3738 | 0 | 4.1 | 0.000 | 7364.4 | 0.1 |
| | | Male | 14.83 | 9779 | | | | | |
| Any SIRs* | Ethnicity | Minority | 0.37 | 8957 | 0 | 2.9 | 0.004 | 8692.8 | 0.1 |
| | | White | 0.30 | 4560 | | | | | |
| | Gender | Female | 0.17 | 3738 | 0 | 13.5 | 0.000 | 11273.9 | 0.2 |
| | | Male | 0.42 | 9779 | | | | | |
| Use of Force SIRs* | Ethnicity | Minority | 0.19 | 8957 | 0 | 2.8 | 0.005 | 8151.0 | 0.1 |
| | | White | 0.15 | 4560 | | | | | |
| | Gender | Female | 0.10 | 3738 | 0 | 9.1 | 0.000 | 10298.8 | 0.2 |
| | | Male | 0.21 | 9779 | | | | | |
| Self-Harm SIRs* | Ethnicity | Minority | 0.03 | 8957 | 0 | 2.3 | 0.021 | 6280.6 | 0.0 |
| | | White | 0.04 | 4560 | | | | | |
| | Gender | Female | 0.03 | 3738 | 0 | 0.7 | 0.467 | 13515.0 | 0.0 |
| | | Male | 0.03 | 9779 | | | | | |
| # of Placements* | Ethnicity | Minority | 1.56 | 8957 | 0 | 1.0 | 0.320 | 13515.0 | 0.0 |
| | | White | 1.54 | 4560 | | | | | |
| | Gender | Female | 1.49 | 3738 | 0 | 4.1 | 0.000 | 6398.4 | 0.1 |
| | | Male | 1.57 | 9779 | | | | | |
| Total Length of Stay* | Ethnicity | Minority | 25.13 | 8957 | 0 | 6.2 | 0.000 | 10419.7 | 0.1 |
| | | White | 21.90 | 4560 | | | | | |
| | Gender | Female | 18.15 | 3738 | 0 | 16.5 | 0.000 | 9249.9 | 0.3 |
| | | Male | 26.31 | 9779 | | | | | |
| Prior Detentions | Ethnicity | Minority | 1.62 | 13935 | 0 | 11.1 | 0.000 | 15721.3 | 0.2 |
| | | White | 1.3 | 7014 | | | | | |
| | Gender | Female | 1.34 | 5582 | 0 | 7.2 | 0.000 | 10318.6 | 0.1 |
| | | Male | 1.57 | 15367 | | | | | |
| Placement Length of Stay | Ethnicity | Minority | 16.16 | 13935 | 0 | 7.0 | 0.000 | 16047.5 | 0.1 |
| | | White | 14.26 | 7014 | | | | | |
| | Gender | Female | 12.15 | 5582 | 0 | 17.5 | 0.000 | 13464.0 | 0.2 |
| | | Male | 15.74 | 15367 | | | | | |
| Transfers | Ethnicity | Minority | 1.99 | 13935 | 0 | 5.9 | 0.000 | 12788.8 | 0.1 |
| | | White | 1.73 | 7014 | | | | | |
| | Gender | Female | 0.07 | 5582 | 0 | 10.1 | 0.000 | 12084.0 | 0.2 |
| | | Male | 0.12 | 15367 | | | | | |
| Average Utilization | Ethnicity | Minority | 0.97 | 13935 | 0 | 4.9 | 0.000 | 14295.9 | 0.1 |
| | | White | 0.99 | 7014 | | | | | |
| | Gender | Female | 0.97 | 5582 | 0 | 2.2 | 0.028 | 9656.1 | 0.1 |
| | | Male | 0.98 | 15367 | | | | | |
| Maximum Utilization | Ethnicity | Minority | 1.08 | 13935 | 0 | 4.2 | 0.000 | 14363.0 | 0.0 |
| | | White | 1.09 | 7014 | | | | | |
| | Gender | Female | 1.07 | 5582 | 0 | 7.2 | 0.000 | 9746.3 | 0.1 |
| | | Male | 1.09 | 15367 | | | | | |

| Variable | Factor | Comparison | Mean | n | missing | $C^2$ | *p* | *df* | Phi |
|---|---|---|---|---|---|---|---|---|---|
| Most Serious Offense | Ethnicity | Minority | - | 13441 | 650 | 85.6 | 0.000 | 2.0 | 0.1 |
| | | White | - | 6858 | | | | | |
| | Gender | Female | - | 5379 | 650 | 688.6 | 0.000 | 2.0 | 0.2 |
| | | Male | - | 14920 | | | | | |
| Site Category | Ethnicity | Minority | - | 13935 | 0 | 483.5 | 0.000 | 2.0 | 0.2 |
| | | White | - | 7014 | | | | | |
| | Gender | Female | - | 5582 | 0 | 78.5 | 0.000 | 2.0 | 0.1 |
| | | Male | - | 15367 | | | | | |
| DAI Category | Ethnicity | Minority | - | 11973 | 2829 | 88.5 | 0.000 | 2.0 | 0.1 |
| | | White | - | 6147 | | | | | |
| | Gender | Female | - | 4592 | 2829 | 631.1 | 0.000 | 2.0 | 0.2 |
| | | Male | - | 13528 | | | | | |

*Calculated using an unduplicated count of subjects

effect size was somewhat higher for gender (seven categories with effect size statistics above .1) than ethnicity (three categories with effect size statistics above .1) The difference between the average total length of stay of males (26.3 days) and females (18.2 days) produced an effect size of .3, which was the largest in the study.

*Age*

The average age at first admission into detention was 14.8 years of age. As can be seen in Table 9, the distribution of age between gender and ethnicity were similar. The average age of Females (14.7) was slightly younger than of Males (14.8) and the average age of Minority youth (14.7) was slightly younger than of White youth (14.8). The vast majority of youth detained during the study period were between the ages of thirteen and sixteen (87% of the sample). The youngest youth were eight years old.

Table 9

*Age at First Admission*

| | | Gender | | Ethnicity | |
|---|---|---|---|---|---|
| Age | Overall | Female | Male | Minority | White |
| 8 | 0% | 0% | 0% | 0% | 0% |
| 9 | 0% | 0% | 0% | 0% | 0% |
| 10 | 0% | 0% | 0% | 0% | 0% |
| 11 | 1% | 1% | 1% | 2% | 1% |
| 12 | 5% | 5% | 5% | 3% | 4% |
| 13 | 11% | 11% | 11% | 12% | 9% |
| 14 | 18% | 21% | 18% | 19% | 17% |
| 15 | 27% | 29% | 26% | 27% | 28% |
| 16 | 31% | 29% | 33% | 30% | 34% |
| 17 | 5% | 3% | 5% | 4% | 6% |
| 18 | 0% | 0% | 1% | 0% | 1% |
| 19 | 0% | 0% | 0% | 0% | 0% |
| 20 | 0% | 0% | 0% | 0% | 0% |
| Total | 98%* | 100% | 100% | 97%* | 100% |

*Do not add up to 100% due to rounding

*Individual Detention Risk Variables*

*Length of Stay*

Table 10 presents placement data. As can be seen in Table 4, length of stay data provides the greatest contrasts in the study. The greatest contrast is between the total length of stay averages of minority males and females where the

Table 10

*Placement Data Averages by Ethincity & Gender*

| | | Minority | | White | |
|---|---|---|---|---|---|
| | Overall | Female | Male | Female | Male |
| Placements per Youth | 1.5 | 1.4 | 1.6 | 1.6 | 1.5 |
| Transfers | 0.2 | 0.07 | 0.18 | 0.19 | 0.19 |
| Placement Length of Stay | 15.5 | 12.5 | 17.4 | 11.6 | 15.3 |
| Detention Episode Length of Stay | 17.4 | 13.1 | 19.7 | 13.2 | 17.6 |
| Total Length of Stay | 24.1 | 17.4 | 27.9 | 18.7 | 23.2 |

male average was 38% higher. White males also had longer lengths of stay than did white females, but the difference was only 19%. It is worth noting that these differences were not driven by differences in placements which varied in a narrow range. Transfers for minority females were rare.

*Utilization Data*

Table 11 presents the data on utilization per placement. The average utilization for all placements was 98% (most centers were filled, on average, to 98% of their capacity). The average maximum utilization (the most crowded day during detention placement) was 109%, with the average difference between the two being 11%. The patterns in the utilization data is similar to those in the placement data. Minority females had the lowest average utilization, the lowest maximum utilization and the lowest difference between the average and maximum utilization.

Table 11
*Utilization Data Averages by Ethnicity & Gender*

| | | Minority | | White | |
|---|---|---|---|---|---|
| | Overall | Female | Male | Female | Male |
| Average Utilization | 98% | 97% | 98% | 99% | 99% |
| Maximum Utilization | 109% | 106% | 109% | 109% | 110% |
| Difference between Average & Maximum | 11% | 9% | 11% | 10% | 11% |

This study posits that site size will not be a significant factor. A one-way analysis of variance was conducted to evaluate the relationship between site category and average and maximum utilization. The ANOVA for both average utilization , $F$ (2, 20946) = 2839.6, $p$ < .000, and maximum utilization, F (2,20946) = 2859.6, $p$ < .000, were both significant. Table 12 presents the data for

Table 12
*Utilization by Site Category*

| Site Category | Average Utilization | Maximum Utilization | Difference |
|---|---|---|---|
| 30 Beds or less | 102% | 115% | 13% |
| 40-70 Beds | 107% | 117% | 10% |
| 100-200 Beds | 85% | 93% | 8% |

utilization by site category. The mid-sized center had the highest average and maximum utilization while the largest centers had the lowest average and maximum utilization. Table 13 presents utilization data for individual sites sorted alphabetically by site category.

Table 13
*Site Utilization*

| Site | Beds | Average Utilization | Maximum Utilization | Difference |
|---|---|---|---|---|
| Albany | <31 | 108% | 121% | 13% |
| Athens | <31 | 86% | 98% | 12% |
| Augusta | <31 | 112% | 126% | 14% |
| Blakely | <31 | 83% | 97% | 14% |
| Claxton | <31 | 90% | 103% | 13% |
| Columbus | <31 | 114% | 127% | 14% |
| Dalton | <31 | 89% | 99% | 10% |
| Eastman | <31 | 106% | 121% | 15% |
| Gainesville | <31 | 105% | 117% | 11% |
| Griffin | <31 | 115% | 131% | 16% |
| Rome | <31 | 97% | 108% | 12% |
| Sandersville | <31 | 105% | 118% | 13% |
| Thomasville | <31 | 101% | 115% | 14% |
| Waycross | <31 | 100% | 114% | 14% |
| Clayton | 40-70 | 112% | 122% | 10% |
| Dekalb | 40-70 | 103% | 112% | 9% |
| Gwinnett | 40-70 | 115% | 127% | 12% |
| Macon | 40-70 | 127% | 140% | 14% |
| Marietta | 40-70 | 82% | 90% | 8% |
| Metro | 100-200 | 84% | 91% | 7% |
| Paulding | 100-200 | 88% | 96% | 9% |
| Savannah | 100-200 | 84% | 92% | 8% |

*Public Safety Risk Variables*

*Severity of Offense:*

In order to make data analysis more manageable, severity of current offense data was collapsed into three categories. The Department JTS database collapses current offenses into eleven categories. Table 14 presents a crosswalk from the eleven category schema to the three category schema used in the study.

Table 14
*Most Serious Offense Categories*

| Offense Category | MSO Category |
|---|---|
| Public Order | 1 |
| Status | 1 |
| Traffic | 1 |
| VOP | 1 |
| Drug Selling | 2 |
| Drug Use | 2 |
| Property Offense | 2 |
| Sex Nonviolent | 2 |
| Violent | 3 |
| Violent Sex | 3 |
| Weapons | 3 |

Table 15 presents the data on severity of offense as

characterized by the Most Serious Offence categories. The most serious offense profiles of the sample differ by gender and ethnicity. White females had the highest percent of least serious offenses and the lowest percent of most serious offenses. While minority females had a higher percent of least serious offenses than white males, minority females and white males had the same percentage in the most serious category. Minority males had the lowest percentage in the least serious category and the highest percentage in the most serious category.

Table 15
*Most Serious Offense by Ethnicity & Gender*

| | | Minority | | White | |
|---|---|---|---|---|---|
| Offense Category | Overall | Female | Male | Female* | Male |
| Least Serious Offense | 51% | 64% | 44% | 69% | 48% |
| Moderately Serious Offense | 33% | 21% | 37% | 24% | 37% |
| Most Serious Offense | 16% | 15% | 19% | 8% | 15% |

* Does not add up to 100% due to rounding

*DAI Scores*

Table 16 presents the data on DAI scores. A large number of DAI scores (13% of total) were missing. These missing scores were not evenly distributed among demographic groups as minority females had a *much* higher rate of missing DAI's (22%) than other demographic groups (11%-13%). No reason is known for this disparity. In general, the DAI distribution is similar to the most serious offense distribution with females having a lower proportion of low scores than males.

Table 16
*DAI Scores by Ethnicity & Gender*

| | | Minority | | White | |
|---|---|---|---|---|---|
| | Overall | Female | Male* | Female | Male* |
| Low | 23% | 30% | 19% | 35% | 22% |
| Medium | 27% | 25% | 26% | 30% | 29% |
| High | 37% | 23% | 43% | 24% | 37% |
| Missing | 13% | 22% | 11% | 11% | 13% |

* Does not add up to 100% due to rounding

DAI scores translate directly into departmental recommendations about which youth should be detained. It is recommended that youth scoring in the low range not be detained and be released from detention without further services. Youth scoring in the medium range should be released when appropriate alternate services (electronic monitoring, intensive supervision) can be arranged. Youth scoring in the high range are automatically recommended for detention. Only

40% of the youth who were administered DAIs during placement scored in the high range. Two conclusions seem inescapable. First, the DAI has little credibility with either the judges who make detention decisions or the court workers (often DJJ employees) who advise judges on detention decisions. Secondly, *if* the DAI is a valid measure of risk to re-offend (and that has not been empirically demonstrated), then overcrowding in detention centers in Georgia could be eliminated immediately if only the youth scoring *low* on the DAI were not detained. Overcrowding in detention centers in Georgia does not appear to function of a detention system overburdened with dangerous youth at high risk to re-offend, but rather a function of a system that appears to not restrict access to detention on the basis of risk to re-offend; the primary basis stated in *Schall v. Martin* for justifying the pre-adjudication detention of juveniles.

*Prior Detentions*

Table 17 presents the data on prior detentions. Unlike other characteristics reviewed in this section, the contrast between minority males and the rest of the sample is the most compelling feature. In length of stay, seriousness of offense, and DAI data; white youth were more similar to minority youth than minority and white females.

Table 17
*Prior Detentions by Ethnicity & Gender*

| Prior | | Minority | | White | |
|---|---|---|---|---|---|
| Detentions | Overall* | Female* | Male | Female | Male* |
| 0 | 44% | 51% | 40% | 49% | 48% |
| 1 | 21% | 19% | 21% | 21% | 21% |
| 2 | 12% | 11% | 13% | 10% | 12% |
| 3 | 8% | 7% | 9% | 7% | 8% |
| 4 | 5% | 5% | 6% | 5% | 4% |
| > 4 | 9% | 8% | 11% | 8% | 6% |

* Does not add up to 100% due to rounding

In the prior detention data minority males have a higher average number of prior detentions (1.7) than the average for white males, white females and minority females (all 1.3). Given that the DAI risk profile of white males was similar to minority males; the higher number of previous detentions among minority males may be yet another illustration of disproportionate minority confinement. Alternatively, the data could mean that judges weigh previous detention history more heavily than the DAI does.

