Published in final edited form as:
Child Youth Serv Rev. 2007 April 1; 29(4): 518–544. doi:10.1016/j.childyouth.2006.10.006.

Service use after court involvement in a sample of serious adolescent offenders

Edward P. Mulvey[*], **Carol A. Schubert**, and **He Len Chung**
Western Psychiatric Institute and Clinic, University of Pittsburgh School of Medicine, USA

Abstract

The juvenile justice system faces a difficult challenge when providing services to serious adolescent offenders, having to balance community safety concerns with hopes for successful intervention. Increasing the effectiveness of this system rests partially on having a clearer picture of the regularities of current service provision to these adolescents. This study describes the types of services received by a large (*N*=868) sample of adjudicated serious offenders from two metropolitan areas over a two-year follow-up period after adjudication in court, and examines whether indicators of need for services determine the types of services received in the juvenile justice system. Findings indicate that: 1) the level of specialized services received is rather low, 2) there is considerable site variability, 3) the service needs of adolescents sent to different types of settings appear to be generally equivalent, 4) state training schools appear to provide about the same level of services found in contracted provider settings, and 5) need is an inconsistent determinant of service provision.

Keywords

Services; Juvenile offenders; Need for services

1. Introduction

The juvenile court has long grappled with fulfilling its joint, and often contradictory, mission of protecting the community from serious crime and giving adolescent offenders the resources needed to redirect their lives (Rosenheim, Zimring, Tannenhaus, & Dohrn, 2002). In recent times, the protection of the public has emerged as a more explicit and valued goal of juvenile justice, with less restrictions on the transfer of juveniles to adult court, more punitive punishment policies, and more skepticism about the value of intervention (Zimring, 1998; Feld, 2000). Even in these times, however, treatment has not been abandoned as a component of juvenile justice policy. The juvenile justice system still has a strong community identity, as well as a vast amount of resources, invested in averting future crime by providing appropriate services to adolescent offenders. In addition, case law has consistently reinforced the idea that the juvenile system has a strong obligation to provide treatment (Slobogin, 1999). Although the terrain has shifted somewhat, rehabilitation and punishment still co-exist as central policy goals of juvenile justice.

Balancing social service intervention and punishment is most difficult when considering adolescents who, despite their age, either commit crimes that the public fears (e.g., armed robbery) or repeatedly commit somewhat serious crimes (e.g., burglary). These serious

*Corresponding author. University of Pittsburgh School of Medicine, Western Psychiatric Institute and Clinic, 3811 O'Hara Street, Pittsburgh, PA 15213, USA. Tel.: +1 412 647 4720; fax: +1 412 647-4751. mulveyep@upmc.edu (E.P. Mulvey)..

adolescent offenders (see Loeber, Farrington, and Waschbusch (1998) for definitional frameworks) present real risks to community safety and their actions warrant strict restrictions. At the same time, they are still adolescents, still developing in multiple domains of their lives, still connected to their families, and difficult to "write off" wholesale because there may still be hope for positive change. One of the most difficult challenges facing the juvenile justice system lies in determining how to use particular sanctions and interventions judiciously with these offenders.

The court has long addressed this problem by filtering to adult court those adolescents who commit selected serious crimes and those thought to be beyond rehabilitation, while providing interventions to "correct" the issues that promote criminal offending in the rest of the adolescents. From the early efforts of probation officers to provide guidance to community resources (Levine & Levine,1992), through institutional programs to alter attitudes using group process (e.g., Gottfredson, 1987), to the modern day efforts to re-integrate adolescent offenders into the community (Altschuler, Armstrong, & MacKenzie, 1999), the emphasis has been on identifying and altering the most troubled aspects of an adolescent's intrapsychic or social world that could be contributing to their continued criminal involvement.

The history of these efforts has not been terribly encouraging. For a long time, the accepted wisdom was that very little worked. Newer reviews (Aos, Phipps, Barnoski, & Lieb, 2001; Lipsey, 1999; Sherman et al., 1997), however, find evidence of positive effects from various forms of intervention (a general reduction in arrests of about 20%) and several promising approaches for intervening with serious adolescent offenders (e.g., comprehensive, family-based approaches). While this literature has made substantial strides in determining "what works", it is still far from determining how the system works or understanding the limits or potentials of existing sanctioning or intervention practices. Only continued investigation of the operations of the current juvenile justice system can sort out why certain forms of interventions might work for certain individuals or how they might work better.

Interventions with serious adolescent offenders may be effective or ineffective for several reasons aside from the demonstrated efficacy of the intervention approach itself (Mulvey & Woolard, 1997). First, certain services simply may or may not be delivered. Placement in an institutional setting or enrollment in a program does not guarantee receipt of all available services. Particular services might be selectively delivered within some programs while other programs might deliver a uniform set of services to all program participants. In addition, the scope of available services may differ from one institutional setting or program to another. Also, sadly, sometimes service providers simply do not deliver what they promise. Second, services might not be targeted to the appropriate individuals. Services for specific problems (e.g., substance use) may not be delivered at all to individuals with clear needs or might be delivered to adolescents who do not need them. Even if there is a strong link between an adolescent risk behavior (e.g., alcohol use) and antisocial behavior, poorly targeted service delivery will necessarily prove ineffective when applied broadly, Those with the problem who do not get the service will continue to offend, and those without the clear problem who get the service should show no real impact on their offending. Finally, services may be delivered to adolescents with demonstrated needs, but these needs may have only limited impact on the continuation of offending. If an adolescent is violent because of poor anger control and also has gang involvement, intervention aimed to only reduce gang involvement might be appropriate and even effective, but it may still show little impact on his continued fighting.

Surprisingly little systematic information is available about how or how effectively the current juvenile justice system provides services to serious adolescent offenders. A voluminous literature does exist on how adolescent offenders progress through the court systems (e.g., Snyder & Sickmund, 1999), While this literature provides valuable insights into how different

types of cases are processed, it is generally limited regarding the characteristics of the adolescents processed or the services provided after disposition. There is also a very large literature on how selected samples of adolescent offenders fare after involvement with certain sanctioning or intervention approaches (e.g., transfer to adult court, see Bishop, 2000). Again, however, information about the types of services received during the period after court involvement is sparse, and examination of outcomes other than re-arrest is rare. Longitudinal investigations (e.g., see Thornberry & Krohn, 2003), directed mainly toward identifying risks for future offending in high risk cohorts, sometimes address questions surrounding service provision. In these investigations, the characteristics of those adolescents who receive certain types of services are usually identified, but a comprehensive picture of service provision over time is rarely provided. In these studies, there is also rare information about the treatment or sanctioning experiences of serious adolescent offenders as a separate group and the depiction of service involvement is necessarily general.

