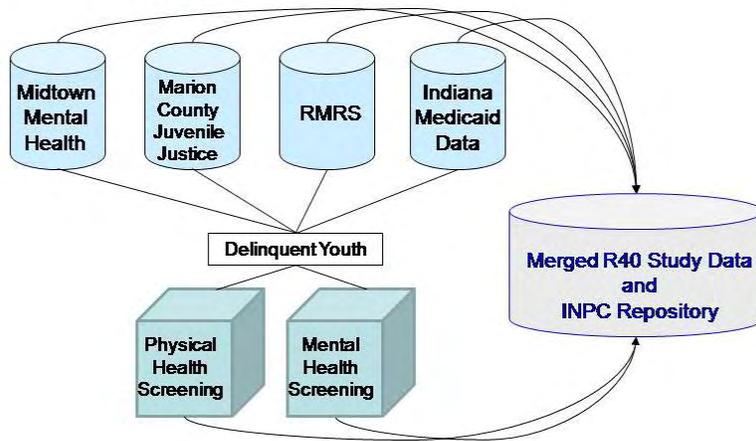


## Title: Health care access for delinquent youth

### Introduction: Research problem

The primary focus of the proposed research is to understand how to improve health care access and utilization for youth in the juvenile justice system. Specific research aims will address the adequacy and success of physical health and mental health care screening and referral programs, assess the effect that health care access and utilization might have on recidivism, and evaluate the role of Medicaid termination as a barrier to effective health care for detained youth. Other issues that will be explored within these aims are the effects of race and gender on health care utilization.

**Figure 1. Delinquent Youth Health Care Study Data Sources**



A unique partnership was instituted in Marion County (which contains most of Indianapolis, Indiana) in 2006 which entailed providing high quality medical and mental health screening and referral services for detained youth. We seek to assess how effective this screening and referral program is for improving access and service utilization for these youth. We will use a combination of existing data sets to assess the effectiveness of the program. Two cohorts of youth will be identified and data will be merged from the Marion County juvenile courts, the Indiana Office of Medicaid Policy and

Planning, the Regenstrief Medical Records System (RMRS), and Midtown Mental Health to evaluate the program. The first group will be youth placed in the Marion County detention center from April 2006 – April 2008 (the intervention group). The intervention group received the physical health and mental health screening and referral services while in the detention center. The second group will be youth placed in the Marion County detention center from April 2004 - March, 2006 (the historical control group).

We expect data from this research to inform future policy changes in the care of marginalized youth in Marion County as well as in national efforts to provide appropriate health care for delinquent youth. There are several initiatives described in the application that will aid in dissemination of the research findings. These include: the Juvenile Detention Alternatives Initiative (JDAI) funded by the Annie E. Casey foundation to lower the number of youth committed to the detention center; the State-Wide Mental Health Screening Project funded by the Indiana Criminal Justice Institute to have detention centers across the state screen youth for mental illness; and the Indiana Juvenile Justice Task Force, which is a group that advocates for best practices for youth in the Indiana juvenile justice system (support letters from each organization are included in the Appendix). Data will be used to address current Medicaid policy that requires automatic termination on entry into a detention facility. The information regarding this effort will also be disseminated in medical, public health and health policy journals to reach a larger audience in order to provide the best possible health care for a population that is significantly affected by physical and psychiatric problems and is at risk for early death.

### Review of the literature

Youth in the juvenile justice system have substantial physical health problems. Approximately 2 million youth under the age of 18 are arrested annually and on a given day 100,000 youth are held in a detention or correctional facility (National Center for Mental Health and Juvenile Justice, 2005). A recent study of the cost of adolescent delinquency exceeded \$70,000 per child over a 7-year period, which is substantially more than other mental health conditions (Foster et al., 2005). The most disturbing fact is that youth in the juvenile justice system are at significant risk for early death. A recent longitudinal study by Teplin and colleagues (2005) found that the overall mortality rate for youth in the juvenile justice system was over 4 times that of the general population. For female delinquent youth, it was almost 8 times higher. Ninety percent of the deaths were from gunshot wounds (homicide, accidental or self-inflicted).