*Special Incident Reports*

Table 18 presents data on the percentage of youth were involved in SIRs. The data are compiled from an unduplicated count of youth. The distribution of youth involved in any SIR or Use of Force incidents is similar to the patterns seen with most serious offense and DAI data. The lowest percentage of youth involved in these incidents were white females, followed by minority females, followed by white males and minority males having the highest percentage of youth involved in any SIR or in Use of Force incidents. Few youth were involved in self-harm incidents.

Table 18
*Percentage of Youth Involved in Incidents*

| | | Minority | | White | |
|---|---|---|---|---|---|
| Incident Type | Involvement | Female | Male | Female | Male |
| Any SIR | Yes | 10% | 21% | 8% | 16% |
| | No | 90% | 79% | 92% | 84% |
| Use of Force | Yes | 6% | 13% | 5% | 9% |
| | No | 94% | 87% | 95% | 91% |
| Self Harm | Yes | 2% | 2% | 2% | 3% |
| | No | 98% | 98% | 98% | 97% |

*Inferential Statistics*

*Any SIR*

A two step process was utilized to model the data for all three dependent variables. First, the PROC LOGISTIC procedure in SAS was used with the FORWARD selection option to select a candidate set of explanatory variables for the final model. The PROC NLMIXED procedure was then utilized to identify variables included in the final model. While PROC NLMIXED permits the addition of random subject effects to fit a mixed-effect logistic model, PROC NLMIXED does not have an explanatory variable selection routine built in. PROC LOGISTIC was used, therefore, to build a conservative preliminary model designed to err on the side of adding too many explanatory variables. A random effects version of the preliminary model was then fit with the more time consuming PROC NLMIXED, and nonsignificant explanatory variables were eliminated one at a time before arriving at a final model. The set of

potential explanatory variables used in PROC LOGISTIC included all possible two-way interactions between the following set of variables:

- LOS (Length of Stay)
- TRANSFER
- DAICAT (DAI Category)
- GENDER
- INTAGE (Age at first placement as an integer)
- PRIODET (Prior Detentions)
- AVGUTIL (Average Utilization)
- UTILDIFF (Difference between average and maximum utilization)
- ETHNI2 (dichotomous ethnicity variable with White and Minority).

Upon examination of the data, the decision was made that the cumulative length of stay variable would not be productive and the data characterized by the most serious offense variable was duplicative of the DAI data. These variables were not tested in the data models. If an interaction involving explanatory variables were significant, then the main effect variables were included in the final model regardless of whether the main effects were significant. That is, consistent with standard practice, only hierarchical models were considered.

The variable UTILLDIFF was created on the basis of preliminary logistic regression analyses in SPSS. These preliminary analyses showed that both average utilization and maximum utilization were significant explanatory variables in modeling the data for all three dependent variables. Maximum utilization had a positive regression coefficient (beta) and average utilization had a negative beta. When asked about this, Dr. Hall speculated that the negative effect for average utilization probably meant that average utilization was acting as a floor for the impact of maximum utilization: the lower the average utilization the greater the impact of maximum utilization. In other words, it was probably the difference between the average utilization and peak utilization during a placement that was significant. When performing the final analysis in SAS, Dr. Hall decided to retain the AVGUTILL variable but

replace the maximum utilization variable with the UTILDIFF variable which is the difference between the average utilization during a detention placement and the highest single day utilization during the placement.

Table 19
*Variables Predictive of Involvement in Any Incident & Interaction Effects*

| Variable | Numerator DF | Denominator DF | F Value | Pr > F |
|---|---|---|---|---|
| los | 1 | 1.40E+04 | 62.87 | <.0001 |
| utildiff | 1 | 1.40E+04 | 56.55 | <.0001 |
| age | 1 | 1.40E+04 | 23.66 | <.0001 |
| site | 21 | 1.40E+04 | 15.84 | <.0001 |
| priordet | 1 | 1.40E+04 | 15.82 | <.0001 |
| transfer | 1 | 1.40E+04 | 15.04 | 0.0001 |
| gender | 1 | 1.40E+04 | 8.57 | 0.0034 |
| daicat | 3 | 1.40E+04 | 5.4 | 0.001 |
| Interaction | DF | DF | F Value | Pr > F |
| los*utildiff | 1 | 1.40E+04 | 450.98 | <.0001 |
| utildiff*gender | 1 | 1.40E+04 | 13.72 | 0.0002 |
| los*sitecat | 2 | 1.40E+04 | 13.66 | <.0001 |
| utildiff*sitecat | 2 | 1.40E+04 | 10.7 | <.0001 |
| los*age | 1 | 1.40E+04 | 9.67 | 0.0019 |
| los*gender | 1 | 1.40E+04 | 8.44 | 0.0037 |
| los*transfer | 1 | 1.40E+04 | 6.44 | 0.0112 |
| priordet*daicat | 3 | 1.40E+04 | 3.94 | 0.0081 |
| sitecat*daicat | 6 | 1.40E+04 | 2.1 | 0.0497 |

Explanatory variables were tested for significance using an approximate *F* test (Vonesh & Chinchilli, 1997). Table 19 presents the variables and significant interaction effects that were retained in the final model for the Any SIR dependent variable. The explanatory variables and interaction effects are ordered by the F statistic to show the relative importance of each variable in the final equation**.** Placement length of stay (LOS) made the largest relative contribution. UTILDIFF made the next largest contribution while average utilization was not retained in the model. There was a very strong interaction effect between LOS and UTILDIFF. These two strongest variables also had interactions with other variables. The other significant variables all had F statistics of less than half the size of LOS and UTILDIFF and thus make smaller contributions to the model. AGE, SITE, PRIORDET, and TRANSFER all made similar contribution with GENDER and DAICAT making relatively small contributions.

It is important to note the variables that were not included in the final model. The decision was made to test the effect of individual sites and site categories. The variable SITE did

a significantly better job of modeling the data than the SITECAT variable ($F(21, 1400)=15.84$, $p<.0001$). While the size of detention centers (SITECAT) may have been a significant predictor, it was not as good a predictor as site. Differentiating between all sites through the use of the SITE category explained significantly more variability in the response than by differentiating by size of detention center. While placement length of stay was significant, detention episode length of stay was not. When the difference between average and maximum utilization was entered into the model through the UTILDIFF variable, the variation accounted for by the AVGUTIL variable was not significant. Ethnicity (ETHNIC) and most serious offense category (MSOCAT) were also not included in the model. A detailed discussion of the variables retained in the model follows.

*Variables Predictive of Any SIR*

Length of stay (LOS) made the largest contribution to the final model of variables that were explanatory of a youth's being involved in any SIR while confined in detention. LOS has a positive beta of 0.1211, indicating that the likelihood of a youth being involved in an SIR increases as the placement length of stay increases. A comparison of quartile averages of the placement length of stay variable presented in Table 20 illustrates the relationship. While the average number of youth involved in an SIR whose length of stay was less than four days was very small (three youth per thousand) the quartile average rises as the length of stay rises. Approximately one-third of youth were involved in a special incident when length of stay was greater than three weeks. The effect of length of stay, however, can not be understood in isolation as the impact of length of stay is dependent upon its interaction with other variables. Length of stay had significant interactions

Table 20
*Average Number of Youth Involved in SIR by Length of Stay Quartile*

| Quartile | Average |
|---|---|
| LOS < 4 | 0.003 |
| LOS > 3 & < 10 | 0.04 |
| LOS > 9 & < 22 | 0.15 |
| LOS > 21 | 0.35 |

with the utilization difference, site category, age, gender, and whether a youth was involved in a transfer.

The negative beta (-0.1937) characterizing the interaction between length of stay and utilization difference is the most powerful interaction in the study ($F(1, 1400)=451$, $p<0.0001$). UTILLDIFF has a positive beta (7.4522) indicating that the likelihood of a youth becoming involved with an incident increases as the difference between the average and peak utilization increases. The importance of this interaction is underscored by the fact that the interaction is between the two strongest factors in the final regression model. This negative beta means that the interaction has an *inhibitory* effect on impact of both length of stay and utilization difference. Table 21 shows how the two variables attenuate the impact of each other. The addition on one day to length of stay increases the odds of a youth becoming involved in an SIR, but the magnitude of increase in odds diminishes as the difference between average and peak utilization (UTILDIFF) increases. A one day increase in length of stay increases the odds by 12% when there is a 3.5% difference between average and peak utilization. The increase in odds drops to 9.6% when the difference between average and peak utilization climbs to 15.4%.

Table 21

*Impact of LOS*UTILDIFF Interaction*

| Interaction | Odds Ratio |
|---|---|
| OR los x+1 / los x, utildiff=.035 | 1.121 |
| OR los x+1 / los x, utildiff=.085 | 1.110 |
| OR los x+1 / los x, utildiff=.154 | 1.096 |
| OR utildiff x+.01 / utildiff x, los=3 | 1.071 |
| OR utildiff x+.01 / utildiff x, los=9 | 1.059 |
| OR utildiff x+.01 / utildiff x, los=21 | 1.034 |

Length of stay has a similar effect upon the impact of UTILDIFF. The addition of one percent to the difference between average and peak utilization increases the odds of a youth becoming involved in an incident, but the magnitude of the increase in odds diminishes as length of stay increases. A one percent increase in UTILDIFF increases the odds by 7.1% when the length of stay is three days. The increase in odds drops to 3.4% when length of stay increases to twenty-one days.

The interaction between site category and length of stay had the next most powerful interaction in the final regression for ANY SIR ($F(2, 1400)=13.66$, $p<.0001$). The SITECAT variable also had significant interactions with UTILDIFF ($F(2, 1400)=10.7$, $p<.0001$) and DAICAT ($F(6, 1400)=2.1$, $p<.0497$). As previously stated, individual differences between sites explained more of the variation in ANY SIR than the site category (SITECAT) variable ($F(21, 1400)=15.84$, $p<.0001$). Calculating and reporting the interactions between LOS, UTILDIFF, DAICAT and twenty-two detention centers is beyond the scope of the current study. It should be noted here, however, that the impact of LOS, UTILDIFF and DAICAT vary by site and that differences among sites is substantial with a magnitude similar to the variables PRIORDET and TRANSFER.

The magnitude of the interaction between length of stay and age ($F(1, 1400)=9.67$, $p=0.0019$) was the next most powerful interaction. Like the interaction between LOS and UTILDIFF, the interaction between length of stay and age (INTAGE) had a negative beta (-0.00292) indicating that age had an inhibiting effect upon the impact of length of stay. This interaction is somewhat different from LOS*UTILDIFF because while both length of stay and utilization difference increase the odds of a youth becoming involved in an incident; INTAGE has a negative beta (-0.0029) indicating that increase in age *reduces* risk of involvement in incidents. As shown in Table 22, the addition of a day to length of stay increases the odds of a youth becoming involved in an SIR, but the magnitude of the increase in odds diminishes as age increases. The differences, however, are relatively small. While a one day increase in

Table 22

*Impact of LOS*INTAGE*

| Interaction | Odds Ratio |
|---|---|
| OR los x+1 / los x, age 13 | 1.087 |
| OR los x+1 / los x, age 15 | 1.080 |
| OR los x+1 / los x, age 17 | 1.074 |
| OR age x+1 / age x, los=3 | 0.845 |
| OR age x+1 / age x, los=9 | 0.830 |
| OR age x+1 / age x, los=21 | 0.801 |

length of stay for a thirteen year old youth increases the odds by 8.7%, the increase for a seventeen year old is only 7.4%.

Length of stay has the opposite influence on the impact of age. The addition of one year to a youth's age reduces the odds of a youth becoming involved in an incident and the magnitude of reduction in risk *increases* with longer lengths of stay. While a one year increase in age reduces the odds by 15.5% for a three day length of stay, the reduction in risk increases to 19.9% for a twenty-one day length of stay.

The interaction between length of stay and gender is similar in magnitude ($F(1, 1400)=8.44$, $p=.0037$) to the interaction between length of stay and age. While previous interactions involved continuous variables, this interaction is between a continuous and a dichotomous categorical variable. This interaction indicates that length of stay impacts the likelihood of being involved in an SIR differently for males than females. Because females are coded as the reference group the negative beta (-0.4255) indicates that males have a higher risk of being involved in an incident than females. As shown in Table 23, although a one day increase in length of stay increase the risk of involvement for both males and females, the one day increase raises the odds for females (14.5%) more than males (12.9%). A comparison of the odds of involvement of females and males at differing lengths of stay shows that while females are less likely to become involved in incidents, the difference between gender odds diminishes sharply as length of stay increases. While the odds for females are 32% smaller than for males when the length of stay is three days; females have only 26% lower odds to be involved when the

Table 23

*Impact of LOS*Gender*

| Interaction | Odds Ratio |
|---|---|
| OR los=x+1/los=x, females | 1.1448 |
| OR los=x+1/los=x, males | 1.1288 |
| OR females/males, los=3 | 0.6816 |
| OR females/males, los=9 | 0.7417 |

length of stay increases to nine days and the difference was not statistically significant at twenty-one days.

The interaction between LOS and TRANSFER is the smallest magnitude of the length of stay interactions ($F(1, 1400)=6.44$, $p<.0112$). The LOS*TRANSFER interaction presents the same pattern as the LOS*GENDER interaction. Like the LOS*GENDER interaction, this interaction is with a categorical variable with a negative beta (-3.9912). Youth who were not involved in a transfer (their placement originated in the current placement) were the reference category indicating that youth who were not transferred were at lower risk of involvement in an incident than youth who had been transferred from another site. As shown in Table 24, the addition of a one day length of stay increases the odds for no transfer youth (14.3%) more than transferred youth (12.9%). Similar to the pattern with gender, the difference between the two groups diminishes as length of stay increases. The decrease, however, is less dramatic suggesting that the protective impact of not being transferred is more robust than the protective impact of being female. No transfer youth with a three day length of stay were 40% less likely to be involved in an incident than transferred youth, while the difference diminished to 25% when length of stay increases to twenty-one days.

Table 24
*Impact of LOS*Transfer Interaction*

| Interaction | Odds Ratio |
|---|---|
| OR los=x+1/los=x, no transfer | 1.1428 |
| OR los=x+1/los=x, transfer | 1.1288 |
| OR no transfer / transfer, los=3 | 0.5975 |
| OR no transfer / transfer, los=9 | 0.6435 |
| OR no transfer / transfer, los=21 | 0.7462 |

When taken together, the following picture of the impact of length of stay emerges. Length of stay is the strongest predictor of whether a youth will become involved in an incident. Indeed of the seven other variables that are significant predictors of youth involvement in SIRs, five of them can not be understood apart from their interaction with length of stay. With the exception of age, length of stay served to moderate the impact of variables it interacted with.

Length of stay and the difference between average and peak utilization during placement both increase the risk of involvement as LOS and UTILDIFF increase. Increases in LOS and UTILDIFF, however, attenuate the impact of the other. Younger youth are at higher risk of involvement in than older youth, and the magnitude of the difference escalates as length of stay increases. Females and youth who were not transferred are at less risk of involvement than male or transferred youth, although these differences diminish as length of stay increases.