The value of having more detailed information about services provided to serious adolescent offenders may, however, be substantial. Investigations of the patterns of service provision to troubled adolescents in other service systems demonstrate the potential utility of understanding how these system operations limit or enhance the impact of interventions. For example, studies of the patterns of service provision across the child welfare, juvenile justice, and educational systems show differing rates of detection of problems which are related to the system in which a child begins his/her service career (Hazen, Hough, Landsverk, & Wood, 2004). Perhaps the clearest findings, however, are those showing differential service involvement by race and gender (Burns et al., 2004; Garland & Besinger, 1997), with minority adolescents consistently receiving fewer services. Studies have also identified the possibility that, for minority youth, involvement with the juvenile justice system may be an effective conduit for services (Yeh et al., 2002), but longitudinal data on sequential service use is insufficient to support this possibility (Garland, Hough, Landsverk, & Brown, 2001). Taken together, studies such as these highlight points of leverage in the system for more focused identification and treatment and provide a valuable context for the interpretation of program evaluations.

A growing body of literature has also emerged regarding the identification and treatment of adolescents with mental health problems in the juvenile justice system (Redding, Lexcen, & Ryan, 2005). The impetus for this work comes from a set of related concerns: that a large number of mentally ill adolescents may be undetected in the juvenile justice system, that these adolescents might be treated more appropriately in other settings, that these youth are at high risk of re-offending if left untreated, and that these youth are likely to be damaged by extended system involvement (Grisso, 2004). Numerous studies of youth in the juvenile justice system indicate a prevalence of diagnosable mental disorders at a rate that is 2–3 times higher than the rate in community samples (Cocozza & Skowyra, 2000; Teplin, Abram, McClelland, Dulcan, & Mericle, 2002; Wasserman, McReynolds, Lucas, Fisher, & Santos, 2002). Little research, however, has been conducted on the services received by these adolescents with mental health disorders, and the evidence that exists about the receipt of appropriate services for mental health or other identified problems is almost exclusively based on retrospective reconstruction of records (Garland et al., 2001).

A research agenda aimed at highlighting the type and extent of services provided to serious adolescent offenders is the first step in developing a fully coherent picture of how to improve services for these adolescents. Experience-based information about the types and appropriateness of the services provided to this group allows for a realistic appraisal of what can be expected from juvenile justice system involvement and the formation of an informed opinion about how to provide more appropriate services in this system. The analyses presented here take an initial step in that research agenda.

These results come from a larger longitudinal study of serious adolescent offenders in two major metropolitan areas (Philadelphia County, PA and Maricopa County, AZ) as they make their transition into emerging adulthood (see Mulvey et al., 2004). This study collected comprehensive information about the characteristics of adolescent offenders appearing before the court (between December, 2000 and March, 2003) as well as detailed information regarding the services received over the two years after court adjudication. These data provide a valuable, comprehensive picture of which adolescents are sent to different types of facilities, and the types of services that they receive after court adjudication.

The comparison of service provision in Maricopa County, AZ and Philadelphia County, PA is particularly informative from a policy and planning perspective. These locales have different philosophies regarding the appropriate role of the court and different orientations to the delivery of services to juvenile offenders. During the period of data collection, Arizona operated under an automatic waiver statute for some offenses with no provision for waiver back to the juvenile system, and, as a result, a high rate of placement of juveniles into the adult criminal justice system (29%; 192/654). Pennsylvania, on the other hand, had a decertification process for its waiver to adult court, and a relatively low rate of moving serious juvenile cases to the adult court (7%; 51/701) (Griffin, Torbet, & Szymanski, 1998). In addition, the service system in Arizona was dominated by state-run facilities, while Pennsylvania relied on an extensive system of private service providers. Based on the most recent data regarding adolescents in care in the juvenile justice system (Office of Juvenile Justice and Delinquency Prevention, Census of Juvenile in Residential Placement Databook, 2004; Puzzanchera, Finnegan, & Kang, 2005), Arizona and Pennsylvania each had only about .2% to .3% of their adolescents (between the ages of 11 and 18) in residential care in 2003. In Arizona, however, about 68% of these committed adolescents were in state-run facilities; in Pennsylvania, about 62% were in privately-run facilities. Examination of the provision of appropriate services for serious adolescent offenders in these two locales thus provides a glimpse at how particular policy contexts eventually affect the level and types of services provided to serious offending adolescents.

This paper accomplishes three things. First, it describes the placements and services provided to this group of serious adolescent offenders during the two-year follow-up period after adjudication. These analyses also provide information about the extent of race/ethnicity and gender differences in service provision to serious adolescent offenders. Second, it provides a comparison of the patterns of placement and service provision in the two locales. Finally, it examines whether the level of an adolescent's risk for future offending/need for services is related to the placements or services received. Taken together, these analyses provide a comprehensive picture of the patterns of service provision to this subgroup of offenders and a picture of the efficiency of the system in providing services to adolescents most in need.

2. Methods

2.1. Participants

Participants in the Pathways to Desistance project are adolescents who, between the age of 14 and 17, were adjudicated in the juvenile or adult court systems in Philadelphia County, PA and Maricopa County, AZ for a serious offense (almost entirely felony offenses)[1]. A total of 1355 adolescents are enrolled, representing approximately one in three adolescents adjudicated on the enumerated charges in these two locales during the recruitment period. Data collection for this longitudinal study is ongoing but all participants have passed through the opportunity to complete their 24-month follow-up interview, and data for the current analyses come from that

[1]A list of the charges considered “serious” for the purposes of enrollment may be obtained from the corresponding author.

initial two-year period. Information regarding the theoretical foundation for the study can be found in Mulvey et al. (2004) and details regarding recruitment, a description of the full sample and the study methodology are discussed in Schubert et al. (2004).