We also know that youth in the juvenile justice system suffer disproportionately from both acute and chronic health problems (Clark & Gehshan, 2006). Youth in the juvenile justice system have poor health status and poorer long-term health outcomes than their non-delinquent peers (Pajer, 1998; Pajer, Stouthamer, Gardner & Loeber, 2006). This population is at particular risk for infection with HIV due to their behavior (Teplin et al, 2005). In a study of detained youth, almost 17% had a history of hospitalization and 11% had a medical problem that warranted close medical contact and coverage upon release (Fienstein et al, 1998).

Common chronic medical problems (e.g., asthma or diabetes) can be exacerbated by the high risk behavior of adolescents in the juvenile justice system (use of illegal substances interacting with medications, running away and not receiving health care, etc.) as well as the social environments and lack of previous care, which are pervasive problems for youth in the juvenile justice system (American Medical Association, 1990). Additionally, many youth in the juvenile justice system have not had adequate access to health care and some health conditions are complicated while the youth is in custody (AAP, Committee on Adolescence, 2001).

Youth in the juvenile justice system have substantial mental health and substance use problems. Youth placed in juvenile detention centers have high rates of undetected psychopathology (Grisso et al, 2001). Seventy percent of children in the juvenile justice system (Skowrya & Coccozza, 2006) have behavioral health needs. Additionally, youth in the juvenile justice system have high rates of past sexual and physical abuse as well as exposure to violence (Goodkind, Ng & Sarri, 2006). State and local data are consistent with national studies indicating that significant numbers of youth with mental health needs enter into the juvenile justice system because they lack access to mental health services in their communities. A recent study by the Indiana Juvenile Justice Task Force indicates that the vast majority of youth in Indiana detention centers are not systematically screened, assessed, or treated (Glick & Morales, 2004). Well over 50 percent have mental health and or substance abuse problems.

Substance use disorders among youth in the juvenile justice system are especially high. For instance, up to two-thirds of detained youth meet the criteria for a substance use disorder (Teplin et al., 2002). In a more recent study of detained youth by Teplin and colleagues (2006) it was found that 50% of males and 46% of females had a substance use disorder. Additionally, about 10% of males and 13% of females had comorbid mental health disorder and a substance use disorder. McClelland and colleagues (2004) recently assessed the prevalence of multiple substance use disorders among juvenile delinquents. Almost half of the juvenile detainees in this population met the criteria for a substance use disorder. Teplin and colleagues (2005) assessed the HIV risk behavior of youth in juvenile detention facilities. They found that those adolescent detainees with substance use disorders were at particularly high risk for HIV infection.

Treating mental health problems and recidivism. Recidivism is the repetition of criminal behavior. Recidivism has been defined in a variety of ways by researchers include re-arrest or re-incarceration. The Bureau of Justice

Statistics reported that the vast majority of adolescents under the age of 18 that were released from juvenile justice institutions (detention centers and correctional facilities) were re-arrested (Langdan & Levin, 2002).

Effective treatments exist for mental health problems common among youth in the juvenile justice system. For instance, multisystemic therapy and wraparound services for juvenile justice and other youth with significant emotional difficulties have been shown to reduce recidivism (Anderson et al., 2003; Burns et al., 2000; Henggeler et al., 2003). The state of Vermont, in a study of recidivism predictors, found that juvenile incarceration rates were negatively related to the utilization of public mental health services (State Department of Developmental and Mental Health Services, Vermont Mental Health Performance Indicator Project). Mental health problems that are untreated tend to be strong predictors of recidivism (Vermeiren, 2003). Although inadequately studied, providing linkages to care during and following detention may substantially lower recidivism (Gupta et al., 2005).

Importance of discharge planning and connection to services. Gupta and colleagues, in an opinion paper published in *Pediatrics* (2005), highlighted the important (and neglected) role of connecting youth in juvenile justice with community services: “Although physical and mental health problems are common both before and during incarceration, no studies have examined aftercare services or medical/behavioral services provided after reentry into the community for these extremely high-risk youth. There is a reason to be concerned. First, any abrupt discontinuity in the care received while incarcerated puts the youth at significant risk for relapse. Second, many questions remain about the challenges to enrollment, eligibility for benefits, and identification of treatment facilities for youth released from juvenile justice facilities, and third, not only should the percentage of youth in the juvenile justice system with chronic illnesses be alarming, but the lack of services received by this population should be of concern (pg. 1078).” We concur with their opinion, and, after exploring the mental health, criminology, public health and medicine literature, there are still no studies assessing the connection of youth in the juvenile justice system to after care services. Through this proposal, we will be able to study this important issue.