In addition to it's interaction with LOS, UTILDIFF also interacts with gender ($F(1, 1400)=13.72$, $p=.0002$). This interaction is the second most powerful interaction in the model. As can be seen in Table 25, this interaction is different from the LOS*GENDER interaction. While increases in LOS had a greater impact on females and the odds between males and females narrowed as LOS increased; a one percent increase in UTILDIFF increased the odds more for males (7.7%) than for females (3.5%). Furthermore, while the odds for females were 43% lower when there was a 3.5% difference between average and peak utilization, this difference expands to a 65% gap when the difference between average and peak utilization is 15.4 percent. Taken together the analysis UTILDIFF suggests that the difference between average and peak population at a detention center during a youth's placement is the second best predictive factor in the model. While the likelihood of a youth being involved in an incident rises as UTILDIFF increases, the UTILDIFF*LOS interaction moderates this impact. AS UTILDIFF increases, it accentuates difference in risk between females and males. Finally UTILDIFF interacts with SITECAT suggesting that UTILDIFF has a differential impact among sites.

Table 25

*Impact of UTILDIFF*GENDER*

| Interaction | Odds Ratio |
|---|---|
| OR utildiff x+.01 / utildiff x, females | 1.0352 |
| OR utildiff x+.01 / utildiff x, males | 1.0774 |
| OR females / males, utildiff=.035 | 0.5683 |
| OR females / males, utildiff=.085 | 0.4655 |
| OR females / males, utildiff=.154 | 0.3534 |

The impact of gender in the ANY SIR regression is contingent upon the variable's interaction with LOS and UTILDIFF. The interaction with UTILDIFF was the second most powerful interaction in the model, while the interaction effect with LOS was about half as strong. Females are at significantly lower risk of involvement in SIRs than males. As length of stay increases, the difference between females and males diminishes. As the difference between average and peak population during placement increases, the risk of males becoming involved in an incident becomes increasingly larger than the risk to females.

The interaction between DAICAT*PRIORDET ($F(3, 1400)=3.94, p=.0081$) makes a modest contribution to ANY SIR regression. This interaction is of particular interest because prior adjudications are included in the calculation of the DAI. It was thought that prior detentions would represent similar data to prior adjudications and that the information provided by prior detentions would be redundant and would not enter into the final equation. The DAICAT*PRIORDET interaction is between a continuous variable and a categorical variable with four categories. A comparison of the four different categories (high, medium, low, missing) and zero, one and two prior detentions yields a grid of eighteen different odds. As shown in Table 26, only half of these were statistically significant and all of these involved DAI category 2 (medium risk). The comparisons that were not significant are an important part of the picture. Fourteen percent of DAICAT scores were missing. It was decided to add a dummy category (4) for this missing data. Six of the eight non-significant comparisons involved comparisons with the missing data category. The

Table 26

*PRIORDET*DAICAT INTERACTION*

| Interaction | Odds Ratio |
|---|---|
| OR daicat=1 / daicat=2, priordet=0 | 0.5434 |
| OR daicat=1 / daicat=2, priordet=1 | 0.6237 |
| OR daicat=1 / daicat=2, priordet=2 | 0.7159 |
| OR daicat=2 / daicat=3, priordet=0 | 1.4324 |
| OR daicat=2 / daicat=3, priordet=1 | 1.3088 |
| OR daicat=2 / daicat=4, priordet=0 | 2.0243 |
| OR daicat=2 / daicat=4, priordet=1 | 1.7866 |
| OR daicat=2 / daicat=4, priordet=2 | 1.5769 |
| OR priordet=x+1/priordet=x, daicat 1 | 1.2621 |
| OR priordet=x+1/priordet=x, daicat 2 | 1.0995 |
| OR priordet=x+1/priordet=x, daicat 3 | 1.2033 |
| OR priordet=x+1/priordet=x, daicat 4 | 1.2458 |

purpose of including the missing category data is to not lose all the data from the other variables in cases where the DAI data is missing and yet still best be able to analyze the DAI data. Comparisons of odds ratios involving the missing category do not contribute to the analysis.

The statistically significant comparisons among non-missing DAI categories, though not complete, are of compelling interest. This risk of becoming involved in any SIR are greater for youth scoring in the medium category than in either the low *or* high category. As shown in Table 26, the risk of DAI low category youth were less than youth scoring medium, with the odds of low scoring youth being 46% lower than medium scoring youth with no previous detentions. The difference in odds decreased as prior detentions increased with low scoring youth having odds 28% lower than medium scoring youth at the two prior detention condition. Only the zero and one previous detention conditions were significant in the medium DAI/high DAI comparison. Youth scoring medium DAI were at *higher* risk than high DAI youth. Youth scoring medium with no previous detentions, were only 31% higher more likely for the one prior detention group. The comparisons examining the impact of adding one prior detention suggests that the addition of a prior detention raises the risk of becoming involved in an incident, but that the additional prior detention raises the odds of low DAI (26%) and high DAI (20%) much more than the medium DAI condition (10%). The addition of a prior detention was also significant under the missing DAI condition with a rise in odds (25%) similar to that of the high DAI condition.

The high numbers of missing DAI scores suggest that interpretation of these findings should be provisional, at best. This caution is underscored when one considers that DAICAT had the second lowest F statistic, and thus makes only a modest contribution to the explanatory power of the model. Still, that youth scoring medium would have a higher risk than youth scoring high is important. Departmental policy suggests that youth scoring in the medium range

should not be detained in secure confinement, but rather should be released from secure confinement and provided services that restrict them from either absconding or re-offending before adjudication. That the medium risk group that could be managed outside of secure confinement is at higher risk of being the subject of use of force than the group requiring secure confinement is consistent with the contention that secure confinement for this group is tantamount to punishment. As previously stated, all sides of the arguments concerning the constitutionality of pretrial confinement agree that punishment is an unconstitutional use of detention. That youth scoring low on the DAI have significantly lower odds of involvement in UOF SIRs, but are not significantly different from the risk of the high category group is also important. This finding suggests that there is some characteristic of the medium group that puts this group at a higher risk for UOF SIR involvement other than the factors identified in this study.

The profile of factors predictive of youth involvement in use of force incidents is comprised of factors specific to conditions of confinement and characteristics of individual youth. Factors reflecting conditions of confinement have the greatest predictive power. The longer youth remain in detention, the more likely youth are to be involved in a use of force episode. Youth who are placed in a detention center during a period when there are one or more days when the population at the center rises well above the center's average are more likely to be involved in a use of force incident. Length of stay and differences between average and peak utilization interact to moderate the rate of increase of the other.

These two conditions of confinement factors have such powerful predictive ability that individual characteristic factors can not be understood apart from their interaction with length of stay and the difference between average and peak population. Males are more likely than females

to become involved in an SIR and that likelihood increases as the difference between average and maximum population increases. Increases in length of stay, however, mitigates the gender odds difference. Younger youth are at higher risk of involvement in an SIR, but in contrast to the GENDER*LOS interaction, additional length of stay further increases the risk of younger detainees. This suggests that younger males are at particular risk, although no three-way interactions (LOS*GENDER*AGE) were tested in the analysis. Youth who were transferred to their current placement are at higher risk of involvement in an SIR than youth whose placement did not involve a transfer. The impact of transfers diminishes as length of stay increases. There are significant differences between sites, particularly in regard to the impact of length of stay, differences between average and peak utilization and the impact of DAI scores.

*Variables Predictive of Use of Force SIRs*

The same mixed-effects logistic regression process described in the ANY SIR section was used to model the data for incidents coded as Use of Force (UOF). Table 27 presents the variables and interaction effects that were retained in the final model for the UOF SIR dependent variable. The explanatory variables and interaction effects are sorted by F statistic to reflect the relative importance each variable made to the final equation. The variables retained in the UOF SIR equation are similar to the set retained

Table 27
*Variables Predictive of Involvement in Use of Force Incident & Interaction Effects*

| Variable | Numerator DF | Denominator DF | F Value | Pr > F |
|---|---|---|---|---|
| los | 1 | 1.40E+04 | 292.33 | <.0001 |
| utildiff | 1 | 1.40E+04 | 232.31 | <.0001 |
| site vs sitecat | 19 | 1.40E+04 | 13.14 | <.0001 |
| site | 21 | 1.40E+04 | 12.42 | <.0001 |
| priordet | 1 | 1.40E+04 | 7.66 | 0.0056 |
| gender | 1 | 1.40E+04 | 7.4 | 0.0065 |
| ethnic | 1 | 1.40E+04 | 6.08 | 0.0137 |
| daicat | 3 | 1.40E+04 | 3.65 | 0.0121 |
| age | 1 | 1.40E+04 | 2.88 | 0.0899 |
| Interaction | DF | DF | F Value | Pr > F |
| los*utildiff | 1 | 1.40E+04 | 262.59 | <.0001 |
| los*gender | 1 | 1.40E+04 | 15.8 | <.0001 |
| los*sitecat | 2 | 1.40E+04 | 11.02 | <.0001 |
| utildiff*gender | 1 | 1.40E+04 | 8.18 | 0.0042 |
| los*priordet | 1 | 1.40E+04 | 6 | 0.0143 |
| age*ethnic | 1 | 1.40E+04 | 4.92 | 0.0265 |
| priordet*daicat | 3 | 1.40E+04 | 2.9 | 0.0334 |

in the ANY SIR model. TRANSFER was retained in the ANY SIR but not in the UOF SIR model. ETHNIC was retained in the UOF model but not the ANY SIR. The F statistics for LOS and UTILDIFF were *much* higher than other variables, suggesting that all other retained variables made only modest contributions to the final model with the contributions made by DAICAT and INTAGE being particularly small.

The interaction effects are also similar. The LOS*UTILDIFF interaction is, by far, the most powerful interaction in both models. The UOF SIR model did not include the LOS*AGE, LOS*TRANSFER, and SITECAT*DAI interactions that were significant in the ANY SIR model. The UOF SIR model included AGE*ETHNIC and LOS*PRIORDET interactions that did not occur in the ANY SIR model.

As in the ANY SIR model, length of stay made the largest contribution to the UOF SIR model ($F(1, 1400)=292.33$, $p<.0001$). As was also the case with the ANY SIR model, most of the variables retained in the UOF SIR model can not be understood apart from their interaction with LOS. The LOS*UTILDIFF interaction ($F(1, 1400)=262.59$, $p<.0001$) dominates the UOF SIR equation. The LOS*UTILDIFF has a negative beta (-.01583) indicating that the interaction has an inhibitory dynamic. As can be seen in Table 28, the addition of one day length of stay increases the risk of becoming involved in a UOF SIR, but the magnitude of the increase in risk is ameliorated by increases in UTILDIFF. While a one day increase in length of stay increases the risk ratio by 6.8% when the difference between average and peak population is 3.5%; that increase drops to 4.8% when the difference between average and peak population rises to 15.4%. Similarly, the addition of 1% to the difference between

Table 28
*LOS*UTILDIFF INTERACTON*

| Interaction | Odds Ratio |
|---|---|
| OR los x+1 / los x, utildiff=.035 | 1.0677 |
| OR los x+1 / los x, utildiff=.085 | 1.0593 |
| OR los x+1 / los x, utildiff=.154 | 1.0478 |
| OR utildiff x+.01 / utildiff x, los=3 | 1.0912 |
| OR utildiff x+.01 / utildiff x, los=9 | 1.0809 |
| OR utildiff x+.01 / utildiff x, los=21 | 1.0606 |

average and peak population during a youth's placement causes the risk of involvement to rise, the increase in risk is ameliorated as length of stay increases. Under the three day length of stay condition the odds increases 9.1% while the increase drops to 6.1% as the length of stay rises to twenty-one days. The dynamic of this interaction mirrors the interaction in the ANY SIR model. An increase in LOS raises risk less in the UOF model than in the ANY SIR model while the impact of increase in UTILDIFF is greater.

The next most powerful interaction in the UOF SIR model is the LOS*GENDER interaction ($F(1, 1400)=15.8$, $p<.0001$). The impact of an additional day to a placement length of stay is similar, thought less pronounced, to the impact this interaction has on the risk of becoming involved in ANY SIR. As shown in Table 29, the addition of one day raises the risk of involvement in a UOF, but raises the odds more for females than males. At the three day length of stay condition, females are 35% less likely to become involved in a UOF SIR than males. This is comparable to the protective factor for females seen in the ANY SIR regression (-32%). Unlike the ANY SIR regression, however, the risk to males and females of becoming involved in a UOF SIR is not significantly different at the nine and twenty-one day length of stay conditions. This data supports the conclusion that females are at lower risk the males of becoming involved in an incident involving the use of force when they are first detained but that after a short period of time, the risk to females is not different from the risk to males.

Table 29

*LOS*GENDER INTERACTON*

| Interaction | Odds Ratio |
|---|---|
| OR los=x+1/los=x, females | 1.0956 |
| OR los=x+1/los=x, males | 1.0737 |
| OR females/males, los=3 | 0.6499 |

The SITECAT*LOS interaction was the next most important interaction ($F(2, 1400)=11.02$, $p<.0001$). ). As with the ANY SIR variable, individual differences between sites explained more of the variation in UOF SIR than the SITECAT variable. The impact of length of

stay on the likelihood of a youth becoming involved in a UOF SIR differed among centers. Unlike ANY SIR, there was no significant SITECAT*UTILDIFF interaction in the UOF SIR model. An exploration of differences between individual sites is beyond the scope of this research.

Length of stay also had a relatively weak interaction ($F(1, 1400)=6$, $p=0.0143$) with prior detentions. This interaction has a weak negative beta of -0.00135, indicating that LOS and PRIORDET have a moderating impact on each other. The impact, though statistically significant, is small. As shown in Table 30, a change form a zero prior detention condition to a two prior detention condition lowers the odds measuring the impact of adding one day to length of stay by only three tenths of one percent. Length of stay has a stronger moderating impact on prior detentions with the odds comparing the impact of adding a prior detention dropping the odds by three percent.

Table 30
*LOS*PRIORDET INTERACTON*

| Interaction | Odds Ratio |
|---|---|
| OR los x+1 / los x, priordet=0 | 1.0737 |
| OR los x+1 / los x, priordet=1 | 1.0722 |
| OR los x+1 / los x, priordet=2 | 1.0708 |
| OR priordet x+1 / priordet x, los=3 | 1.2163 |
| OR priordet x+1 / priordet x, los=9 | 1.2065 |
| OR priordet x+1 / priordet x, los=21 | 1.1871 |

When all the interactions involving length of stay are considered, the following picture emerges. Length of stay has similar impact on the ability to predict youth involvement in use of force incidents as it had with the ability to predict youth involvement in any incident. The likelihood of youth becoming involved in UOF SIRs increases as length of stay increases. As with ANY SIR, the impact of length of stay was moderated by increases in the UTILDIFF variable. The impact of length of stay was also moderated as the number of prior detentions increased, albeit slightly. Females are at lower risk of involvement in a UOF SIR when the length of stay is three days or less, but the differences in risk between males and females is not significant when the length of stay rises to either the nine or twenty-one day condition. The

impact of length of stay varies by site. A one day increase in length of stay did not increase the risk of involvement in a UOF SIR as much as it raised the risk of involvement in ANY SIR. With UTILDIFF set at .035, for example, a one day addition to length of stay raised the risk of involvement in ANY SIR by 12.1%. Under the same conditions an addition of one day raised the odds of involvement in a UOF SIR by only 6.8%.