In this paper, we analyze the service histories of a subset of the full sample (*N*=868) because early versions of the follow-up interview questionnaire lacked the detailed questions regarding service provision upon which these analyses are based. The 868 participants included in these analyses are drawn equally from both sites (425, or 49%, from Philadelphia County and 443, or 51%, from Maricopa County). Because this paper focuses on service patterns over two years, it includes youth processed in either the juvenile or adult systems as well as those sent to institutional care and those place on probation as a result of the study index petition. Twenty-four percent of the participants included in these analyses (*N*=211) were processed in the adult court system, with the vast majority of these (*N*=170) from the Maricopa County site. Of those youth processed in the juvenile court system, nearly half (51%) were given probation as the result of the study index petition and the remaining (49%) were sent to placement.

The sample is overwhelmingly (84%) male, and the average age at the baseline interview is 16.6 years (S.D.=1.08). The sample is predominantly minority; 41% African American, 34% Hispanic (mostly Mexican–American descent), 20% Non-Hispanic Caucasian, and 5% other ethnicities. The majority of the sample (66%) comes from a household with a single parental figure. In this household, the mother was the most frequently present parental figure and, in most instances (68%), she had no education beyond high school. For most of the adolescents (43%), the most serious adjudicated charge that qualified them for enrollment in the study was a serious crime against person (e.g., armed robbery, felony assault), with 26% found guilty of a property crime, 15% of a drug offense (the result of an imposed cap on drug offenses as noted in Schubert et al., 2004), 10% of a weapons offense, and the remaining 6% found guilty of an assorted group of other offenses (e.g. felony conspiracy, intimidating a witness). The average number of prior petitions to juvenile court was two (S.D.=2.5) at the time of the study index petition. Based on information collected at the baseline interview, 69% had a prior institutional placement and 47% had previously received community-based services.

There were no significant differences between the 868 study participants included in these analyses and those excluded (due to insufficient services data) in terms of gender, ethnicity, age at enrollment, number of prior petitions, single parent household status, prior community-based services and prior institutional placement. There were no significant differences between the included and excluded juvenile cases in terms of case disposition (probation versus placement). However, significantly more of those included in the analysis (6%) had a most serious adjudicated charge in the “other” category compared to those in the excluded group (4%; test of proportions $z=2.02$; $p<.05$).

2.2. Procedures

Potential participants were identified from a daily review of court record information in each site. Adolescents and their parents (or a participant advocate in situations where parental or guardian contact was unobtainable) provided informed consent to participate in the study, with 20% of those approached (either the adolescent or the parent) declining to participate. A baseline interview was then conducted within 75 days of adjudication for youths in the juvenile system and, for those in the adult system, within 90 days of either a decertification hearing in Pennsylvania or an adult arraignment hearing in Arizona. We then attempted to conduct a follow-up interview (“time-point” interview) every 6 months thereafter for the next two years. In most cases (62%), the baseline interview occurred after the disposition hearing, and in the majority of the remaining cases, the disposition hearing occurred before the six-month follow-up interview.

Interviews were done at the participants' home, institutional placement or in a public place such as a library. Attempts were made to provide a private setting or to conduct the interview out of the hearing range of others within each of these locations. Trained interviewers read each item aloud and respondents generally answered aloud. However, in situations or in sections of the interview where privacy was a concern, a portable keypad was provided as an option to obtain a nonverbal response.

The computer-assisted interview assesses status and change across multiple domains such as individual functioning, psychosocial development and attitudes, family and community context and relationships[2]. On average, follow-up interviews took two hours to complete and participants were paid for their participation.

A portion of the interview uses a computer-programmed life-calendar approach. Previously developed methods for structuring life-event recall for offending and antisocial behavior as well as mental health service use have been shown to provide reasonably accurate information about the temporal sequencing of events during the period covered by an interview (Caspi et al., 1996; Horney, Osgood, & Marshall, 1995). This approach is particularly suitable for capturing the nature, number and timing of important changes in the life circumstances of these youths, one of the major goals of the study.

Retention has been very high. Overall, 2% of participants dropped out of the study and 2% died during the follow-up period. On average, we completed 92% of the expected interviews at each time point. As a result, at the two-year point, 84% of the participants did not miss any interviews (they have a baseline and four time point interviews).

2.3. Measures

2.3.1. Service involvement—Self-reported participation in both residential and community-based social services was assessed through a modified version of the Child and Adolescent Services Assessment (CASA; Burns, Angold, Magruder-Habib, Costello, & Patrick, 1992). The CASA was designed to assess the use of 31 mental health and social services via self report from youth age 8–18 and their parents. The instrument collects information regarding type of service use, frequency (if in the community) or length of stay (if institutional), and focus of treatment (Ascher & Farmer, 1996). If a stay in any of the named types of settings was acknowledged, more in-depth information was obtained, including the facility name and the length of each stay. The timing of that stay within and across the recall periods was determined by plotting the start and end date of the stay on the life calendar. Results presented here are based on these adolescent reports.

Service involvement can be characterized in terms of a) where the service is delivered, or the *setting*, and b) the modality of the service provided, or the *type* of service (Mulvey & Reppucci, 1984). Considering both of these characteristics of service delivery allows for a more differentiated view of involvement with services. For example, group counseling may be offered in institutional settings or in the community, with possibly very different intensities and effects (Andrews et al., 1996).

We classified service involvement as occurring in one of two settings, residential care or community-based. Individual residential facilities were classified into groups based on their general mission and target population. The groupings were derived from several discussions with service providers and policy-makers from both sites and other locales (including juvenile court service administrators, practitioners, lawyers and judges). These experts considered the seven general categories used in the CASA for residential placements as overly broad, and the

[2]The full set of domains covered and references for the instruments used may be obtained from the corresponding author.

groups were modified as a result. Juvenile court administrators and service providers from each site assisted in classifying particular facilities when their group membership was questionable.