## **Study Design and Methods**

The goal of this project is to understand the facilitators and barriers to engagement in mental health and medical care. Thus, a quasi-experimental, pre-post design of youth detained from April 1, 2004 to March 31, 2008 will be identified. Youth from 2004 to 2006 will act as the control group for the evaluation study of the subsequent two years. Youth from the 2006 to 2008 group will act as the intervention group. The vast majority of youth enrolled were African-American (58%). The percent of youth in the detention center that are African-American is significantly higher than the demographic makeup of Marion County. This is consistent with previous research indicating that minorities are overrepresented in juvenile justice. Additionally, the majority of youth who have been detained are males (75%). This is also consistent with previous research on youth involved in juvenile justice. A major portion of this project has been linking individuals across datasets. As such, we detail where the data resided for this project (see Figure on page 1).

### ***Data sources***

Criminal justice involvement data. All interactions with the specific criminal justice systems are recorded in separate electronic databases. We will utilize arrest data from MCJJ to identify youth at their first arrest date. This information will be used to create the arrested youth cohort and as a comparison to make sure the identified Medicaid cohort was not involved in juvenile justice.

Clinical data. The Regenstrief Medical Record System is one of the largest (660 million distinct

observations, over 1.5 million patients), longest operating (continuously since 1973) and best studied medical record systems.(McDonald et al., 1999) It is well known nationally and internationally, and has been the model for a number of commercial and academic medical record systems ([www.regenstrief.org/medinformatics/rmrs](http://www.regenstrief.org/medinformatics/rmrs)). RMRS routinely captures laboratory results, narrative reports, orders, medications, radiology reports, registration information, nursing assessments, vital signs, and other clinical data. Through a collaborative effort among all major Indianapolis hospital systems, RMRS captures city-wide laboratory and inpatient encounter data. Although RMRS captures much but not all outpatient clinical data in Marion County, it demonstrates good geographic and socioeconomic diversity, encompassing most areas and sectors of the Indianapolis population.

Medicaid data. Health care utilization billing data will be from outpatient, emergency department, and inpatient health care encounters (categorized by service -- mental health, substance abuse, physical health, reproductive health, trauma care,) and prescription claims.

Massachusetts Youth Screening Instrument-2 (MAYSI-2). During the first days of the detention stay, the youth are screened by detention center case managers in a private office. The MAYSI-2 is a 52-item, dichotomous (yes/no) mental health screener for identifying youth who may warrant further mental health assessment.<sup>21</sup> The MAYSI-2 has seven subscales: alcohol/drug use, angry/irritable, depressed/anxious, somatic complaints, suicide ideation, thought disturbance, and traumatic experiences. This scale has been normed using a national sample of detained youth and has displayed good internal consistency (Cronbach's alpha per subscale varies from 0.61 to 0.86).<sup>21-23</sup> Per guidelines from the developers of the MAYSI-2, a youth is considered to have screened high on the MAYSI-2 if the score on the (5-item) suicide ideation scale is in the caution range (score of 2) or in the warning range (score of 3 or higher), or if two or more subscales are in the warning range.<sup>21</sup>

Data extraction and linking. We utilize the database downloaded from the crime data to identify all youth detained from April, 2004 – April, 2008. Relevant identifying information (name, social security number, sex, race, and date of birth) was gathered. A data set for linkage will be created for the study cohort and include only identifying information. We employed probabilistic linkage software called *Recmatch* (Grannis et al., 2003) to match with relevant files from the acquired databases.

Data analysis. Data analysis for the overall project was varied. Analyses included bivariate correlations, logistic and linear regression, comparison of means and standard deviations for descriptive purposes, and qualitative data analysis. For specific analyses we used propensity scores to statistically adjust for the quasi-experimental design.