Table 31
*UTILDIFF*GENDER INTERACTON*

| Interaction | Odds Ratio |
|---|---|
| OR females / males, utildiff=.035 | 0.5401 |
| OR females / males, utildiff=.085 | 0.4522 |
| OR females / males, utildiff=.154 | 0.3538 |
| OR utildiff x+.01 / utildiff x, females | 1.0581 |
| OR utildiff x+.01 / utildiff x, males | 1.0964 |

The impact of the UTILDIFF*GENDER interaction ($F(1, 1400)=8.18$, $p=.0042$) was less than the impact of the LOS*SITECAT interaction but larger than the LOS*PRIORDET interaction. As can be seen in Table 31, UTILDIFF had a differential impact on gender. As with the risk of involvement with ANY SIR, the addition of 1% to the difference between average and peak population increases the odds of male involvement in a UOF SIR more than females. The addition of 1% to UTILDIFF raises the risk of involvement in a use of force incident more than under the ANY SIR condition. As with ANY SIR, the difference in risk between genders increases as UTILDIFF increases.

The interaction between INTAGE*ETHNIC was the next most powerful interaction in the model ($F(1, 1400)=4.92$, $p=.0265$). Ethnicity was not a significant factor in the ANY SIR model. As can be seen by Table 32, the addition of one year to age lowers the risk of involvement in UOF SIRs by 21%. Age was not a significant factor in predicting the involvement of whites in UOF SIRs. Minorities were *much* more likely to be involved in UOF incidents than whites at age 13 (64%). The difference drops to minorities being 24% more likely to be involved in UOF incidents at age fifteen. There is no significant difference between minorities and whites at age seventeen.

Table 32
*INTAGE*ETHNIC2 INTERACTON*

| Interaction | Odds Ratio |
|---|---|
| OR age x+1 / age x, minorities | 0.7934 |
| OR minorities/whites, age=13 | 1.6358 |
| OR minorities/whites, age=15 | 1.2378 |

The PRIORDET*DAICAT interaction is the weakest interaction in the model ($F(3, 1400)=2.9$, $p=.0334$) and is also the weakest interaction in the study. As shown in Table 33, the addition of a prior detention raises the likelihood of a youth becoming involved in a UOF SIR but, in a pattern similar to the ANY SIR model, the risk is raised more for youth in the low and high DAI category more than for youth scoring medium. More DAI category interactions were significant than in the ANY SIR model, establishing significant differences in the risk to low and medium scoring youth and low and high scoring youth. The risk to youth scoring in the low category was less than the risk for medium DAI youth and less for low scoring youth than youth in the high DAI group. In both instances the addition of a prior detention reduced the difference in risk ratios. There were significant differences between the medium and high DAI group and the missing data group.

Table 33

*PRIORDET*DAICAT INTERACTON*

| Interaction | Odds Ratio |
|---|---|
| OR daicat=1 / daicat=2, priordet=0 | 0.6854 |
| OR daicat=1 / daicat=2, priordet=1 | 0.7848 |
| OR daicat=1 / daicat=3, priordet=0 | 0.7411 |
| OR daicat=1 / daicat=3, priordet=1 | 0.7724 |
| OR daicat=2 / daicat=4, priordet=0 | 1.6612 |
| OR daicat=2 / daicat=4, priordet=1 | 1.5898 |
| OR daicat=2 / daicat=4, priordet=2 | 1.5215 |
| OR daicat=3 / daicat=4, priordet=0 | 1.5365 |
| OR daicat=3 / daicat=4, priordet=1 | 1.6152 |
| OR daicat=3 / daicat=4, priordet=2 | 1.6979 |
| OR priordet=x+1/priordet=x, daicat 1 | 1.3381 |
| OR priordet=x+1/priordet=x, daicat 2 | 1.1688 |
| OR priordet=x+1/priordet=x, daicat 3 | 1.2838 |
| OR priordet=x+1/priordet=x, daicat 4 | 1.2212 |

As in the risk ANY SIR profile, the profile of factors predictive of youth involvement in use of force incidents is comprised of factors specific to conditions of confinement and characteristics of individual youth. Factors reflecting conditions of confinement have the greatest predictive power. The longer youth remain in detention, the more likely youth are to be involved in a use of force episode. Youth who are placed in a detention center during a period when there are one or more days when the population at the center rises well above the center's average are more likely to be involved in a use of force incident. Length of stay and differences between average and peak utilization interact to moderate the rate of increase of the other.

These two conditions of confinement factors have such powerful predictive ability that individual characteristic factors can not be understood apart from their interaction with length of stay and the difference between average and peak population. The likelihood of a youth being involved in a use of force incident increases as the number of previous detention placements for that youth increases. The rate of increased risk falls somewhat as length of stay increases. Males are more likely to become involved in a use of force incident, most particularly during placements with short lengths of stay when the difference between average and peak utilization is higher. Minority youth less than seventeen years of age are more likely to be involved in use of force incidents than white youth. Youth who score in the DAI low category (immediate release without additional services recommended) are at lower risk of involvement that youth scoring medium or high; although the risk of low scoring youth increases as prior detentions increases. An increase in the number of prior detentions raises the risk for youth scoring medium less than youth score low or high. All of these factors vary significantly by individual site.

*Variables Predictive of Self-Harm SIRs*

The same mixed-effects logistic regression process described in the ANY SIR section was used to model the data for incidents coded as self-harm incidents. Table 34 presents the variables and interaction effects that were retained in the final model for the Self-Harm SIR dependent variable. The explanatory variables and interaction

Table 34
*Variables Predictive of Involvement in Self-Harm Incident & Interaction Effects*

| Variable | Numerator DF | Denominator DF | F Value | Pr > F |
|---|---|---|---|---|
| utildiff | 1 | 1.40E+04 | 67.06 | <.0001 |
| priordet | 1 | 1.40E+04 | 56.82 | <.0001 |
| ethnic | 1 | 1.40E+04 | 27.23 | <.0001 |
| los | 1 | 1.40E+04 | 24.11 | <.0001 |
| age | 1 | 1.40E+04 | 9.71 | 0.0018 |
| gender | 1 | 1.40E+04 | 7.81 | 0.0052 |
| site vs sitecat | 19 | 1.40E+04 | 4.64 | <.0001 |
| site | 21 | 1.40E+04 | 4.26 | <.0001 |
| daicat | 3 | 1.40E+04 | 2.7 | 0.0441 |
| Interaction | DF | DF | F Value | Pr > F |
| los*utildiff | 1 | 1.40E+04 | 69.22 | <.0001 |
| gender*ethnic | 1 | 1.40E+04 | 12.14 | 0.0005 |
| age*gender | 1 | 1.40E+04 | 6.24 | 0.0125 |
| los*age | 1 | 1.40E+04 | 5.8 | 0.016 |
| los*gender | 1 | 1.40E+04 | 4.57 | 0.0325 |

effects are sorted by F statistic to reflect the relative importance each variable made to the final equation.

The same variables that were predictive of the ANY SIR and UOF SIR regression enter into the SELF-HARM SIR regression, but the relative strengths and risk profile are different. Like the other regressions, the LOS*UTILDIFF interaction was the most powerful interaction ($F(1, 1400)=69.22$, $p<.0001$. Unlike the other models, UTILDIFF was the stronger variable in the interaction with LOS having an F statistic less than half that of UTILDIFF. While LOS had the largest F statistic of any explanatory variable in the ANY SIR and UOF SIR models, it was only the fourth most powerful variable in the SELF-HARM SIR model with UTILDIFF, PRIORDET, and ETHNIC scoring higher respectively. As shown in Table 35, the dynamic of the LOS*UTILDIFF interaction presents the same pattern as before. Increases in length of stay and the difference between average and peak population both increase the odds of involvement; but LOS and UTILDIFF moderate the impact of each other. The increase in odds when a one day length of stay is added is *very* similar to the impact in the ANY SIR regression. While a one day addition to LOS increases the odds of involvement in ANY SIR by 12.1% in .035 UTILDIFF condition, the odds increase for self harm incidents rose by 12.3%. When the difference between average and peak population rises to 15.4% the increase in odds for ANY SIR was 9.6% while the increase for SELF-HARM was 10.2%. Differences in average and peak population had a stronger impact than in the ANY SIR regression with a 1% increase in utilization resulting in a 8.9% increase in odds at the three day length of stay condition, dropping to a 5.9% increase at the twenty-one day length of stay condition.

Table 35
*LOS*UTILDIFF Interaction*

| Interaction | Odds Ratio |
|---|---|
| OR los x+1 / los x, utildiff=.035 | 1.1231 |
| OR los x+1 / los x, utildiff=.085 | 1.1144 |
| OR los x+1 / los x, utildiff=.154 | 1.1025 |
| OR utildiff x+.01 / utildiff x, los=3 | 1.0885 |
| OR utildiff x+.01 / utildiff x, los=9 | 1.0784 |
| OR utildiff x+.01 / utildiff x, los=21 | 1.0585 |

The next most powerful factor in the SELF-HARM regression was the impact of prior detentions ($F(1, 1400)=56.82$, $p<.0001$). As shown in Table 36, the addition of a prior detention raises the odds of a youth becoming involved in self-harm incident by 26.8%. The PRIORDET variable was not involved in an interaction, indicating that this large increase in odds of involvement in a self-harm incident is not significantly impacted by length of stay, differences between average and peak utilization, age, ethnicity or DAI score.

Table 36
*Impact of PRIORDET*

| Interaction | Odds Ratio |
|---|---|
| OR priordet x+1 / priordet x | 1.268 |

The GENDER*ETHNIC interaction is the next most powerful interaction in the self-harm model ($F(1, 1400)=12.14$, $p=0005$). As shown in Table 37, there were significant differences between males and females and between minorities and whites. White males are 63% more likely to become involved in a self-harm incident than minority males. White males were 99.7% more likely to become involved in a self-harm incident than white females. Minority males were 98.8% more likely to become involved in a self-harm incident than minority females. There was no significant difference between minority and white females. Self-harm incidents were much rarer than the other incident categories in the study. While 12.9% of all placements were involved in some sort of incident and 7.3% of all placements were involved in use of force incidents; only 1.4% of all placements involved a report of self-harm. It may well be that the dramatic differences in odds reported in this interaction is a reflection of changes in a low base rate phenomenon. Even so, the vulnerability of white youth, in comparison to the rest of the detained population, is a particularly compelling finding.

Table 37
*Impact of GENDER*ETHNICITY*

| Interaction | Odds Ratio |
|---|---|
| OR minority males/ white males | 0.3657 |
| OR minority females/ minority males | 0.0121 |
| OR white females/ white males | 0.0033 |

The AGE*GENDER interaction is the next most powerful interaction in the model ($F(1, 1400)=6.24$, $p=.0125$). As shown in Table 38, the addition of one year to age lowers the odds of involvement in a self-harm incident by 23.5%. The addition of one year to females does not make a statistically significant difference in the odds of female involvement. At age thirteen, males are 73.1% more likely to be involved in a self-harm incident than females.

Table 38

*Impact of INTAGE*GENDER*

| Interaction | Odds Ratio |
|---|---|
| OR age x+1 / age x, males | 0.7648 |
| OR females/males, age=13 | 0.2688 |

The next most powerful interaction is the LOS*AGE interaction ($F(1, 1400)=5.8$, $p=.016$) and has a negative beta of -0.00382. As was the case for this interaction in the ANY SIR regression, Table 39 demonstrates that while the addition of one day to length of stay increases the odds of involvement in a self-harm incident; the magnitude of increase is ameliorated by increase in age. While the addition of one year to age decreases the odds, the protective impact of increasing age escalates (slightly) as length of stay increases.

Table 39

*Impact of LOS*INTAGE*

| Interaction | Odds Ratio |
|---|---|
| OR los x+1 / los x, age 13 | 1.0745 |
| OR los x+1 / los x, age 15 | 1.0664 |
| OR los x+1 / los x, age 17 | 1.0583 |
| OR age x+1 / age x, los=3 | 0.7561 |
| OR age x+1 / age x, los=9 | 0.7390 |
| OR age x+1 / age x, los=21 | 0.7059 |

The LOS*GENDER interaction is the least powerful interaction in the model ($F(1, 1400)=4.57$, $p=.0325$). Consistent with the AGE*Gender and GENDER*ETHNICITY interactions, Table 40 shows that females are at far lower risk of involvement in self-harm incidents than males, but that the differences between odds of males and females decreases as length of stay increase.

Table 40

*Impact of LOS*GENDER*

| Interaction | Odds Ratio |
|---|---|
| OR females/males, los=3 | 0.00345 |
| OR females/males, los=9 | 0.00372 |
| OR females/males, los=21 | 0.00432 |
| OR los=x+1/los=x, females | 1.1434 |
| OR los=x+1/los=x, males | 1.1292 |

While there were significant differences in risk of involvement in self-harm incidents among sites ($F(22, 1400)=4.26$, $p<.0001$), these differences were less important than in other regressions. While the F statistic for differences among sites was the third in the UOF regression

and the fourth highest in the ANY SIR regression, site was only the eighth highest F statistic in the SELF-HARM regression.

DAICAT was the least powerful variable in the self-harm regression ($F(3, 1400)=2.7$, $p=.0441$). The only significant difference between the odds of in the DAICAT variable was between the high and missing categories. This distinction is not useful in establishing the risk profile of youth of youth involved in self-harm incidents.

The risk profile of youth involved in self-harm incidents is simple and compelling. Younger white males are at much higher risk than other detained youth and that risk increases as length of stay, difference between average and peak population and prior detentions increase. Minority males are at higher risk than females. There are significant differences among sites in odds of youth becoming involved in a self-harm incident, but these differences are less than the differences found in the ANY SIR or UOF SIR regressions.

### *Hypothesis Results*

In this section we will review the hypothesis presented in Chapter Three and examine the evidence of independent variables to predictive involvement in the three categories of incidents. Table 41 presents the results that were hypothesized in Chapter 3 and the actual study results. Variables are sorted in descending order of F statistic size.

Table 41
*Hypothesized & Actual Results*

| | Any SIR | | Use of Force | Self Harm |
|---|---|---|---|---|
| Variable | Posited | Result | Result | Result |
| LOS | ↑ | ↑ | ↑ | ↑ |
| CUMLOS | ↑ | **not tested** | **not tested** | **not tested** |
| UTILLDIFF | — | ↑ | ↑ | ↑ |
| MAXUTILL | ↑ | — | — | — |
| AVGUTILL | ↑ | — | — | — |
| INTAGE | ↓ | ↓ | ↓ | ↓ |
| SITE | — | **significant** | **significant** | **significant** |
| SITECAT | **ns** | ** | ** | ** |
| PRIORDET | ↑ | ↑ | ↑ | ↑ |
| TRANSFER | ↑ | ↑ | **ns** | **ns** |
| GENDER | **m>f** | **m>f** | **m>f** | **m>f** |
| DAICAT | **lo>hi** | **lo<hi<med** | **lo<hi<med** | **ns** |
| ETHNICITY | **minorities> whites** | **ns** | **minorities>whites** | **minorities<whites** |
| MSO* | **ns** | **not tested** | **not tested** | **not tested** |

*Most Serious Offense
**Significant, but Site a better indicator

Where variables stated in the hypotheses were not included in the final regressions (AVGUTIL, MAXUTIL, SITECAT); these variables are grouped with the variables that were substituted for them.

*Length of Stay Results*

It was hypothesized that both placement length of stay (LOS) and cumulative length of stay (CUMLOS) would be significant factors in the ANY SIR regression and that risk of involvement would increase as the two indicators of length of stay increased. It was further posited that cumulative length of stay would have a higher test statistic than length of stay. Preliminary tests suggested that cumulative length of stay was not significant and was not considered for the final model. The hypotheses that Cumulative Length of Stay would be a significant predictor of involvement in the ANY SIR regression and that it would have a larger F statistic than the Placement Length of Stay are not confirmed. Placement length of stay was significant and the regression results confirm that risk of involvement in any incident increases as placement length of stay increases.