Residential care settings: Nine categories of residential care settings were examined:

1. *Drug or alcohol treatment unit*. These are facilities where the primary focus is the provision of substance abuse treatment services. Detox and longer term substance use treatment programs are both included, with the vast majority being longer term treatment facilities.
2. Psychiatric hospital or psychiatric unit of a general hospital. These are settings which provide inpatient acute care to evaluate and stabilize individuals with mental health or behavioral problems.
3. *Shelter*. These facilities provide short-term, non-secure, temporary out-of-home care.
4. *Jail and prison*. These settings have incarceration as the main goal, and are almost all adult settings. Jails, usually locally run, hold people until trial or for relatively short sentences after trial. Prisons are usually state-run and hold people for a longer term after trial. Federal adult detention centers and Immigration and Naturalization Services (INS) detention centers are also included in this category, although these constitute a very small portion.
5. *Detention*. These are juvenile facilities where adolescents await their adjudication hearing or more permanent placement after adjudication and disposition.
6. Pennsylvania Youth Development Centers (YDC)/Arizona Department of Juvenile Corrections (ADJC). These facilities are state-run, secure juvenile facilities, formerly characterized as “state training schools”. They provide secure custody, education and treatment to committed youth.
7. *Contracted residential treatment — mental health*. These settings have an integrated residential program of therapies and activities. The primary focus of treatment is on the youth's mental health needs, and the facility targets mentally ill adolescents.
8. *Contracted residential treatment — general*. These settings provide residential care within a structured environment. A range of services may be offered, usually centered on a specific model of intervention (e.g. peer culture, physical challenge), and there may be varying amounts of security and access to the community.
9. *Other*. This includes any residential setting not captured by the above categories such as a residential military-style high school or YMCA.

For this study, we consolidated information across all the follow-up periods (through 24 months) and constructed three variables to characterize the adolescent's movement among these different service settings: 1) length of stay in each setting; 2) number of unique stays; and 3) number of unique facilities. The “unique stays” variable indicates the number of different periods spent in a given residential setting separated by time in the community. The “unique facilities” variable reflects the number of different facilities the youth was in. Over the course of the 24 months an adolescent could have had multiple stays in the same facility or across several different facilities.

Residential care services: If a stay in a residential setting was greater than six days, adolescents were asked if they received any of the following types of services: a) treatment for a drug and alcohol problem (e.g., counseling, groups, meetings like AA or NA); b) sessions with a psychologist or psychiatrist; c) group therapy sessions other than for drug or alcohol issues; d) sessions with a priest, minister, clergy or healer of any kind; e) family-based treatment; f) treatment on a unit for mental health or emotional problems; g) anger management

or social skills training sessions; h) job skills or vocational training; or i) any other services not mentioned[3]. Definitions of each type of service were provided.

Community-based services: Participants were also asked if they received any of seven services (for drug, alcohol or other behavioral or emotional problems) while in the community: a) individual treatment; b) group services; c) in-home services; d) partial hospitalization/day program; e) school-based services; f) job training or job placement; or g) case management. Again, definitions and examples of these services were provided. For each community-based service endorsed, information was obtained regarding the frequency, focus (for drug or alcohol treatment, for anger management or social skills training) and circumstances (whether the service was court-ordered, whether youth attended alone or with family).

Validity of self-report services data: We have confidence in the accuracy of the self-reported service data for two reasons. First, test-re-test reliability conducted by the authors of the CASA found very high reliability for reports of outpatient services (kappa=.8) and a moderate to high range of reliability (kappa=.6 to 1.0) for inpatient, out-of-home, and juvenile justice services (Ascher & Farmer, 1996; Farmer, Angold, Burns, & Costello, 1994). Our approach mirrors that used by these investigators, and we would expect our reliabilities to be about the same as a result.

Second, using official records in one of the data collection sites (the ProDES system in Philadelphia), we found high agreement between this information and the self-report data regarding the occurrence and timing of the receipt of residential services. The ProDES information system is a well-established and longstanding cooperative effort between the Philadelphia Department of Human Services and the Crime and Justice Research Center to track service involvement for youth in the juvenile justice system (Jones, Harris, & Fader, 1999). We compared the ProDES reports of service involvement over a two-year period to our reports in the Pathways study data set for the sample used here. Our self-reported stays in settings other than jail and detention facilities (these are not covered by the ProDES system) were corroborated 96% of the time in the ProDES system (*n*=521). Conversely, of the participants who overlapped across the two studies, 97% of the stays recorded in ProDES were also present in our self-report data (*n*=343). In addition, there was high agreement about the timing of residential facility stays. We found 97% agreement regarding the intake and discharge month if we allowed for a two-month discrepancy in the reports (*n*=175) and 90% agreement if we allowed for only a one-month discrepancy (*n*=175). Although we do not have access to parallel validation data for the Maricopa County site, it seems reasonable that these results would generalize to the reports of service use from that site as well.

2.3.2. Risk/need indicators—Seven risk/need domains were considered in the present study: prior criminal behavior, antisocial attitudes, parental deviance, association with antisocial peers, school difficulties, mood/anxiety problems, and substance use problems. We chose these domains because they represent widely acknowledged variables linked to future offending, particularly serious and violent delinquency, and some include malleable factors that may be changed by interventions (e.g., see Hawkins et al., 1998). Numerous studies have documented an increased likelihood of poor outcomes among youth with a serious history of antisocial behavior (e.g., early onset of offending, Moffitt, 1993), antisocial attitudes and beliefs (e.g., favorable attitudes toward violence and breaking the law, Zhang, Loeber, & Stouthamer Loeber, 1997), parental deviance (e.g., parental criminality and substance use,

[3]We also asked about attending school or receiving GED classes in these facilities. These results are not included here, however, because their relevance is dependent on the age of the adolescent, their school status, their length of stay in the facility and the regulations governing the facility in question. The purpose of this paper is to provide a broad overview of the services received by this sample of serious adolescent offenders, and interpretation of these data became overly complex because of these factors.

Farrington & Loeber, 2000), peer deviance (e.g., delinquent friends, Thornberry, Krohn, Lizotte, & Chard Wierschem, 1993), academic problems (e.g., truancy, Farrington, 1989), mood disorders (e.g., depression, Marmorstein & Iacono, 2003), and substance use disorders (e.g., drug abuse, Hussong, Curran, Moffitt, Caspi, & Carrig, 2004). To reduce potential problems from multicollinearity, we constructed a single measure for each of these constructs from multiple indicators. Most of the variables were collected from adolescents during baseline interviews, and all measures were scored or recoded so that higher values reflect greater levels of risk or disadvantage. To derive the composite measures for the seven risk/need domains, we used the full sample of Pathways study subjects (N = 1355), and performed separate confirmatory factor analyses (CFAs) for each of the constructs.