## **Detailed Findings**

Mental health and STI. Our objective was to understand the relationship between mental health screening results, health disparity, and STI risk among detained adolescents. In this 24-month cross-sectional study of 1,181 detainees (aged 13-18 years), we examined associations between race, gender, mental health screening results (as measured by the Massachusetts Youth Screening Instrument – 2<sup>nd</sup> Edition) and sexually transmitted infection rates (STI; chlamydia, gonorrhea, and trichomonas). Consistent with previous research, females and Black youth were disproportionately affected by STI. Race and gender differences were also noted in mental health screening. The odds of having an STI increased by 23% (OR =1.23, 95% CI = 1.06, 1.37) with each one-unit increase in the Alcohol/Drug subscale score for females. Gender-specific STI interventions for detained youth are warranted. For young women with substance abuse, specific interventions are necessary and may help reduce health disparity in this vulnerable population.

Insurance status of delinquent youth. The goal was to describe the healthcare coverage status of detained youth and the relationship between re-detention and coverage. Healthcare coverage (Medicaid, private insurance, or no insurance) was measured through retrospective review of self-reported or parent-reported data in electronic detention center records for 1614 adolescents detained in an urban detention center between October, 2006 and December, 2007. Patterns by age, gender, and race/ethnicity, and consistency of coverage when re-detained were described. The majority of detained youth reported having Medicaid coverage (66%); 18% had private insurance, and 17% had no insurance. Lack of insurance was more prevalent among older, male, and Hispanic youth. A substantial minority of detained youth is uninsured or has inconsistent coverage over time. While having insurance does not guarantee appropriate healthcare, lack of insurance is a barrier that should be addressed, to facilitate coordination of medical and mental healthcare once the youth is released into the community.

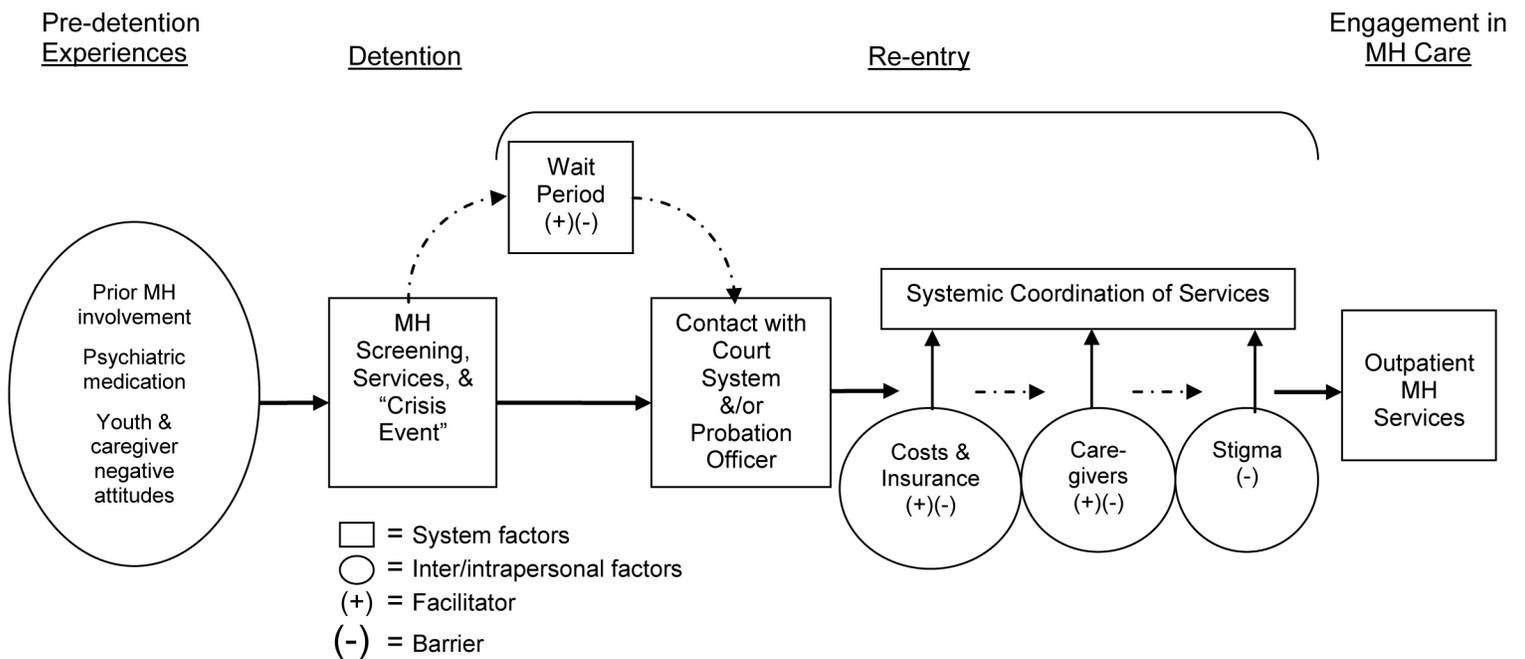
Juvenile justice reform and public health impact. The goal was to understand how juvenile detention diversion (diverting low risk youth from a detention placement) affects screening practices for detained youth. In this 22-month cross-sectional study of 2532 detainees (age 13-18 years), mental health and sexually transmitted infection (STI) screening were compared before and after implementation of a Risk Assessment Instrument (RAI) for diversion. Detention diversion resulted in a 30% census reduction. In a logistic regression, younger age (OR = 1.10 for a 1-year increase; CI: 1.03, 1.17), Hispanic vs. white race/ethnicity (OR = 0.53; CI: 0.35, 0.82), and less severe crime (OR = 0.90 per 1 point; CI: 0.89, 0.91) were associated with reduced likelihood of detention. Mental health and STI screening increased significantly after implementation of the RAI. Additionally, the rate of positive STI tests increased among males (9% pre-RAI to 14% post-implementation of the RAI,  $p=.01$ ), and no significant increase was noted in the number of youth with positive mental health screens, after the implementation of the RAI. Juvenile justice diversion programming affects screening rates among detained youth. Universal mental health and STI screening should be the gold standard in detention centers. Additionally, mental health screening is important for low-risk youth diverted from detention.