LOS was a significant factor in all three regressions. LOS was the strongest predictor (highest *F* statistic) in the ANY SIR and UOF SIR models while it was only the fourth strongest factor in the Self-Harm model. The impact of adding a day to length of stay varied somewhat between models. The interaction with UTILDIFF serves as a good basis for comparison as this was the most powerful interaction in all three models. As shown in Table 42, the addition of a one day length of stay under the .035 UTILDIFF condition increases the odds of a youth being involved in any incident or a self-harm incident by 12% but increases the odds by only 7% in use of force

Table 42
*Comparison of Impact of Adding One Day to Length of Stay*

| UTILDIFF | ANY SIR | UOF SIR | Self-Harm |
|---|---|---|---|
| utildiff=.035 | 12% | 7% | 12% |
| utildiff=.085 | 11% | 6% | 11% |
| utildiff=.154 | 10% | 5% | 10% |

incidents. The increase in risk drops by 1% in each regression as the difference between average and peak population (UTILDIFF) rises.

Another way to understand the impact on length of stay is to look at how it interacts with other factors. The fact that there are so many significant interactions with length of stay is itself a reflection its pervasive impact. LOS had significant interactions with GENDER and UTILDIFF in all three models and with AGE in the ANY SIR and SELF-HARM models. With the exception of age, length of stay has the impact of moderating the rate of increase in risk posed by other factors as length of stay increases. Put another way, as length of stay increases, the impact of length of stay tends to engulf the impact of other factors. Females are 32% less likely to become involved in any incident, for example, when the length of stay is three days. When the length of stay increases to nine days, however, females are only 26% less likely to be involved in an SIR. When the length of stay increases to twenty-one days, the difference in odds is not statistically significant. Age is an important exception to this pattern. Younger youth are more likely to become involved in an incident than older youth and that likelihood *increases* as length of stay increases.

It is important to note that the impact of odds is cumulative. A youth with a two day placement length of stay experiences the risk of involvement in an SIR on the first and second day. Each additional day adds the risk of that day to the accumulated risk of days that preceded it. Length of stay had a beta of 0.1211 in the ANY SIR model, indicating that a one day increase of length of stay increases the log odds of involvement in an SIR by 12.9%. A 12.9% increase in the odds of being involved in an incident with the addition of one day to length of stay compounds quickly over a relatively short period of time. Let us consider youth with placement lengths of stay between nine and fourteen days to illustrate the cumulative impact. Figure 6

shows the percentage of males and females involved in any SIR when the placement length of stay was less than or equal to nine days, increasing to placement length of stay less than or equal to fourteen days. While the percentage of both males and females involved in SIRs increased progressively across the period; the increase for males (a 93% increase) was much greater than for females (a 57% increase).

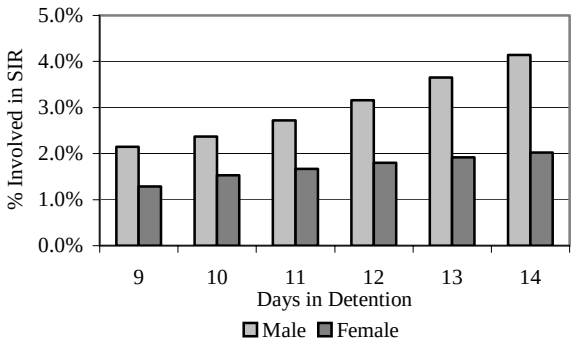



Figure 6
*Cumulative Impact of Length of Stay for Males & Females Using ANY SIR Varaible*

The reason for this is apparent. There were 161 males with placement lengths of stay of nine or fewer days that were involved in SIRs. Twenty-five males with a ten day length of stay were involved in SIRs. So the number of males with lengths of stay less than or equal to ten days involved in SIRs equals 186 (161+25). This is different from other variables that either identify categories (male *or* female, placement originated at the current placement or is a transfer) or are continuous variables that identify unique conditions that are not cumulative. A UTILDIFF value of .085, for example, does not subsume the .035 UTILDIFF value in the way a placement length of stay of three days represents the accumulated risk of all three days. Although UTILDIFF, like length of stay, is a continuous variable, an 8.5% difference between average and peak population does not include the risk of the 3.5% condition, it is uniquely different from the 3.5% condition.

The powerful impact of length of stay has policy implications. Obviously, the risk of being involved in an incident is zero when the length of stay is zero. The act of detaining youth place youth at risk of becoming involved in SIRs and that risk increases as length of stay increases. Detaining youth who are not a risk to re-offend or abscond before adjudication places

the State in the position of placing a youth at a known and increasing risk of harm without achieving any demonstrable state interest that has been shown to be constitutionally defensible. Eighteen percent of all detention days provided during the time period covered by this study were provided to youth who scored in the low range on the DAI. As of October 14, 2004, Georgia Department of Juvenile Justice policy 20.8 (Detention Decision and Monitoring) states that "Youth who score low or medium on the DAI should not be considered for secure detention. These youth should placed in the least restrictive and most appropriate non-secure detention alternative or, where feasible, unconditional release. (Georgia Department of Juvenile Justice, 2004, p. 3)." From a policy standpoint the way to eliminate the risk of becoming involved in an adverse incident for eighteen percent of all detentions days provided by the State of Georgia from July 1, 2001 to June 30, 2002 is clear.

An examination of the interaction effects between length of stay and most other variables suggests that the increase of risk to youth is greatest when length of stay is low. A one percent increase between average and peak population increases the risk of involvement in an SIR by 7% for youth with a three day length of stay but only by 3% for youth who have been for twenty-one days. The same dynamic takes place in the interactions with gender and transfer. The Department has a program to expedite youth medium risk youth out of detention and into less restrictive placements that address the risks to re-offend and/or abscond that have been identified. Beyond the cumulative impact of length of stay, moving these youth out of detention as quickly as possible moves them during a period when the increase in risk to youth increases at the greatest rate.

*Difference Between Average & Peak Population Results*

It was hypothesized that both average utilization and maximum utilization would significantly increase the odds of a youth becoming involved in an incident but that average utilization would have the higher *F* statistic. Given the finding that the difference between these two variables did a better job of modeling the data than either variable, it is difficult to evaluate this hypothesis. On one hand, in that the information from both variables was combined into a different, more powerful variable; one could argue that both variables were shown to be significant predictors in the hypothesized direction. On the other hand, in that neither variable was retained in the final model, it does not seem reasonable to assert that the hypotheses were confirmed. Because neither variable was retained in the final model, it is not possible to evaluate which variable had the higher *F* statistic.

The two configurations for overcrowding were included because it was not known which characteristic of overcrowding was critical. The discovery that neither the average utilization over the course of a youth's placement nor the peak population accounts for as much variation in the data as *the difference between the two* is important. The UTILDIFF variable had the largest *F* statistic in the SELF-HARM regression and the second largest *F* statistic in the other two regressions. Like length of stay, UTILDIFF can not be understood apart from its interaction with other variables. As shown in Table 43, UTILDIFF had more impact on the likelihood of involvement in use of force and self-harm episodes, but had a substantial impact upon the ANY SIR regression as well. The

Table 43
*Comparison of Impact of Adding 1% to Difference Between Average and Peak*

| LOS | ANY SIR | UOF SIR | Self-Harm |
|---|---|---|---|
| los=3 | 7% | 9% | 9% |
| los=9 | 6% | 8% | 8% |
| los=21 | 3% | 6% | 6% |

GENDER*UTILDIFF interaction was significant in both the ANY SIR and UOF SIR regressions. Table 44 presents the differential impact UTILDIFF on males and females in these two models. The odds for males increase almost twice as much as females in both regressions.

Table 44
*Comparison of Impact of Adding 1% to Difference Between Average and Peak*

| Gender | ANY SIR | UOF SIR |
|---|---|---|
| Female | 4% | 6% |
| Male | 8% | 10% |

UTILDIFF may reflect the impact that fluctuations in detention population have upon rigid staffing patterns. Detention Centers are staffed at ratios agreed to by the Department and the U. S. Department of Justice as part of the MOA. Detention Centers do not have a "reserve' of officers that they can bring in if the population rises. The same number of officers has to provide security whether the daily population is 80% of capacity or 120% of capacity. The UTILDIFF variable may indicate that staff experience increasing difficulty preventing incidents as the difference between the typical population level and days when the population is well above what is typical. It is important to note that this variable does not necessarily indicate some "magic utilization" above which incidents become much more likely. This variable suggests that a 30 bed center that averages 23 youth and has a period where the population rises to 27 would experience approximately the same rise in incidents that a 64 bed center that averages a population of 64 but has a period where the population rises to 73. While one center went from 77% of capacity to 90% of capacity and the other center went from 100% capacity to 114% capacity, the percent difference between average and peak was similar. Although the "peak" period usually did involve overcrowding (the average of MAXUTIL was 109%), it appears that administrators should focus on the volatility of detention population levels more than overcrowding per sea.

*Age Results*

It was posited that age would be a significant factor in the ANY SIR regression and that the risk of becoming involved in an incident would decrease as age increased. This hypothesis is confirmed. Age was a significant predictor in all regressions, but the importance of its contribution varied. Age was the third highest *F* statistic in the ANY SIR regression, the fifth highest in the SELF-HARM regression and the eighth highest in the UOF regression. The reduction in odds that result in a one year addition to age are dramatic, particularly in regard to self-harm. As shown in Table 45, the addition of one year to age reduces the odds of self-harm by 24% at the los=3 days condition and this reduction rises to 29% when the length of stay rises to 21 days. Younger youth are at dramatically higher risk of becoming involved in an incident than older youth. The degree of this disproportionate risk to young detainees *increases* as length of stay increases. The increase in risk of younger detainees engaging in self-harm behavior is greater than the increase in risk of involvement in incidents in general.

Table 45

*Comparison of Impact of Adding 1 Year to Age at Differing Lengths of Stay*

| LOS | ANY SIR | Self-Harm |
|---|---|---|
| los=3 | -16% | -24% |
| los=9 | -17% | -26% |
| los=21 | -20% | -29% |

*Site Size Results*

This study posited that when “Site Size” is entered into a logistic regression with all other independent variables listed in this section with “Any SIR” as the dependent variable, then Site Size will be a not significant factor. Although the results do not afford a direct judgment, this hypothesis is not confirmed. This study found that difference among individual sites did a better job of modeling the data than the SITECAT variable that grouped sites by size. The variable SITE was significant in all three regressions. Interactions with SITE suggest that the impact of length of stay varies by site in regard to predicting the occurrence of any incident and use of

force incidents. The impact of differences between average and peak utilization and the impact of DAI scores vary by site when predicting whether a youth will become involved in any incident during placement. Administrators at the Georgia Department of Justice receive reports by site on the incident rates of all major incident types. These reports highlight sites that are outside of a one standard deviation system average and form a good basis for identifying and tracking sites whose rates are particularly high.

*Prior Detention Results*

This study had two hypotheses about the impact of prior detentions. The study posited that prior detentions would be a significant factor with a negative beta. This hypothesis is not confirmed. Prior detentions was a significant predictor of involvement in all three regressions, but the beta was *positive*. The study also posited that prior detentions would have lower *F* statistic than DAI scores. This hypothesis was also not confirmed. Prior detentions had the fifth highest *F* statistic in the ANY SIR regression, the fourth highest in the UOF regression and the second highest in the SELF-HARM regression. While DAI scores were significant in all three models; DAI scores were either the weakest factor or the next to weakest factor.

The relationship between DAI scores and prior detentions is important to the study. Prior detentions interacts with DAI scores in the ANY SIR and UOF SIR models. The addition of a prior detention increased the likelihood of becoming involved in all three categories of incidents. As shown in Table 46, an increase in prior detentions increases the risk of involvement in both the ANY SIR and UOF regressions. The magnitude of increase in odds varies by DAI score. An increase of one prior detention also raises the odds of involvement in self-harm incidents, but the risk does not interact with DAI scores in the

Table 46
*Comparison of Impact of Adding 1 Prior Detention at Differing DAI Scores*

| LOS | ANY SIR | UOF SIR |
|---|---|---|
| DAI=Low | 26% | 34% |
| DAI=Medium | 10% | 17% |
| DAI=High | 20% | 13% |

SELF-HARM regression. Prior detentions is, in fact, the only instance in the entire study where a variables does not have a significant interaction with any other variable. An increase on one prior detention raises the odds of involvement in a self-harm incident by 26.8%.

The interaction with DAI scores and the fact that PRIORDET has a higher *F* statistic than DAICAT in all three models is surprising. Prior adjudications are part of the calculation of the DAI score. It was thought that the data from previous adjudications would be quite similar to previous detentions as many adjudicated youth are detained. It was expected that because DAI combines data on previous adjudications, current offenses, and previous instances of failure to appear in court, that DAICAT would explain more of variation than PRIORDET. Further implications of this are pursued in the "DAI Score Results" section.

That prior detention is a better predictor of involvement in incidents than DAI scores has parsimonious benefits. At least within the Georgia JTS database, prior detentions are a simpler and more reliable calculation than DAI scores. The items that are used to calculate the DAI are identified by the user and input by hand. Whether the number of previous detention and accurate previous offense data is accurately entered into the DAI worksheet is subject to considerable user error. The legal history of youth adjudicated in courts where DJJ does not perform court services are not as reliable as those where DJJ employees perform as court service workers. This is another source of error within DAI scores. Because DJJ is the only provider of detention services in Georgia, the number of prior detentions is accurately represented within the database. The results of this study suggest that prior detentions should be part of the classification of detained youth. This finding may not generalize to other states that do not have a statewide detention system that is as thoroughly integrated as Georgia's. Data on previous detentions would likely be less reliable in states that do not have a single, shared database to track detention placements.

*Transfers Results*

This study posited that youth who have been transferred from another detention center previous to their current placement would be significantly more likely to become involved with an SIR than youth who have remained at their initial placement during a detention episode. This hypothesis is confirmed. Youth who were transferred to their current placement from another detention center were more likely to be involved in an incident than youth who had not been transferred. The TRANSFERS variable was not a significant predictor of UOF incidents or SELF-HARM incidents. In the ANY SIR model transfers were 40% more likely to become involved in an incident at a three day length of stay, but only 25% more likely when the length of stay rose to twenty-one days.

The significant increase risk of involvement in SIRS for transferred youth, especially those who remain at the transferred center for a short length of time, would appear to be important. The fact that this is only true for the ANY SIR condition casts doubt on how robust this finding is. The Department of Juvenile Justice should consider, however, that the practice of transferring youth to control population is not without cost. Transferring youth is practical mechanism for mitigating the large swings in center population that drive the UTILDIFF risk. The results of this study confirm that while transferring students may mitigate the UTILDIFF risk, the practice creates other risks.

*Gender Results*

This study posited that when gender is entered into a logistic regression with all other independent variables listed in this section with “Any SIR” as the dependent variable, males will be at significantly higher risk of involvement in “Any Sirs than females. This hypothesis is confirmed. Although gender was a significant factor in all three regressions, it was a relatively

weak factor. Gender had the fifth highest *F* statistic in the UOF regression, the sixth highest in SELF-HARM and the seventh highest in the ANY SIR regression.