The CFAs, performed using the structural equations modeling program EQS 6 (Bentler, 2000), resulted in indicator loadings that were all significant in the expected direction at $p<.05$, and showed good model fit according to the following fit statistics: the chi-square (χ^2); comparative fit index (CFI), indicating the improvement of the overall fit of the model relative to a null model; and root mean square error of approximation (RMSEA), estimating the residual covariance between the estimated population covariance and the sample covariance matrices (Browne & Cudeck, 1993; Hu & Bentler, 1999; MacCallum, Browne, & Sugawara, 1996). Fit statistics and indicator loadings for the CFA analyses are not presented here, but are available from the corresponding author upon request. Table 1 presents information about the specific measures used to construct each of the indicators and the alpha obtained in the current sample for the measure (when appropriate).

We computed a *composite score for each risk/need domain* by taking the mean score across all indicators within the domain of interest. If a domain was missing more than one of the indicator values, we did not compute a total score, and used a mean substitution method to handle the missing value.[4] Table 2 presents the intercorrelations among the risk/need domain scores for the sample used in the present study (N = 868).

In addition to computing scores for each risk/need construct, we created a *cumulative risk/need score* across all the constructs. First, we calculated a binary score for each risk/need construct; cases with composite scores greater than one standard deviation above the sample mean (about 16% of the sample) were given a score of 1 (i.e., high risk/need) and all others were given a score of 0. Because of extreme positive skew with the *mood/anxiety problems* and *substance use problems* constructs, we simply used the presence of any indicator as a marker of high risk for that construct. We then computed a cumulative risk variable for each individual by adding up the binary scores across the domains.

3. Results

We focused data analyses on three issues. First, we examined the types of settings and services that the sample received over two years after their baseline interview. Second, we looked at service involvement and sanctioning for “placed” adolescents during their “post-institutional stay period”, during the re-entry period following their initial institutional care (Altschuler et al., 1999). Finally, we examined the overall relationship between risk/need factors and service provision in residential settings, as well as the match between specific risk markers and services aimed at those identified needs.

We present findings broken down by court system (adult versus juvenile) and site (Philadelphia County versus Maricopa County) to highlight the similarities and differences among these

[4]CFAs for each of the domains was re-tested with a complete dataset (i.e., no missing data across any of the indicators, N = 1061). Each of these CFAs showed acceptable fit with indicator loadings all significant at $p<.05$.

systems of processing. We also consider how patterns of service provision differ in terms of gender and ethnicity.

3.1. How much service involvement do these offenders have in the first two years after adjudication?

3.1.1. Settings—Table 3 summarizes the settings experienced by adolescents in the sample during the two-year follow-up period, including any institutional stay resulting from the court disposition related to study enrollment. There are two general points to note. First, there is little involvement with specialized service settings for this group of offenders. The prevalence rates for being in a mental health facility or drug treatment center are well below 10%, regardless of the locale or the system processing the adolescent. Second, there is a large difference between the sites in the proportion of cases handled in the adult court system. Philadelphia processes approximately 10% of these serious offenders in the adult system, whereas Maricopa County processes approximately 38% in the adult system. The experiences of the adolescents in the adult system do not look different across the sites, however. An overwhelming majority of these adolescents in both sites (Philadelphia County: 85%; Maricopa County: 90%) have at least one institutional stay (almost exclusively jail/prison) during the follow-up period and they spend about the same amount of time in these settings. Given the differential processing systems and the similar outcomes for those processed in the adult system, the adolescents in the Maricopa County sample have about a 50% chance of experiencing jail/prison during the two-year follow-up period, while the adolescents in the Philadelphia County sample have about a 33% chance of such an experience.

Considering just the adolescents who were processed in the juvenile system, we found that almost three-quarters of these youths across both sites had at least one stay in an institutional setting (Philadelphia County: 84%; Maricopa County: 63%) during this period, with the adolescents in the juvenile system in Pennsylvania more likely to experience such a stay (test of proportions $z = 6.27$; $p<.001$). As seen in Table 3, however, the increased rate of institutional placement in Pennsylvania appears to be the result of a reliance on contracted residential placements in that site. The prevalence rates for experiencing jail/prison or detention among juvenile cases are about the same in both sites, the rates for placement in state run training schools (YDC/ADJC) is higher in Arizona, and the rates for placement in contracted provider agencies is much higher in Pennsylvania. Approximately half of the adolescents processed in the juvenile system across both sites received some type of community-based treatment during the two-year period (49% in Philadelphia County and 57% in Maricopa County). Looking at the adult court cases, there is a larger proportion of these adolescents in the Maricopa County sample who received community services (34% versus 7%), but they received them for a much shorter period.

There were few differences in the overall frequency of placements between the adolescents in the juvenile and adult systems. Each experienced about the same number of unique facilities (2.5) during the two years. Individuals processed in the adult court across both sites, however, had significantly more *unique stays* than adolescents processed in the juvenile court ($t=-4.82$; $p<.001$; $M=4.3$ (S.D.=1.85) and $M=3.5$ (S.D.=1.95), respectively).

3.1.2. Types of services received in selected residential settings—Table 4 shows services reported by adolescents during stays in the five most commonly used institutional settings. Because an adolescent can provide a report on more than one facility (i.e., an adolescent could have been in both a jail and a contracted residential setting during the follow-up period), these rates of service receipt are not independent. As a result, statistical comparisons across setting types were not conducted.

Nonetheless, there are some clear patterns across these tables. First, and not surprisingly, the level of services received is generally lower in the detention and jail/prison settings in both sites. The prevalence rates of adolescents reporting receipt of each service in residential contracted or state facilities are several times the rates seen in detention or jail/prison settings. The level of services offered in the jail/prison settings look roughly comparable across sites. Second, the levels of services reported in the state training school facilities in both sites (the YDC/ADJC settings) are indistinguishable from the levels of service reported in the contracted residential settings. In fact, the rates of reported services are higher in several categories (e.g., drug and alcohol services) in the state training schools.

3.1.3. Types of services received in the community—Table 5 summarizes the proportion of adolescents who report receiving each type of community-based service over the two-year follow-up period. Overall, adolescents in the juvenile system are more likely to get some type of community-based services than those in the adult system (test of proportions $z = 6.48$; $p<.001$), and those in the Maricopa County juvenile system are more likely than those in the Philadelphia County juvenile system to receive some community services (test of proportions $z=-1.99$; $p<.05$). There were no significant differences in the duration (number of days received) of services between those processed in the adult system versus those in the juvenile system.