Psychotropic medication refill patterns. The goal of this analysis was to examine the psychiatric medication fill rates of adolescents after release from juvenile detention. A total of 177 charts were reviewed. Medication fills were defined as a psychiatric medication charge to Medicaid within either a 30-day or 90-day window after release from detention. Differences in demographic characteristics were compared among individuals with fills at 30-days or 90-days, compared to individuals with no medication fills, using Stata/SE and two-tailed t-tests. Of the 177 charts reviewed, 45% were on at least one psychotropic medication. Forty-seven percent of individuals had a refill at 30 days, and 68% at 90 days. At least 50% of individuals, regardless of diagnosis, were on an atypical antipsychotic. There was no significant relationship between fill at 30 or 90 days and race, age, or sex. Despite the association between mental health diagnosis and treatment seeking with age, sex, and race, it appears that psychiatric medication fill patterns are not associated with these factors. A secondary finding is the large percentage of detained youth on antipsychotics, regardless of diagnosis.

Medicaid termination. We sought to describe the Medicaid insurance coverage of detained youth and explore predictors of Medicaid de-enrollment. A cross-sectional study using electronic juvenile court and Medicaid enrollment records between April, 2004 and April, 2008 was used with a sample of 2,208 detained teens between 12 to 18 years old. Mean age was 15.6 years ( $SD=1.5$ ). Most of the youth were male (72%) and Black (68%). The majority (1082 of 2028; 53%) had one detention during the study period, 796 (39%) had 2 to 4 detentions, and a small percentage (7%) had 5 or more detentions, with a maximum of 10 detentions per person (mean=2.02,  $SD=1.48$ ). Duration of time in Medicaid as a percentage of total calendar time was significantly different after first detention (67.5% before and