While gender may not make a large contribution to explaining variation within the data, the most powerful factors in two of the regressions have a differential impact on the risk to males and females. As discussed in the Length of Stay discussion, females are at lower risk of involvement in all three categories of incidents and the disparity decreases with longer lengths of stay. At the three day length of stay condition females were about 35% less likely to become involved in any incident or use of force incident. Females were only 12% less likely to be involved in any incident at the twenty-one day length of stay condition. There were no significant differences between males and females above the 3 day length of stay condition for use of force incidents. The gender disparity in risk regarding self-harm behaviors is extreme, with females were 99.7% less likely than males to be involved in self-harm incidents.

The impact of differences between average and peak utilization on gender are more robust. As shown in Table 47, females are about 45% less likely than males to be involved in any incident or use of force incidents when the length of stay is three days. The difference rises to 65% as length of stay increases to twenty-one days. If it is true that the impacts of UTILDIFF are driven by staffing patterns; administrators who have an ability to bring in extra staff when the center population rises significantly above normal would do well to direct extra staffing toward the male housing units first.

Table 47
*Comparison of Female to Male Odds of Involvement At Differeing UTILDIFF*

| LOS | ANY SIR | UOF SIR |
|---|---|---|
| females/male utildiff=.035 | -43% | -46% |
| females/male utildiff=.085 | -53% | -55% |
| females/male utildiff=.154 | -65% | -65% |

Gender has two further impacts on the risk of involvement in self-harm incidents that do not appear with the other incident categories. White males are 63% more likely to be involved in

a self-harm incident than minority males. As stated previously, females are just shy of 100% less likely than males to be involved in self-harm incident. Younger males are at greatest risk of self-harm. The findings regarding self-harm suggest that young white males are at a distinct heighten risk of involvement in self-harm incidents.

*DAI Category Results*

This study posited that when the variable "DAICAT" is entered into a logistic regression with all other independent variables listed in this section with "Any SIR" as the dependent variable, then "DAICAT" will be a significant factor with a negative beta. That is to say, youth in the "high" DAI category will be less likely to be involved in an SIR than youth in the "low" category. Strictly speaking this hypothesis is not confirmed because no significant difference was found in the contrast between high and low scoring youth in the ANY SIR regression. That the medium category is at significantly higher risk than either the high or low group is not directly addressed in the hypotheses, but is much more interesting.

Technically, DAI scores were weak but significant factors in all three regressions. In practice the only significant contrast in the self-harm regression involved a contrast with the missing data category, which is not useful. DAICAT was either the weakest or the next to weakest factor in each regression. Neither regression produced a complete set of significant comparisons. In the ANY SIR regression medium scores were distinct from high and low scores, but the odds of high and low scoring youth were not significantly different. In the UOF SIR regression the risk to youth with low scores was significantly different from the risks to medium and high scoring youth, but the odds of involvement in use of force incidents of youth scoring medium and high were not significantly different.

If the findings for the ANY SIR and UOF SIR regressions are cobbled together, a provisional picture of the impact of DAI scores emerges. The medium scoring group appears to be at higher risk than the low or high scoring group. That the medium group is at greater risk than the high scoring group is potentially important. As previously discussed, the Department of Juvenile Justice recommends that youth scoring in the medium range be released from secure detention and provided services that would insure that youth not re-offend or abscond before their scheduled adjudication. That youth who could be better served outside of secure detention are at greater risk of becoming involved in incidents than high scoring youth who require secure confinement suggests that these youth are being subjected to more punishing conditions then their risk to society warrants.

It should be remembered that DAI scores purport to measure the risk of a youth either re-offending or absconding before adjudication. The DAI does not purport measure risk of becoming involved in an incident once a youth is detained. Indeed if DAI scores actually formed a de facto basis for deciding which youth would be detained, most of the youth in this study would have been at little or no risk of involvement because they either would not have been detained or would have been released shortly after admission. But it was believed that the DAI could perform as a rough proxy for delinquency and that level of delinquency should have some relationship to likelihood of becoming involved in incidents. A validation study that examines the differences of re-offense rates and/or failure to appear rates among different DAI scores has not been conducted. It may be that prior detentions is under-weighted in the formula for calculating the DAI. If the Department of Juvenile Justice undertakes a formal validation study of the DAI, it should compare existing scores to known prior detentions to determine whether the current formula is being accurately implemented. The Department should also run models that

add different weights to prior detentions to see whether the use of prior detentions in DAI calculations does a better job of predicting risk to re-offend/abscond than prior adjudications. In that prior detentions are a better predictor of risk of involvement in SIRs than DAI scores, it may be that the addition of prior detention data would improve the performance of DAI.

*Ethnicity Results*

This study posited that when race/ethnicity is entered into a logistic regression with all other independent variables listed into this section with “Any SIR” as the dependent variable, then minorities will be at significantly higher risk of involvement in SIRs than whites. This hypothesis is not confirmed. Ethnicity was not retained in the ANY SIR regression. The posited relationship was found in the UOF regression where minorities were 64% more likely to be involved in use of force incidents at age 13 which drops to 24% at age 15. The difference in odds was not significant at age 17. As reported under Gender Results, white males are at higher risk of involvement in self-harm incidents than minority males, but there is no significant difference in risk between white females and minority females.

# Chapter V

# Discussion

## *Overview of Findings*

The relationship between the conditions of confinement in detention centers and the constitutional rights of confined youth has been a matter of concern both nationally and specifically to the State of Georgia over most of the past decade. In its 1984 *Schall v. Martin* decision, the U. S. Supreme Court found that the detention of juveniles prior to adjudication serves a legitimate state interest in protecting the community from further offenses and that such detention is constitutional so long as detention serves a regulatory, not punitive purpose. The ability to estimate a youth's likeliness to re-offend before adjudication and whether conditions of confinement constitute punishment were central issues in the U. S. Department of Justice's 1997 investigation of confined juveniles in Georgia. In the Findings of their 1997 investigation, the U.S. Department of Justice concluded that both the dangerous conditions resulting from overcrowding and the practice of detaining youth for minor violations who could be appropriately housed in less restrictive placements were punitive.

The inter-related impacts of detaining low risk youth and overcrowding raise empirical questions examined in this study. Are youth thought to be at low risk to re-offend at higher risk to be involved in adverse incidents while detained? If overcrowding is associated with poor conditions of confinement; are there elements of overcrowding that are predictive of adverse incidents? If overcrowding is associated with an increased risk of involvement in adverse incidents; is that risk homogeneous or are identifiable sub-groups at higher risk than others?

What qualifications should be placed on this better understanding of factors that are predictive of involvement in adverse incidents so that it might best be used by policy makers to manage detention populations and design programming that protects detained youth from harm? What more might be learned from further research?

In their *Conditions of Confinement* study, Parent et al. report that because their study was based on facility level data, they could not identify links between variables or examine demographic characteristics, needs and the efficacy of programming purporting to address those needs. Parent et al. stated that individual level data would be required to examine these issues (Parent et al., 1994). Beyond the importance of the risk factors identified in this study, the most important finding of this research is that the analysis of placement level data yields rich results. It is possible that a data set that simply listed an average monthly population, the number of males and females housed during the month and how many incidents occurred to males and females would have been able to establish that males are more likely to become involved in incidents. Such a data set may also have been able to establish that incidents were more likely when the monthly average population was over a facilities rated capacity. It seems unlikely that such a study could have established much more than that.

The results of this study present a detailed, rich picture of facility and demographic characteristics that are associated with increased risk of youth becoming involved in adverse incidents and how these characteristics interact. Without placement level data most of the findings would have been missed. The UTILDIFF variable provides a picture of the dynamics of overcrowding that have an adverse effect. The detailed age, gender and ethnicity comparisons that identified specific gender and ethnic risk for youth involvement in use of force and self harm incidents would not have been accomplished without placement level data. The magnitude of the

impact of length of stay and the numerous ways it interacts with other factors would not have been possible without placement level data.

The findings of this study underscore the value of a good database. The Director of the Department's Office of Technology and Information Services has long contended that if the Department designed a database that provides employees with data they can't do their jobs without, that the data will become increasingly accurate. Good quantitative research is not possible without valid, reliable data. The rich findings of this research are a reflection of the degree to which the Department has succeeded in building a database that users rely upon. The improvements that have been made in the database and data collection processes suggest opportunities to explore factors that were not examined in the current research. The analysis of placement level data in other jurisdictions would likely also yield significant findings where high quality data is available.

Length of stay was the most powerful predictor of youth involvement in adverse incidents. This was expected. The longer one is exposed to a risk agent, the more likely one is to be affected by that risk. The risk posed by second hand smoke is greater for a youth whose parents smoke in the home than it is for a youth who occasionally is seated in the smoking section of a restaurant. The breadth of the impact of length of stay is, none the less, compelling. Many of the other variables included in the three regression models can not be understood apart from their interaction with length of stay. Increased length of stay mitigates the rate at which increases in the UTILDIFF raise risk. The increased risk of youth who were transferred and the increased risk among males both diminish as length of stay increases. The risk of involvement of younger detainees actually increases relative to older detainees as length of stay increases in the ANY SIR and SELF-HARM models.

This study did not examine the number of days between admission and when adverse incidents occur which would have afforded a more detailed examination of how incidents cluster. The current study has provided us with a comparison of youth with lengths of stay of three and nine days, for example, but can not tell if there tends to be a cluster of incidents that happens from five to seven days after admission. It may be that there is that there is there is an inevitability about youth involvement in adverse incidents. If any youth is detained longer enough, the argument goes; they will all become involved in an adverse incident. That certainly was not the case in this sample. Even if we restrict the sample to youth whose length of stay was over 200 days; one third of the youth were not involved in any incidents. It seems more likely that there is a plateau effect where, after a certain length of time, the youth that have not been already been involved in an incident are unlikely to do so. It may be, for example, that they either have attributes that help them avoid becoming incidents or have acclimated to detention in a way that causes them to be at a much lower risk of involvement in adverse incidents than the general population. The author has worked with many detained youth who know "how to keep their heads down." Although this study tells us that risk increases with length of stay, a different study would be required to examine these issues in depth.

Without placement level data, the comparison of the impact of average placement population and peak populations would not have been possible. That the difference between average and peak utilization does a better job of modeling the data than either does separately not only confirms that population level impacts incident rates, but provides specific information about the dynamics of overcrowding that have an adverse effect. The UTILDIFF impact is robust, it occurs in all three regressions and has either the largest or next to largest F statistic in each regression. It appears that increases in the difference between average and peak population

raise the risk more form males than females and that this disparity increases as UTILDIFF increases.

There were significant differences among sites in all three regression models. Differences among sites did a better job of modeling the data than differences in bed capacity. The *Conditions of Confinement* study also found differences among sites and question "why facilities vary so dramatically in the ways they exercise control and the extent to which they provide a safe and secure environment (Parent et al., 1994, p. Executive Summary 14)." The matrix of odds comparisons between twenty-two sites is beyond the scope of this current research.

Age was a significant factor in all three regressions. Younger youth are at higher risk than older youth. The disparity in risk between younger and older detainees increased with length of stay in the ANY SIR and SELF-HARM regressions but not the UOF regression. In the UOF regression age interacted with ethnicity as minorities were at significantly higher risk than whites of involvement in use of force incidents at ages thirteen and fifteen but not at seventeen.

The results regarding the DAI scores are intriguing, inconclusive and the most provisional of the study. DAI was significant in all three regressions, but the *F* statistic for DAI scores was low in all cases. In the SELF-HARM regression the comparison between high and missing scores which does not contribute to the analysis. Comparisons of the risks between different DAI categories in the other two regressions were not consistent, but they also were not contradictory. Medium scores were significantly different than high and low scores but there was no significant difference between the odds of high and low scoring youth in the ANY SIR regression. Low scoring youth were significantly different from medium and high scoring but there were no significant differences between the odds of medium and high scoring youth in the UOF regression. In both models the risk of involvement in adverse incidents appears to be higher

in the medium group than in the low or high groups. There were a high number of missing scores in the DAI variable.

Prior detentions were significant in all three regressions. Prior detentions increased the risk of youth being involved in SIRs. Prior detentions in the SELF-HARM regression were the only instance of a factor that stood alone without any significant interaction effects. Prior detentions was included in the list of possible variables because most jurisdictions providing detention services are likely to be able to calculate the number of prior detentions a youth has experienced (at least within their system). The expectation was that DAI scores would be a better predictor of youth involvement because the DAI combines information about current offense with historical information about a youth to create a richer picture of youth delinquency. This was not the case. A simple count of prior detentions is a better predictor of involvement in adverse incidents in all three regressions. Prior detentions parsimoniously combine availability, ease of computation and effectiveness in ability to predict future involvement in adverse incidents.

Gender was significant in all three regressions with significant interactions with the two strongest variables in most regressions. Males are at greater risk than females in all three types of incidents. Gender differences moderate with increases in either length of stay or UTILDIFF. Younger males were at higher risk of self-harm than females. White males were at higher risk than minority males both of whom were at much higher risk than females.

Ethnicity was a factor in the SELF-HARM and UOF regressions but there were no ethnicity effects in the more general ANY SIR regression. The impact of ethnicity was specific. Younger minorities were at greater risk involvement in use of force incidents. Younger white males were at highest risk of self-harm.

## *The Findings and Key Issues Raised in the Literature*

### *Youth at Low Risk to Re-Offend or Abscond*

The findings of this study address many issues raised in the literature review. The question of the constitutionality of the use of preventive detention for youth who are at low risk to re-offend or abscond before adjudication is central to this study. In *Schall v. Martin* the Supreme Court found that although preventive detention does interfere with a juvenile's interest in liberty, that interest is outweighed by the State's interest in protecting the safety of the community. The majority ruling found that the state's interest was two fold: 1) to prevent the juvenile from committing further crime, and 2) to protect the juvenile from "the downward spiral of criminal activity into which peer pressure may lead the child" (*Schall v. Martin*, 1984 as quoted in Weiss, 1984, p. 860).

As part of its agreement with the U.S. Department of Justice, DJJ agreed to develop a risk assessment instrument to identify "youths whose risk factors make the use of non-secure detention alternatives appropriate (U.S. Department of Justice, 1998, p.34)." It is curious that the risk factors that make use of non-secure detention appropriate are not explicitly linked to risk to re-offend in the MOA. Other risk assessment instruments used for making detention placement decisions, such as the one developed in Florida, are explicitly charged with estimating the risk to re-offend or abscond before adjudication (Orlando, n.d.). The Detention Assessment Instrument (DAI) was developed to meet this requirement of the MOA.

The use of the DAI was problematic from the outset. While the authority to use of risk assessment instruments to make detention decisions is founded in state law in Florida, the sole authority to use the DAI for making detention decision is the MOA. Section 15-11-46 of the Official Code of Georgia Annotated puts the authority for making detention decisions in the

hands of the judiciary, not the executive branch. Jimmy Taylor, who was Legal Services Officer for the Department of Juvenile Justice when the MOA was signed, has indicated that the MOA is, in effect, a contract between the executive branch of Georgia and the Federal government (J. Taylor, personal communication, October 15, 2004). The judiciary was not a signatory of that contract and, thus, is not bound by it.

The recommendations made by DAI scores were often not followed during the time period of the study. An examination of approximately 11,700 DAI administrations between January and July of 2002 indicated that the recommendations made by the DAI score were not implemented 47% of the time. The three primary reasons for the over-rides were that judges resent what they see as an imposition on their authority, they doubt the ability of the DAI to help them make consistent decisions and the lack of appropriate alternatives when judges agree to use them (Busch, 2002). A validation study to determine whether the DAI actually measures youth risk to re-offend or abscond has not been conducted.