3.1.4. Ethnicity/race and gender differences—Tables 6 and 7 present summaries of separate χ^2 analyses conducted to examine the association between a) ethnicity/race and service use, and b) gender and service use for each of the interventions discussed above. These associations were only examined for settings and services reported by ten or more adolescents. As shown in the top section of Table 6, ethnicity/race had a predictable, but rather limited, association with placement in the different settings across the two locales. There were fewer minority adolescents in contracted residential or specialty care and fewer white adolescents in jail/prison. None of these associations were statistically significant, however, when a post-hoc Bonferroni correction was applied to the alpha level to account for the number of comparisons examined. Similarly, in the bottom section of this table, only one test was statistically significant (when corrected) regarding the receipt of community services. White adolescents in the adult system appeared to receive more group-based services.

Some of the gender differences in Table 7 were a bit stronger. More females in the juvenile system reported the use of contracted residential settings, and more males reported stays at secure settings. In the adult system in Pennsylvania, more females went to shelters. Regarding community-based services, there were no statistically significant (corrected) associations. The trends, however, are for females in the juvenile system to receive more services.

3.2. What services are provided in the period after release from an institution?

To address this question, we used court record information and our monthly-level self-report data regarding service use and living arrangements. Using court record information, we ascertained the date and facility where the adolescent was placed as a result of the disposition hearing, and, using our self-report data, we determined the month when the disposition placement ended. We then examined service involvement from this point of release up to the end of the 24-month follow-up period. This analysis is limited to adolescents processed in the juvenile system. In the adult cases, too many of the adolescents were still in placement at the end of the 24-month period or had too few aftercare months to make sound conclusions.

Of the adolescents in this sample in the juvenile system, 253 (66%) in Philadelphia County and 64 (24%) in Maricopa County were placed in institutional care after disposition. The average duration of these dispositional stays was nearly identical across sites, although more

variable in Maricopa County (Philadelphia County: 287 days (S.D.=145.51); Maricopa County: 289 days (S. D.=204.61). The average time after this initial institutional placement considered in these analyses was 15 months (S.D.=8) for the Philadelphia County cases and 20 months (S.D.=7) for Maricopa County cases. Twenty-five youth from Philadelphia County (10%) and 13 youth from Maricopa County (5%) were not released from their disposition placement as of the 24-month interview.

Table 8 presents information about the prevalence of other institutional stays after release from their initial dispositional stay at each site. These percentages indicate the proportion of the sample who reported a stay in each type of listed facility over this "post-institutional stay period." Considering the proportion of individuals in the sample, 67% of youth from Philadelphia County and 80% of those from Maricopa County had at least one subsequent institutional stay, a significant difference by site (test of proportions: $z=-2.08$; $p<.05$). The mean number of months between the release from the disposition stay to the next stay of seven days or longer (6 months) was the same for both sites.

Table 9 gives similar prevalence rates for involvement with community-based services during the follow-up period. The sites were quite similar in the overall rate of community-based services provided, with 42% of the adolescents in Philadelphia County and 51% of those in Maricopa County receiving some sort of community-based service in the aftercare period. There was no significant difference in the total duration of the involvement with community services.

3.3. How is individual risk/need related to the receipt of services in juvenile residential settings?

As mentioned earlier, the juvenile justice system, more than the adult system, is still strongly wedded to the idea of providing services to reduce the likelihood of re-offending. In theory, this is best done by targeting interventions toward reducing risks or addressing needs related to an adolescent's likelihood of continued antisocial behavior. In this study, we examined relations between individual levels of risk/need (described in Table 1) and service utilization in two ways. First, we examined how cumulative risk was related to the range of services provided across different settings. Second, we examined how specific risks/needs were related to the use of services targeted for those identified problems.

For this set of analyses, we focused on only on youths who were processed in the juvenile court system and spent time in the five most commonly used residential settings. Compared to youths who were processed in the adult court, those in the juvenile justice system showed lower levels of peer deviance ($t(866)=-2.69$, $p<.01$) and lower levels of prior criminal behavior ($t(866)=-3.89$, $p<.05$); when examined separately by site, the former comparison was important only in Maricopa County, and the latter was important only in Philadelphia County. A series of *t*-tests and χ^2 tests revealed no significant differences among the court groups regarding the other risk/need indicators (listed above in the Methods section).

3.3.1. Gender, ethnicity/race, site, and risk/need—Prior to conducting the main analyses, we first examined potential differences in levels of risk/need by gender and ethnicity/race. *T*-tests showed that males had higher scores than females on all of the continuous risk factors except school/academic problems ($t(866)=-0.88$, ns); χ^2 tests showed, however, that more females than males had significant affective/mood problems (33% versus 16%, respectively; χ^2 (1, $N=868$)=10.4, $p<.01$). Regarding ethnic differences, one-way ANOVA tests revealed no differences in youths' history of antisocial behavior, but significant differences for the other continuous risk variables. Using post-hoc Bonferroni-adjusted alpha levels, Hispanic youth had higher scores than the other ethnic groups on the attitudes and peer deviance constructs, Caucasian youth had higher parental deviance scores than Hispanic youth, and

Hispanic youth had more school difficulties than African-American youth. χ^2 tests revealed no ethnic differences regarding mood/anxiety problems, but showed that Hispanic and Caucasian offenders had high levels of substance use risk (29% and 31%, respectively; χ^2 (1, N=827)=52.6, p<.001); only 9% of African-American youth reported having significant substance use problems.

A series of linear or logistic regression analyses (depending on the characteristics of the outcome) were run separately for each risk variable to see if the scores differed across the two sites. Because any site differences in levels of risk/need could be affected by the ethnic and gender compositions of the samples at each site, all three of these factors were entered simultaneously to see if there were site differences after controlling for the other demographic factors. In the reduced sample used in these analyses, results showed significant site differences in levels of parental deviance (B=.10, p<05), mood/anxiety problems (B=−.56, p<.05), and substance use problems (B=.44, p<.05). Specifically, adolescents in Maricopa County had higher parental deviance and substance use scores and adolescents in Philadelphia County had a higher prevalence of mood/anxiety problems. After controlling for gender and ethnicity/race, there were no significant site differences for attitudes, antisocial peers, school problems, or antisocial history in these analyses.