56.4% after; p-value<.001 based on a paired t-test). Significant predictors of decreased time with Medicaid coverage after a detention (controlling for years in the study) included race (Black vs. White,  $\beta=0.12$ ; p=.01; Hispanic vs. White,  $\beta=0.30$ ; p=0.02), older age at first detention ( $\beta= -0.02/\text{year}$ ; p=0.05), increasing detentions ( $\beta= -0.03/\text{detention}$ ; p=0.02), length of detention stays ( $\beta= -0.12/\text{days}$ ; p=0.001), total calendar time after first detention ( $\beta= 0.54/\text{year}$ ; p=0.001) and commitment to juvenile prison ( $\beta=-0.30$ ; p<.001). Forty-six percent of youth with continual Medicaid coverage 12 months before and after detention made a primary care appointment, compared to 24% of youth with less continuous coverage. Following a detention placement, a youth was less likely than before detention to have Medicaid coverage. Youth placed in juvenile prison, compared with those who were detained but not placed in juvenile prison, had a lower subsequent duration of time with Medicaid coverage. Medicaid coverage is a particularly important public policy consideration since juvenile reentry, from both detention as well as prison placement, necessitates connection to mental and physical health care systems.

Qualitative mental health connection to care. In tandem with the MCHB R40 Health care access for delinquent youth (HCADY) study, Dr. Aalsma and colleagues utilized a grounded theory approach with qualitative interview methods (Qualitative HCADY Project) to explore engagement in mental health care. This project occurred with joint funding from MCHB R40 and the Indiana Criminal Justice Institute. Youth who screened positive for mental health problems and their caregivers were interviewed 30 days post-release from detention to explore critical issues in engagement with mental health care. From these 19 youth/caregiver dyads data, we were able to create a model describing the process of engagement with outpatient mental health care.



Several results are relevant for the proposed study. First, similarities were noted with past research. For instance, youth and caregivers viewed past mental health care negatively, and mental health stigma (for youth in particular) and concerns of cost were noted. Second, the detention stay was viewed by most youth as a "crisis event." Due to this view, youth reported they were motivated to seek mental health care upon community reentry while detained, which is consistent with crisis theory. However, upon community reentry, their motivation to seek care decreased dramatically. Lastly, caregivers were particularly important actors in enabling mental health care connection. Youth with caregivers that

communicated the importance of mental health care and "pushed" their child were more likely to engage in mental health care. The results of this qualitative study are currently under review. We are following up this manuscript with articles focused on the unique role of probation officers and perspectives of psychiatric medication among detained youth.

Effectiveness of mental health screening. A core analysis of the Health Care Access for Delinquent Youth study (HCADY) was a quasi-experimental pre-post 4 year study exploring the effectiveness of mental health screening in connecting delinquent youth to mental health care upon community release. For the analysis, only the first observation in each cohort for each subject was included. Subjects who had prison, inpatient hospitalization or residential treatment facility during the detention or through 30 days after exiting detention were excluded. There were 4 variables used that designated a mental visit (mental health conditions, CHMC, outpatient mental health clinic, and psychology/psychiatry).

	First Cohort (n=5134)	Second Cohort (n=2494)	p-value
Male, n (%)	3707 (72.2%)	1963 (78.7%)	<0.0001
Race, n(%)			<0.0001
Black	2855 (55.6%)	1500 (60.1%)	
Hispanic	234 (4.6%)	126 (5.1%)	
Mixed	189 (3.7%)	101 (4.0%)	
White	1856 (36.2%)	767 (30.8%)	
Age at First Detention*, mean ± sd	15.0 ± 1.8	15.5 ± 1.5	<0.0001
Crime Severity (1-22) , mean ± sd	9.0 ± 6.5	10.5 ± 7.5	<0.0001
Felony, n(%)	1950 (38.0%)	948 (38.0%)	0.9802
Days in Detention, mean ± sd	8.7 ± 13.3	11.7 ± 15.2	<0.0001
Assigned to Program 1, 2, or 3 n(%)	419 (8.2%)	276 (11.1%)	<0.0001
Any Mental Visits 30 days prior to detention stay, n(%)	664 (13.0%)	360 (14.4%)	0.0585

There were 8383 subjects (5612 1<sup>st</sup> cohort, 2768 2<sup>nd</sup> cohort) which includes 623 subjects with 2 observations. There were 461 subjects excluded due to prison time (n=231), inpatient hospitalization (n=2), residential treatment facility placement (n=228) or a combination of prison and RTF placement (n=1). An additional 38 subjects were excluded since they were missing gender and race information and 294 as they were missing the crime severity level. Thus the data for analysis consisted of 7628 subjects (5134 1<sup>st</sup> cohort, 2494 2<sup>nd</sup> cohort).