The DAI scores figure into this broader argument in four ways. Are youth thought to be at such low risk to re-offend or abscond contributing to overcrowding? Are detention centers that are overcrowded less safe than centers that are not overcrowded? What are the risks are posed by the conditions in detention centers to youth whose DAI scores indicate that secure confinement is inappropriate? What are the implications of large numbers of youth scoring low on the DAI on the majority's argument that the State has an interest in placing youth in detention to protect youth from the downward spiral of criminal activity that peer pressure might otherwise lead them toward? All of these questions are asked in the context of a risk assessment instrument that has not been validated.

The minority opinion in *Schall v. Martin* criticized the opinions lack of clear guidelines as to what constitutes an adequate risk to re-offend. The minority opinion argued that an ill-defined standard for preventive detention would maximize the burden to juveniles while creating minimal protection to the community. What the minority did not seem to anticipate was the pervasive overcrowding that would result from the ill-defined standards the majority promulgated and the burdens that overcrowding would place on juveniles *and* the community.

If the DAI is valid, then youth who are at low risk to re-offend or to abscond before adjudication contributed to overcrowding in Georgia's detention centers during the study period. Eighteen percent of the bed days provided to youth included in the study were provided to youth who scored low on the DAI. Twenty-seven percent of the bed days provided to youth in the study were provided to youth who scored medium on the DAI. Some youth housed in detention centers have already been adjudicated. Typically these youth are awaiting placement. These youth, included in the study, would not be eligible for release from detention regardless of their score. Some youth scoring low or medium on the DAI remain in detention because appropriate alternatives could not be identified. Not all of the youth who scored low or medium on the DAI were appropriate for release. How many of these youth would have been appropriate for less restrictive alternatives is not the subject of this research. But up to 45% of the bed days utilized in the study period were used by youth whose DAI scores suggest could have been detained in less restrictive, less expensive and most likely less dangerous placement. If even a moderate portion of the 45% had not been detained, there likely would not have been *any* overcrowding in detention centers during the period covered in this study.

This study clearly demonstrates a relationship between increases between average and peak population during detention placement and the likelihood of youth becoming involved in an

adverse incident. In that the average for peak population was 108% of facility capacity, it is reasonable to assert that part of what the UTILDIFF variable measures is overcrowding. The large number of youth in Georgia's detention centers that could better be served in a less restrictive environment contribute both to the volatility of detention population and to overcrowding. The practice of detaining youth who could be better served in a less restrictive environment causes detention centers in Georgia to be less safe than they should be. This degradation of safety creates an unnecessary burden on the youth housed in Georgia's detention centers and on the communities that must rely on these centers for detention services.

The results on the impact of DAI scores on the risk to confined youth was not strong and should be considered more provisional than other findings in the study. As stated in the Overview of Findings, the clearest pattern to emerge from the DAI category comparisons is that youth scoring medium are at higher risk of becoming involved in incidents than youth in the low or high category. The medium scoring youth are 43% more likely to become involved in an adverse incident during placement than youth scoring in the high category. That a group that departmental policy asserts should not be detained is at higher risk of becoming involved in adverse incidents than the group for whom secure confinement is recommended is consistent with the argument that detention is punishment for youth who could be adequately served in a less restrictive setting. But what does this say about the group scoring low? In the ANY SIR regression the low group was not significantly different from the high group. In the UOF regression, the low group was at less risk than the high group. On one hand, it can be argued that any risk is unnecessary for a group that is recommended for unconditional release. But what is an acceptable level of risk? The investigations conducted by the Civil Rights Division, like the one conducted in Georgia in 1997, help to establish what egregious conditions are but fail to establish

standards for acceptable conditions. Studies such as this one can help lawmakers and administrators better establish the balance between the safety of communities and of juveniles.

The second part of the State interest asserted in *Schall v. Martin* was that detention would protect youth from the downward spiral of criminal activity that peer pressure might otherwise lead them toward. The DAI scores of the study sample can be used to question the logic of this assertion. According to Departmental policy, up to 45% of the placements in this study could have been better served in a less restrictive alternative to secure confinement. Sixty percent of the youth scoring in the low category had no previous detentions. Yet these youth were being detained in centers with youth with extensive histories of serious crimes. It seems likely that detaining youth who score low or medium on the DAI exposes these youth to a far greater concentration of the "downward spiral of criminal activity" than they would have in a less restrictive placement or simply released home. By not requiring an objective assessment of risk to re-offend or abscond, the Supreme Court has created the very conditions their decision purported to protect youth from.

Youth who, if the DAI is valid, should be in a less restrictive placement; are exposed to youth with extensive criminal histories and youth charged with much more serious offenses. The Department has classification standards that separates the housing of youth by physical characteristics and the risk youth pose to others, but these low risk youth are in the same center as high scoring youth. Far from "preventing a downward spiral" the practice of detaining youth at low risk to re-offend or abscond seems likely to exposure these youth to a level of peer pressure they would not have experienced had they not been detained.

*Overcrowding*

The *Conditions of Confinement* study operationalized population overcrowding as facility population as a percentage of design capacity from a single day census. Although this appears to have been largely a matter of convenience (national data calculated using a well understood, already existing formula); the authors also defended the use of a single day's data over the measurement of how overcrowding varied over time. They stated "crowding occurs when a facility's population exceeds its capacity. Populations, of course, vary from day to day and month to month. However, these variations in population seem unlikely to have an important effect on our results (Parent et al., 1994, p. 44)." The authors were concerned, however, about the conceptualization of design capacity as the census they took their data from did not provide an unambiguous definition of design capacity.

The findings of this study suggest that measurement over time *does* make a difference. This study set out to operationalize overcrowding by looking at population average and peak population during placement as a percentage of design capacity. The measure of peak population would have been closer to the standard used by the *Conditions of Confinement* study. The findings of this study suggest that it is the difference between average and peak population that matters. While the *Conditions of Confinement* study speculated that "variations in population seem unlikely to an important effect," this study found that variations in population is *exactly* what does have an important effect.

The difference between a measure that indicates that adverse incidents are more likely when a facility is overcrowded and a measure that suggests *the dynamics* of population that make adverse incidents more likely is an important difference. It is also a reflection of potential of the sort of individual level data study that the *Conditions of Confinement* study called for. That

volatility within detention populations contributes to the likelihood of adverse incidents invites speculation about why volatility matters. *The Conditions of Confinement* study found that population exceeds design, staff turnover, and security staff ratios to be associated with the incidents of suicidal behavior. That staff would have difficulty adjusting to increases in population that are well above what they are used to seems like a reasonable assertion worth testing. Staff data was not available for the current study.

The *Conditions of Confinement* study looked at three different types of incidents involving injury. The variable "population exceeds design" was associated with only Juvenile on Staff injuries. Injury severity codes have been added to the Departments SIR database and could be studied. While both studies found a relationship between their differing overcrowding measures and self-harm behavior; this study extends our understanding of the impact of overcrowding to use of force incidents and incidents in general.

The *Conditions of Confinement* study expressed dissatisfaction with reducing the conceptualization of overcrowding to whether a facility's population was over design capacity. The study that pointed out that overcrowding can be more localized than a single number might capture. Sometimes the number of females exceeds the capacity of the female unit while the total population for the facility is below capacity. The impact of overcrowding may begin well before the population exceeds capacity. The closer to full capacity a facility gets, the more difficult it is to assign youth to cells their classification status indicates simply because there are fewer empty beds to choose among. Effective classification of youth may begin to degrade when population reaches 80 percent of design capacity (Kloffas, Stojkovic and Kalinich, 1992). In addition to the impact of overcrowding on security staff, overcrowding has a similar impact on programming as well. The same number of teachers has to provide education for more students. The kitchen staff

has to prepare more meals. Medical and mental health staff has to answer more referrals. A facility operating at 120% of capacity that is richly staffed in teachers, nurses and mental health clinicians might be more safe than a poorly staffed facility running at only 80% of capacity. These considerations are beyond the scope of this project, but it should be acknowledged that overcrowding is a dynamic condition that can not be reduced to any single measure.

### *Limitations of the Study*

Problems associated with data sources, characteristics of the sample, differences between jurisdictions all qualify the way the findings of this study should be used. As asserted previously, research can only be as good as the data it is based on. The data this study was based on was not gathered under carefully supervised scientific conditions. The data in the Department's JTS system is entered by frontline employees whose data entry is not always checked for accuracy. There are undoubtedly numerous data entry mistakes within the data set. It is impossible, however, the estimate the extent of these errors. There were instances, for example, where the begin date of one placement preceded the end date of a previous placement. These were excluded from the study. There are undoubtedly instances where the begin and/or end dates of placements are wrong. There is no way of identifying these instances or knowing how many length of stay calculations are incorrect. There is no reason to believe that these and doubtless other errors are systematic in nature. They represent measurement error that degrades the precision of findings but are not credible threats to patterns that have been found.

The DAI scores may be more problematic. There are more missing data here than in any other variable. The rate of missing DAI data for minority females was much higher than other demographic groups. The lack of accurate data on previous adjudications from the circuits where the Department of Juvenile Justice does not provide court services may cause some scores to be

lower than they should be. There is anecdotal evidence that some court workers view the entry of DAI scores as busy work and may enter scores quickly without conducting the search of previous adjudications needed to compile an accurate score.

The cases that were included in this study were a sample, albeit a large sample, of detained youth. The population that is currently detained is different from the population that was detained from 7/01-6/02 time period. While overcrowding was declining during this period, detention centers in Georgia are currently overcrowded. A combination of budget restraints, contractual problems and planned closings have resulted in the Department closing one detention center and two short term facilities and temporarily closing a long term facility. While the Department has also opened a new facility, replaced three thirty bed facilities with sixty-four bed ones and will open another facility this spring, these closings mean that the Department currently has fewer beds than during the study period. Detention centers are much more overcrowded than during the study period. On November 11, 2004, the detention system is housing seven percent more youth that the system was designed for. Individual centers range from populations that are 57% of design capacity to 120% of capacity. Sixteen of 21 centers are at or above their design capacity. The current 107% utilization rate is very close to the 109% average *peak* utilization rate in the study. It is doubtful that a study taken under current conditions would replicate the findings of this study. Detention populations are highly dynamic.

The demographics of the study sample are different from other time periods and are different from the demographics of other jurisdictions. This study suggests that ethnicity and gender are significant predictors of involvement in some incidents, so we would expect that populations that are demographically different than Georgia would have different risk profiles. Laws regarding detention vary among jurisdictions. Detention is a highly politicized subject, and

the political environment has a profound impact on detention populations. The U.S. Department of Justice investigation of Georgia in 1997, for example, noted that the population in detention centers increases approximately 30% with the passage of the Georgia SB440 law (Lann Lee, 1998). The definition of adverse incidents has changed in Georgia since the time period of the study. Although every jurisdiction that detains youth has adverse incidents, what constitutes an adverse incident varies. The results of this study, or of any single study, can not be generalized to other populations or other times. The results do provide solid justification for research into how changes in population levels and population characteristics are related to the occurrence of adverse incidents.

Finally, because the subject population is a sample of the larger population of juveniles who will or have been detained, all of the results of the study are true within a confidence interval. Computer printouts are impressively precise. A one day increase in length of stay increases the odds of a youth becoming involved in a self-harm incident by 12.31% when the difference between average and peak population is 3.2%. The increase in odds is *not* 12.32 per cent and *not* 12.30%. This is very precise, very impressive and not precisely the truth. The increase in odds for youth under the stated condition varies within a confidence interval that was not calculated in this study. Even it that confidence interval had been calculated, the true increase in odds for any youth in America to be involved in an event called a self-harm incident that would have a nationally agreed upon meaning probably would not be within the confidence interval of this study. While the reporting of impacts in such precise odds suggests an unwarranted precision; it is true that length of stay, differences between average and peak utilization, being a transfer and being young increase the odds of being involved in an adverse incident for the youth detained during this period of this study.

So what cautions should a policy maker reading this study apply to the results? In part that depends on how different the population and the laws of the policy makers jurisdiction are from Georgia's. That length of stay increases the likelihood of involvement in an adverse incident is inevitable. The importance of differences between average and peak populations is unknown. This finding would have to be replicated in Georgia and found in populations outside of Georgia before there is any empirical basis for generalizing this unique finding.

Policy makers would not have to wait for the results of subsequent research to make use of the findings of this study. A sense of curiosity and an informal investigation of whether incidents appear to cluster around population spikes do not require sophisticated statistical analysis. A spreadsheet and a couple of months worth of daily population and daily incident reports could be instructive. A simple calculation of the number of prior detentions for each youth might also identify youth front line staff might want to pay particular attention to see how they are adjusting to detention. Some additional support and counseling for these youth can be the penny of prevention that is worth a pound of cure. The same holds true for younger detainees. Caution is inexpensive and does not require confidence intervals to be worthwhile.

### *Recommendations for Future Research*

The findings of this study suggest three different sorts of future research that might be pursued. All three areas would also serve to replicate facets of the current study. Research should be conducted that would replicate and *extend* the findings of this study. There have been changes in the JTS database that improve the quality of data available for study. The addition of an injury severity rating greatly improves a researcher's ability to study adverse incidents that result in injury. If an investigator wants to look into the likelihood of incidents that result in relatively serious injury, the data set could be sorted to exclude reports where no injury occurred and

incidents that resulted in injuries that required only first aid. The *Conditions of Confinement* study looked at youth on youth and staff on youth injuries. Codes for these types of incidents exist in JTS. This study choose not to include these codes as dependent variables first because the inclusion of too many dependent variables was unwieldy within the context of a doctoral dissertation and secondly because the basis for coding a fight as being with or without injury appeared to be subjective. Incidents that result in the use of force were chosen over youth on youth assault with and without injury because the data was believed to be more reliable. The new injury severity codes are based on objective standards and are assigned by nurses after examination.

The Department has also changed the coding for self-harm behaviors in a way that should improve the reliability of the data. During the time period covered by this study incidents were coded as either suicide gestures or suicide attempts. Codes were assigned by security officers with sporadic involvement from mental health. The difference between a gesture and attempt involves an assessment of lethality and intentionality the security officers are not trained to distinguish. The decision was made in this study to lump the two codes together. The Department has changed to the coding on these incidents to code by *behavior* and not intentionality. Current codes require the facility to state if the youth was attempting to strangle themselves, cut themselves, poison themselves, etc. An incident can receive multiple codes (youth cut himself and tried tie a pillowcase around his neck after sharp piece of metal was removed). When taken in conjunction with the addition of injury severity codes, the data currently in the data base affords a much better view of self-injurious behavior than was available during the period covered by this study.

The JTS database had a field that indicates whether a youth is on the mental health caseload during the study period. The data, however, were not reliable. The Office of Behavioral Health is better staffed than it was during the time period of this study. Reliable data now exits to indicate whether and when a youth has been placed on the mental health caseload. In an internal study developed for the Office of Behavioral Health, the author found that for the period between October 2003 and May 2004 that there was a significant correlation between whether a youth was on the mental health caseload and length of stay in detention ($r$=.225, $p$<.001). The average length of stay for youth on the mental health caseload was 37 days while the average for youth not on the caseload was only 18 days. It seems likely that the detention of youth suffering from mental illness makes a significant contribution to overcrowding. In another internal study for the Office of Behavioral Health, the author compared the suicide gesture incidence rates of youth housed in Youth Development Campuses (not detention centers) who were on the mental health caseload with those who were not on the mental health caseload during the period from October 2002 to March 2003. A paired-samples $t$ test was conducted to evaluate whether youth on the mental health caseload had a higher suicide gesture incidence rate than youth who were not on the mental health caseload. The results indicate that the mean incident rate of youth on the mental health caseload ($M$=.2017, $SD$=.074) was significantly different than the mean of youth who were not on the mental health caseload ($M$=.0217, $SD$=.017), $t(5) = -6.0$, $p$= .002. This suggests that the inclusion of the variable mental health caseload would be an important addition to future studies.