3.3.2. Cumulative risk/need and the range of services received—The first set of analyses examined whether youths with higher cumulative risk scores reported using a greater number of services (range) in different institutional settings. We computed a simple count of the number of different services endorsed (e.g., whether the adolescent had sessions with a psychologist) by adolescents within each of the service settings. Table 10 presents means and standard deviations for the cumulative risk score and range of services received. As in some prior analyses, these samples are not independent, with some adolescents having stayed at multiple settings across the two-year follow-up period. As a result, we compare the types of adolescents served in the different settings or the number of services received across the two sites, but do not compare values across the different settings.

As seen in Table 10, the cumulative risk scores within each site were roughly similar for all settings except contracted residential mental health facilities; the adolescents in one type of setting did not appear to have markedly higher cumulative risk than adolescents in the other settings. The cumulative risk scores, however, were significantly higher in Maricopa County than in Philadelphia County across several settings: jail/prison (t(154)= −3.20, p<.01); detention (t(179)= −3.89, p<.01); YDC/ADJC (t(104)=−3.39, p<.01; Contracted Residential (t(262)=−5.08, p< .001).

To examine the link between individual cumulative risk scores and the range of services used, we conducted separate analyses for four of the service settings; we excluded the contracted residential mental health setting because of the small sample size (n=61). Because our dependent measure was a count variable, we used Poisson or negative binomial regression, depending on the distributions of these variables. Predictors for each of the models were entered simultaneously and included site, gender, ethnicity, number of days spent in the residential service setting, and individual's cumulative risk score; because of significant skew, we performed a square-root transformation on the number of days variable for each setting.

As seen in Table 11, the number of days in the residential service setting was significant for all four analyses, with individuals who spent more time at the setting receiving a greater range of services. In addition, youth in Maricopa County reported higher service scores in the jail/prison setting (χ^2 (1)=10.99, p<.001), females reported higher scores than males in YDC/ADJC settings (χ^2 (1)=6.40, p<.05), and higher cumulative risk was related to receiving a greater range of services in two of the four settings, detention (χ^2 (1)=4.85, p<.05) and YDC/ADJC

(χ^2 (1)=3.96, p<.05). Although youths in Maricopa County showed higher levels of cumulative risk in all settings other than contracted residential mental health, the relation between cumulative risk and the range of services received in each of the settings did not differ according to site.

3.3.3. Specific risk/needs and services for these identified problems—The second set of analyses focused on the provision of specific services for specified problems. Within each service setting, we conducted χ^2 tests for two separate questions: 1) Are youths with mood/anxiety problems more likely to receive mental health (MH) related services (defined as individual sessions with a psychologist or treatment on a mental health unit), and 2) Are youths with substance use problems more likely to receive drug and alcohol (D&A) services? We focused on these two risk domains because of their importance as foci for intervention (Grisso, 2004), and because they are risk/need factors where the provision of an appropriate service could be discerned from our data. For this set of analyses, we used the markers described earlier to identify youth with significant mood/anxiety and substance use problems and examined both sites together to maintain adequate sample sizes.

As seen in Table 12, adolescents with significant mood/anxiety and substance use problems in detention were more likely than their counterparts to get MH-related and D&A services, respectively. Those with mood/anxiety problems were two to three times more likely to receive MH-related services (41% versus 18%: χ^2 (1)=6.45, p<.05), and those with substance use problems were four times more likely to get D&A services (44% versus 11%: χ^2 (1)=22.93, p<.001). Only a small percentage of youths reported getting either of the services in the jail/prison setting, regardless of their status on the two risk markers; offenders with significant substance use problems, however, were twice as likely to get D&A services (24% versus 12%: χ^2 (1)=3.13, p<.10). A large percentage of youths who spent time in YDC/ADJC settings reported receiving both types of services, with a slightly higher percentage of those high in mood/anxiety risk getting MH-related services (77% versus 51%: χ^2 (1)=3.19, p<.10). No significant differences were found for service use (according to youths' risk marker status) among those who spent time at contracted residential and contracted residential mental health settings. Regardless of offenders' risk status in contracted residential settings, about 36% and 56% reported getting MH-related and D&A services, respectively; in contracted residential mental health settings, and about 75% and 64% reported receiving these two services.

To see if the relation between risk marker status and service patterns could be explained by other factors, we conducted two logistic regression analyses for each of the service settings, one predicting the receipt of D&A services and the other predicting the receipt of MH-related services. The contracted residential mental health setting was excluded from analyses because of its small sample size. Predictors for the eight logistic regressions included site, gender, ethnicity, number of days in the setting (square-root transformed variable), and the risk marker for mood/anxiety problems (for predicting MH-related services) or substance use problems (for predicting D&A services). Table 13 presents a summary of the results obtained from each of the analyses.

Tests revealed that the significant results from previous χ^2 analyses remained important when controlling for site, gender, ethnicity, and the number of days in the setting. Specifically, individuals with significant substance use problems in jail and detention facilities were 2.7 times and 5.4 times as likely, respectively, to receive D&A services than youths without the risk marker. Interestingly, after controlling for other variables, analyses showed that individuals with significant substance use problems in the YDC/ADJC group were also more likely to receive the service. Across all four service settings, youths were more likely to get D&A services the longer they spent time in the setting, and no significant effects were found for site, gender, or ethnicity. The results of analyses predicting MH-related services also

mirrored those obtained from previous χ^2 tests: individuals with significant mood/anxiety problems in detention and YDC/ADJC facilities were 3.4 and 4.2 times as likely to receive the services as youths without the risk marker.

4. Discussion

This study presents previously unavailable, detailed information about the service involvement of serious adolescent offenders after court involvement. The descriptive aspects of this study are important for what they say about how the juvenile justice system operates and what might be expected of it when dealing with its most problematic cases. Examination of the relationship between risk/need and service provision in the juvenile cases sheds light on how well the current system focuses resources on adolescents who need them most.

4.1. Major findings

There are several notable regularities that emerge from these analyses. One of the most striking are the differences and similarities between the two locales. The process of sorting cases is dramatically different in the two sites, with a much larger proportion of adolescents going to adult court in Maricopa County and the overall probability of spending time in a jail/prison higher in that locale. The Philadelphia County system is more likely to place adolescents in contracted residential facilities. At the same time, the adolescents in Maricopa County are more likely to receive some form of community-based treatment services after court involvement, belying the easy generalization that one system is wholly either “punishment” or “treatment” oriented. In addition, given these marked differences, making generalizations about service provision in the juvenile and adult systems based on data from a single locale seems to be a tenuous proposition. Use of multiple locations for investigations of service provision offers the possibility of assessing the impact of site differences as well as an opportunity to assess outcomes for youth with similar profiles of background characteristics and needs who receive different forms of services or sanctions in different locales.