Table 1 shows the demographic and crime characteristic comparisons of the two cohorts. The second cohort was significantly more male and black (p<0.01 for both). Subjects in the second cohort also were significantly older at their first detention with less severe crimes but with more days in detention (p<0.01 for all). Significantly more of the second cohort members were assigned to a program (p<0.01). However, the 2 cohorts committed similar amounts of felonies (p=0.98. The cohorts also had similar rates of mental visits within 30 days prior to their detention stays (p=0.06).

We found that even when mental health screening is instituted, engagement with mental health care does not increase markedly (15% vs. 16.5%). However, we did detect an age interaction where no difference was noted in mental health engagement at 30 days with youth under age 14.5 years, but there were significant differences for older youth. This demonstrates mental health screening is beneficial to engagement for older youth, however, the incremental change was small and further

intervention is warranted to enable mental health care utilization. We will finalize the above analysis and submit it for publication.

## **Discussion and Interpretation of Findings**

### **1) Conclusions to be drawn from findings**

Several conclusions can be drawn from the above analyses. Given space limitations, we will focus on the four most salient findings. First, youth in juvenile detention clearly are vulnerable populations with problems that are interacting across systems. This was clear with results in the area of mental health and physical health screening (STI). Second, juvenile justice reforms impacted the results. Numerous initiatives are occurring in the current locale (limiting detention stays, initiating mental health screening, limiting detentions of minority youth). These initiatives are important, laudible works that also impact public health screening and connection to care efforts upon community reentry. Third, connecting to mental health care upon community reentry is a complicated endeavor from the perspective of youth, families and juvenile justice. Thus, interventions to increase connection to effective mental health care will similarly be complicated (i.e. one size will not fit all locales). Fourth, the role of insurance clearly impacts care engagement. However, it is insurance status, rather than Medicaid termination, that appears to negatively impact mental health care engagement.

### **2) Explanation of study limitations**

We utilized a quasi-experimental, rather than randomized clinical trial. There are inherent limitations with this study design. However, we utilized the study design to study novel issues related to juvenile justice, including juvenile justice reform. Additionally, we focused only on detained youth. The majority of youth in juvenile justice are arrested, not detained youth. Thus, in future research applications we also plan to study arrested youth. Lastly, we did not have a comparison cohort of non-juvenile justice involved youth. This made some of the project less applicable to broader groups. Again, this is an issue we seek to address in future research projects.

### **3) Comparison with findings from other studies**

We found that 15-17% of youth upon community reentry made a mental health appointment. This compares to Despite increased mental health screening in juvenile detention centers, engagement with mental health care upon release continues to be problematic with only with 6 to 8% of incarcerated youth receiving a mental health referral or treatment upon community reentry.<sup>3,4</sup> Thus, rates of mental health care connection are higher than other locales, but still very low. Some of the research we completed through this project is difficult to compare to other studies since little is known concerning insurance status, impact of juvenile justice reform on STI and mental health screening, and no other studies have explored the role of mental health screening on STI.

### **4) Possible application of findings to actual MCH health care delivery situations**

There are several implications of the current findings. First, conducting mental health screening alone does not increase connection to mental health care. Thus, more intense interventions as well as system wide changes, are needed, in order to connect youth with mental health care. Secondly, overall, we found good rates of connection to medical health for youth in juvenile justice. Hence, medical health care may be a nice avenue to increase positive health behavior as well as enable connection to mental health care. We will begin to explore this as a possible avenue to better mental health care. Thirdly, mental health and STI screening should be standard care for youth in detention centers. Additionally, there is some pilot evidence from our project that screening for arrested youth is also necessary. This is an avenue of interest to explore more thoroughly.

## 5) Policy suggestions

Several policy suggestions are relevant. Based on this research. First, although Medicaid termination was not an endemic issue among youth in detention, it was more common among youth committed to juvenile prison. Thus, public policy should be amended to enable Medicaid continuity. We were able to amend Indiana law so Medicaid termination does not occur. National public policy should follow suit. Secondly, juvenile justice reforms are important (limiting number of youth detained as well as disproportionate minority contact). However, public policy regarding public health efforts for screening has not followed recommendations for juvenile justice reform. Thus, we encourage public policy makers to consider the public health impact of

## 6) Suggestions for further research

Based on the above findings, we determined focuses of future research should seek to understand the role of neighborhood, incarceration, race and gender on STI; the characteristics of arrested, non-detained youth, and develop a brief intervention for engagement in mental health care. Below we describe 3 current or pending grant applications that seek to explore those areas.