In addition to data that have become available since data for this study was gathered, the lack of staffing data should be considered. The results from the UTILDIFF variable suggest that the combination of changes in population levels and staffing patterns could be critical to

developing a better understanding of *how* comparatively large increases in population levels increase the odds of a youth becoming involved in an adverse incident. If other jurisdictions have databases that permit linking detention placement data, incident data and staffing data; it is recommended that research into the relationship between the difference between average and peak population during youth placement, whether a youth was involved in an adverse incident, and staffing patterns during the period of placement. Unlike the current study, conducting such a study at the Georgia Department of Justice would require a prospective study. While the current study was conducted using archival data that required minimal DJJ staff time to develop a study investigating this relationship would require ongoing, daily data entry by departmental staff.

Taken together the following recommendations are made for future research using data from the Department's JTS database. It is recommended that a placement level study using the same methodology as this study be conducted to identify factors that are predictive of youth involvement in the new self-harm codes, youth on youth assault and youth on staff assault and confirmed allegations of child abuse (staff on youth injury). It is further recommended that the injury severity variable and the mental health caseload variable be added to the variables that were included in this study. It is also recommended that cumulative length of stay and most serious offense be dropped in future studies as these variable do not appear to be productive. Preliminary studies should be conducted investigating the number of incidents that required more than first aid to see if these more serious incidents occur often enough to warrant separate investigation. Given the heighten level of days when facility populations have been above design capacity over the past year, excellent data currently exist to conduct such a study.

Separately the Department should consider conducting a prospective study similar to the one outline above that would also include data on daily staffing patterns and would be limited to

investigating a single “Any SIR” dependent variable. Work would have to be done to identify a methodology for collecting staffing data that would result in a variable that would exhibit good psychometric properties while requiring the least possible amount of staff time. A measure of staff turnover should also be included in such a study.

The current study found significant differences among sites. The Department currently conducts studies of incidence rates by site. Examples of these studies are available through the Office of Public Affairs. The author encourages the continuation of these studies. It is recommended that these studies form the basis for identifying centers of excellence. Studies should be conducted to identify best practices at these sites

It is recommended that other jurisdictions conduct placement level studies that calculate the percentage difference between average and peak population during placement. It is worthwhile to find out whether the findings related to the UTILDIFF variable generalize to other sites. If other jurisdictions have staffing data available, they are encouraged to add these data to such a study.

Because of their potential importance and because of the incomplete results, it is tempting to strongly recommend that scores from risk assessment instruments be included in studies in other jurisdictions. The confinement of so many youth thought to be at low enough risk to abscond or re-offend would be difficult to replicate. Other jurisdictions that use risk assessment instruments to make detention placement decisions typically have override rates of 9-14% (F. Orlando, personal communication, February 2001). It would be much more difficult to determine whether youth thought to be appropriate for less secure placements are at higher risk are at higher risk of involvement in adverse incidents than other youth because few of these youth are detained.

Within Georgia the future use of the DAI is unclear. It is not known whether the Department would continue to use the DAI after the MOA is no longer in force. The current situation of having to administer and make detention recommendations in accordance with an instrument that has no standing in law consumes valuable staff time and is a source of friction between the Department and the judiciary. The author has long contended that data that aren't used are useless and that spending tax dollars to collect and maintain useless data is waste (if not fraud). The value of continuing to administer an instrument whose results are over-ridden about half of the time is questionable.

The author recommends that a validation study be conducted to gain some empirical insight into the utility of the instrument. Such a study should gather data on youth for whom DAI data were collected and youth were either not detained or released from detention subsequent to adjudication. The study should compile DAI score, length of time between arrest and adjudication *outside of secure confinement*, whether the youth was provided an alternate service/placement and whether the youth either re-offended or failed to show up for court. Given the surprising robust ability of a simple calculation of prior detentions to predict the likelihood of involvement in adverse incidents, it may be of value to model the inclusion of prior detentions in assessing whether different weighting of DAI scores would improve its predictive ability.

The imposition of use of a risk assessment instrument onto the executive branch when the law assigns sole authority for detention placement upon the judicial branch places the use of the DAI in a political context. Ultimately, the decision about whether to continue to use the DAI is properly a political one. Empirical findings, however, can aid judicial, executive and legislative decision makers assess the value of risk assessment instruments. The State of Georgia has born

the costs of having to use the DAI for six years. Without a proper validation study, the State of Georgia will never know the value of what it has already paid for.

## *Implications for Practice*

### *The Problem Is Not Detained Youth; the Problem is the Un-Met Needs of Youth*

The overlapping influences of two findings have important implications for practice. To the extent the occurrence of adverse incidents is a measure of conditions of confinement for detained youth; conditions of confinement deteriorate with increases in the difference between average and peak populations (in part a measure of overcrowding) during a youth's placement. To the extent to which the DAI identifies youth who could better be housed in a less restrictive placements, overcrowding in Georgia's detentions centers could be drastically reduced or completely eliminated if enough appropriate alternatives could be identified ***and used*** for youth scoring in the low or medium range. By not detaining youth who could be served in a less restrictive placement, their risk of becoming involved in an adverse incident such as the use of force or self-harm behaviors while detained falls to **zero**. By not detaining youth who could be served in a less restrictive placement, the overall population of detention centers and the volatility of detention populations would be reduced, thus improving the safety of youth who require secure confinement.

The problem is broader than what DAI scores capture. Services for Georgia's adolescents are provided through a series of categorical funding streams. Funding for education is provided through the Department of Education. Funding for mental health services is provided through the Division of Mental Health, Developmental Disabilities and Addictive Diseases. Funding for providing services to youth who suffer from abuse and neglect is provided through the Division of Family and Children Services (DFCS). Funding for providing services to delinquent youth is

provided through the Department of Juvenile Justice. While the provision of services is funded through discrete silos, the problems youth and their families experience are not discrete. Many of the youth provided detention services have histories of involvement with DFCS and also have special education, mental health needs. The failure to provide effective services in any one of these areas is likely to negatively impact other areas.

Problems within any and all of these services can have the net impact of increasing the likelihood of youth involvement with the legal system and being placed in detention. Youth may score low or medium on the DAI but have a high level of chronic social service needs. To the degree to which community child and adolescent mental health services are ineffective and/or under-funded, the unmet mental health needs of youth can cause the population in detention to increase. To the degree to which services to youth by state psychiatric hospitals are ineffective or the number of psychiatric hospital beds is inadequate, the unmet mental health needs of youth can cause the population in detention centers to increase. As the turnover rate for child abuse investigators working for the Georgia Department of Family and Children Services continues at a discouraging pace, the underserved needs of abused and neglected children can cause the population in detention centers to increase. To the extent to which appropriate placements for abused and neglected youth can not be identified, the inadequacy of out of home placements can cause the population in detention centers to increase. School dropout rates can cause the population in detention centers to increase. As the Department of Juvenile Justice cuts the availability of programming to youth on probation, the underserved needs of delinquent youth cause the population of detention centers to increase.

Keeping these youth out of detention is important. But in a critical sense, it is beside the point. Just a squeezing a tube of toothpaste at one point only causes the tube to bulge someplace

else, squeezing resources from Georgia's child serving system may have only shifted these youth toward the Department of Juvenile Justice. A singular focus on restricting access to secure detention would only cause the toothpaste tube to bulge someplace else. The problem is not going to get better until Georgia develops a system of care that does a more efficient, effective job of helping Georgia's at risk youth to become competent, successful adults. Research into improving the conditions of confinement in detention centers should not be conducted separately from research into the effectiveness of Georgia's system of care for at-risk youth.

This is not to say the Department is incapable of improving the conditions of confinement of detained youth. The Department should continue to work with the judiciary to identify gaps in the Department's continuum of alternatives to detention and to develop programming and/or placements to address gaps. If the Department decides to conduct a validity study of the DAI, the findings could add objective evidence that low and medium scoring youth can be better served in a less restrictive setting without increasing the risk to communities. The problem of appropriate non-secure alternatives undoubtedly overlaps with the problems the Department of Family and Children Services face in providing appropriate placements for youth at high risk of abuse and neglect. The problem also overlaps with difficulties Community Service Boards experience providing effective therapeutic foster care. The Department of Juvenile Justice should work together with the Georgia Council of Juvenile Court Judges, the Division of Mental Health, Developmental Disabilities and Addictive Diseases and the Division of Family and Children Services *and the families these agencies serve* to develop a continuum of alternative placements that serve the needs of *families and children, not agencies.*

Two further issues should be considered here. The findings indicate that youth who score low on the DAI *and* are fourteen or less in age should be a particular priority in finding less

restrictive placements as younger youth are at highest risk of involvement in adverse incidents. The department currently utilizes “expeditors” to identify alternative placements for youth who score in the low or medium range on the DAI. If the problem with moving low and medium scoring youth into alternative placements is not so much a shortage of placements, but a shortage of expeditor time, the hiring of additional expeditors could be cost effective and improve the conditions of confinement within centers.

Expeditors often act more as ombudsmen than placement specialists. Successfully placing youth these high needs youth in a less restrictive environment often requires that expeditors to work with local agencies to create services that families needed all along. By working *among* agencies and focusing more clearly on the needs of youth, expeditors are in a unique position within Georgia’s nascent system of care. The Department of Justice, the Division of Family and Children Services, the courts and Mental Health providers might consider expanding and formalizing this useful role.

*The Impact of Staffing*

While the relationship between the impact of the UTILDIFF variable and staffing levels is not established in this study and requires further study, the adequacy of current staffing should be considered now. During his May 3- May 6, 2004 inspection of the Gainesville RYDC, Ryan Rainey (the lead attorney for the U.S. Department of Justice in the U. S. v. Georgia who monitors compliance with the MOA) asked the author to accompany him while he interviewed security staff. During the interviews he indicated separately to officers that he understood that they were specifically prohibited from playing basketball with detainees. Officers uniformly responded that they were prohibited from playing basketball with youth because not enough officers could be out on the court and an officer playing ball with the youth was at risk of assault

from behind. When asked if they thought playing basketball with the youth would help them build a more positive relationship with youth at the center, they all agreed that it would.

If one were to walk into any detention center in the State of Georgia, one is likely to find officers standing at the perimeter of a room situated in such a way that the officers access to the exit from that room is not blocked. Although it is not uncommon to see officers actively interacting with youth, it is more likely that you would find the officer standing apart from the youth and watching carefully. If Mr. Rainey's conversation is any indication, officers may not feel adequately staffed to leave the perimeter of the room and sit down and talk with youth. Staffing levels at detention centers may discourage the sort of pro-social relationships between detainees and officers that could prevent incidents from occurring.

The question should not be "do changes in the difference between average and peak populations increase the likelihood of youth becoming involved in adverse incidents?" "What should the goal of security staff be in their interaction with youth?' is a far better question. If the expectation is that officers are simply there to maintain order and break up fights, then we should expect officers to become proficient in managing adverse incidents in a manner that conforms to departmental policy. If the goal of security is to help youth adjust and adapt the confined realities of secure detention, then we should not expect them to succeed when the staffing ratios are such that all they can reasonably expect is that they stand at the perimeter of the lives of youth and break up fights. A security force that is only staffed to stand at the perimeter of the lives of youth can only regulate the occurrence of adverse incidents. A security force that is staffed and *trained* to become involved in the lives of youth can *prevent* adverse incidents from occurring. It the impact of this study is simply to professionalize the management and reporting of adverse incidents, this study will have failed.

Increasing staff ratios is one thing. *How* to increase them is another. The findings of this study suggest that if staffing ratios can be increased, resources should first be directed at days when centers regularly experience population spikes and then the resources should be directed first to the units serving younger males. Population spikes are not all predictable, but an examination of population by calendar day may indicate certain days when populations rise well above normal. Weekends and the days court is in session are obvious candidates. It may be that creating 29 hour positions to work on weekends as an *adjunct* to security staff would be efficient and effective.

### *More Specific Implications for Practice*

The study clearly suggests that males, particularly white males, are at higher risk of engaging in self-harm behaviors. This finding should be conveyed to the Office of Behavioral Health. This finding should be incorporated into suicide prevention training and considered for incorporation into risk screening.

The findings on the ability of prior detentions to predict youth involvement in adverse incidents should be considered in detention classification. It may be that a young detainee with multiple previous detentions may pose a higher assault risk to other young detainees than previously understood. The Department should consider adding previous detentions to the housing and classification scoring mechanism.

## *Conclusion*

Increases in length of stay increase the odds of confined youth becoming involved in an adverse incident. Increases in the difference between average population and peak population, being transferred into a detention center, being male and being young increase the odds as well. None of them raise the odds as much as the impact of an ineffective system of care. One morning

in the winter of 2001, the author had to deliver some piece of requested data to the Commissioner's office. As the financial aftermath of 9/11 continued to reduce the state's ability to collect tax revenues, the Governor had just requested another budget cut on top of the one that had already been requested. The atmosphere on the fifth floor was tense, as it always is when budget cuts are made. The Commissioner looked up from his work, eyes flashing, and barked, "How I am supposed to balance the books when these judges keep writing checks on my back that *they* don't have to cash?" When judges write a detention order for youth, the cost to house those youth has no financial impact on them. It also has little financial impact on the counties the youth reside in. Whether a youth poses an imminent risk to the community or no risk at all, the cost is the same to the local community: the cost of transportation to the center. Such a system hardly encourages communities to make prudent use of an expensive resource.

After a meeting with judges about the DAI one judge express his frustration: "You guys don't get the call [from local leaders] when a kid that has just been arrested goes out and commits another offense," the judge lamented, "I do." "Your DAI," he continued, "Has never met these kids, I have!" Justice isn't something that can be administered by the numbers from afar. Justice is local and about specific people.

Two competent men, striking in their shared earnestness were, in effect, talking right past each other. Neither man stood any chance of effectively executing his responsibilities without some measure of cooperation from the other. One good way to define the structure of crazy is when one is given the responsibility, but not the authority, to do something. A system that segregates the authority to detain youth from the fiscal responsibility of paying for detention is designed to fail. Similarly, a system that would place the rules for decision making within a central authority when the consequences for decisions is local would not work either. A just

solution will probably require a change in legislation that would require some *valid*, objective measure of risk to re-offend or abscond, but would also allow judges to override instrumental results when judicial knowledge of a case is not reflected in the risk score. A just solution might also limit the number of child care days allotted to each judicial circuit. Above a generous allocation, counties could be required to buy child care days from the system.

The Georgia system for delivering care to abused, neglected, mentally ill, cognitively impaired or delinquent youth is more effective at pitting parts of the system against itself than it is at creating a structure that rewards the delivery of coordinated, effective services and punishes ineffective duplication of services. Although this study succeeds in identifying factors that are predictive detained youth becoming involved in an adverse incident; the greater risk is the riptide youth are caught in as administrators, judges, legislators and child advocates continue to talk right past each other. The use of individual placement data can tell use a great deal about factors that contribute to our knowledge of what causes adverse incidents in detention centers. The challenge now is to use this knowledge to better contribute to the welfare of youth.

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