Dr. Sarah Wiehe (Assistant Professor, Indiana University School of Medicine) received a two year NIH/NICHD R21 titled “Disparities in sexually transmitted infections among young women: Role of individual- and community-level exposures to incarceration and crime.” The goal of this project is to use incarceration and clinical data linked at the *individual* level over a ten-year period; we will investigate the association between incarceration, crime, and risk of STI. Specifically, we will address how and why differences exist by age, area of exposure, and incarceration agency, and over time. Most importantly, we will evaluate how differences in exposure to individual and community incarceration and crime may contribute to STI disparities by race. Dr. Aalsma is a Co-I for this project and pilot data from the HCADY led to the concept for this project and was invaluable to this project receiving funding.

A second project, that is pending, focuses on the epidemiological health burden, connection to mental health care and impact on costs for arrested youth. Through pilot data gathered from HCADY, it was discovered that arrested youth evidence significant burden for STI and are as likely to have mental illness as detained youth. Thus, an R40 research application was submitted focused on arrested, non-detained youth.

Lastly, Dr. Aalsma has a project under review (submitted November 30, 2010) focused on increasing mental health care engagement for detained youth. Based on the above mental health care engagement data, as well as results from the Qualitative HCADY Project, an application based on brief motivational interviewing was submitted to NIH/NIMH. The project, titled “Brief Motivational Interviewing at Detention Release to Facilitate Engagement with Mental Health Care” will be reviewed in May, 2011.

Due to the HCADY Project, a series of projects have been initiated to increase the health and well-being of this understudied and vulnerable population.

## List of products (manuscripts)

Published/in press

Aalsma, M.C., Tong, Y., Wiehe, S.E. & Tu, W. (2010). The impact of delinquency on young adult sexual risk behaviors and sexually transmitted infections. Journal of Adolescent Health, 17-24.

Aalsma, M.C., Wiehe, S.E., Blythe, M., Tong, Y., Harezlak, J., & Rosenman, R. (in press) The relationship of mental health and STI among detained youth. Journal of Community Health.

Under review

Aalsma, M.C., Blythe, M., Tong, Y., Harezlak, J., & Rosenman, M. (under review) Insurance status of urban detained youth.

Aalsma, M.C., Gudonis, L.C., Blythe, M., Jarjoura, R., Tong, Y., Harezlak, J., & Rosenman, M. (under review) The consequences of juvenile detention reform for mental health and STI screening among detained youth.

Aalsma, M.C., Brown, J.R., Holloway, E.D. & Ott, M.A. (under review) Connection to mental health care upon community reentry for detained youth: A qualitative study.

In progress

Aalsma, M.C., Blythe, M., Tong, Y., Harezlak, J., & Rosenman, M. Medicaid termination among detained youth.

Neff, M., Aalsma, M.C., Rosenman, M. & Wiehe, S.E. Psychotropic medication refill patterns among detained youth.

Terrell, L.R., Blythe, M., Rosenman, R. & Aalsma, M.C. A comparison of mental health symptoms in detained adolescents with and without health care prior to detention. Presented at the 2010 Society for Adolescent Medicine, Toronto, Canada.

Suman, P., Holloway, E.D., Brown, J.R. & Aalsma, M.C. A qualitative study of parent and detained youth perceptions of psychiatric medication. To be presented at the 2011 Society for Adolescent Health & Medicine, Seattle, Washington.

Vachon, D.D., Holloway, E.D., Hoch, S., Wiehe, S.E. & Aalsma, M.C. Racial heterogeneity as a protective factor for mental illness for detained youth. To be presented at the 2011 Society for Adolescent Health & Medicine, Seattle, Washington.

Dolittle, J.J., Pyle, I., Rosenman, M. & Aalsma, M.C. Disposition after juvenile detention: The role of mental health screening on community reentry. To be presented at the 2011 Society for Adolescent Health & Medicine, Seattle, Washington.