There were also several findings that appeared across both sites that shed light on some of the consistent processes behind patterns of systems involvement. For one thing, being processed in the adult system produced about the same experience in both sites. Once in the adult system, there was a low likelihood of receiving services in institutional settings, a higher likelihood of being exposed to more facilities, and about the same likelihood of being in a jail/prison setting within a reasonably short time. Also, while adolescents in Maricopa County were more likely to end up back in an institution after their initial placement, adolescents who ended up in a subsequent institutional placement at both sites did so, on average, in the same length of time (6 months). Whether this subsequent placement is related to service involvement during the aftercare period is a question for future, more focused analyses, although the generally low levels of community-based treatment services provided during the aftercare period make it seem unlikely that this factor plays a major role. The fact that adolescents return to institutional placement so quickly and consistently across sites highlights the need to also examine the processes of community adjustment (in relationship to things like work or school involvement) in short-circuiting this process of being re-institutionalized.

Another consistent finding across both sites was the level of services provided within the state training schools (the YDC/ADJC facilities). In both locales, the rates of reported service involvement (in terms of prevalence of receiving the service in that setting and the range of services received) in these settings were similar to those in contracted residential settings (either general residential settings or specialized mental health oriented settings). In addition, there did not appear to be differences in the levels of cumulative risk among the adolescents who reported on stays in these types of facilities and the contracted residential services. Although the true test of the attractiveness of contracting out residential treatment services obviously

rests on a comparison of outcomes between state-run and contracted facilities, these data indicate that the general treatment environments within these types of facilities may not be that different in terms of the types of services offered.

Numerous studies have documented that race and gender make a difference in the types of services provided to adolescents in the broader child welfare, juvenile justice, and mental health populations (Garland & Besinger,1997; Kataoka, Zhang, & Wells, 2002). The results here do not contradict these findings, but they do not present overwhelming effects either. The data presented here show that these factors still emerge as relevant to where adolescents get placed, even when looking at a selected group of serious adolescent offenders. Minorities in this sample (African Americans in Philadelphia County, and Hispanics and/or African Americans in Maricopa County) were generally more likely to receive institutional placement (especially in jails/prisons) and less likely to use community-based treatment services (generally and in the follow-up period). In addition, females across both sites were more likely to use community-based treatment services and less likely to receive placement in more restrictive settings (e.g., jail/prisons, YDC/ADJC facilities). The data here also indicate that there are gender and ethnicity differences on some of the risk/need indicators, but these do not fully explain why one type of setting or service might be preferred for males over females or one ethnic group over another.

It is important to note that, despite these findings, the data presented here shed no clear light on the mechanisms behind these processing regularities. The results here about ethnicity/race and gender simply show how the system overall sorts adolescents in relation to ethnicity and gender; it does not present evidence that this factor plays a key (or any) role in the decision making of professionals in the system. More adequate controls and different research designs than those used here would be necessary to sort out the complex role of race/ethnicity and gender in juvenile justice processing of serious adolescent offenders (e.g., see Hartstone & Richetelli, 2001). Indeed, in the final analyses examining the effects of need on service provision where several other case characteristics were controlled, only one gender effect (females in YDC/ADJC settings getting more services) emerged out of all the possible race/ethnicity and gender effects that could have been significant. Despite the fact that even serious adolescent offenders appear to be sorted so that minority and male offenders end up in more restrictive settings, there is no strong evidence here that race/ethnicity or gender drives the process of service provision for these adolescents. The mechanisms behind these differential patterns still need to be explored and explained in future investigations aimed at this question in particular.

The results regarding the relationship between risk/need and service involvement present some mixed results. The first notable finding is the relative parity in risk/need scores across different settings within each site. The placement determination among the types of facilities examined seems to be only marginally linked to the level of risk/need of the adolescent. This may be the result of examining a sample of only serious adolescent offenders with a restricted range of risks/needs, and a broader sampling of adolescent offenders might have shown distinctive profiles of adolescents for different types of services. Nonetheless, from a policy and program monitoring standpoint, it is worth noting that facilities serving serious adolescent offenders appear to be on fairly equal footing regarding the types of problems that these adolescents bring with them upon placement.

Predictably, across both sites, adolescents who stay longer in a facility are more likely to receive a wider range of services. Perhaps less predictably, though, it appears that adolescents with either higher cumulative needs or specific needs (drug and alcohol and mood problems tested here) are more likely to be matched with appropriate services in detention or state training school facilities, even after a variety of other factors are taken into account. The level of service

provision in detention is low (few adolescents report receiving services in this setting), but the services that are offered appear to be focused on adolescents with identifiable problems. The state training schools, meanwhile, appear to offer services at about the same level as contracted residential providers, and these appear to be targeted to adolescents with higher risk/needs.

The finding that detention facilities and state training schools identify adolescents with higher risk/needs for appropriate service involvement may be the result of an increased emphasis on the use of structured screening instruments in these settings (see Grisso, 2004). Although numerous settings in both locales are designated as detention centers and state training schools, most of the reports relate to the major public facilities serving each research site. These facilities in both sites use structured instruments as part of their regular processing procedures, and the increased individualization of services may be an outcome of these practices.

The findings about the level and range of services as well as more individualization of services in the state training schools certainly belies common lore about the deplorable state of these facilities. Based on the data here, adolescents receive a broad range of generally appropriate services as part of being there. On the other hand, contracted residential services, more than state training schools, appear to provide a general package of services to all adolescents who come to these settings. Certainly, the relative intensity or integrity of the services provided in each of these settings is still an open question, as are the specific treatment components offered within the programs. Nonetheless, our findings seem to support the position that “out-sourcing” residential care does not necessarily provide a marked improvement in the type or appropriateness of services provided.

4.2. Limitations

There are limitations to this study that must be noted. First, the sample is composed of serious adolescent offenders. As pointed out earlier, these adolescents present the starkest exemplars of how the justice system balances sanctions and interventions. A distilled sample of serious adolescent offenders (and one that caps the number of drug offenders at 15%) does not, however, provide a picture of how the court handles the full range of adolescents who come before it. The patterns seen in these data may not indicate how the court processes all of its cases; they only indicate how it handles a group of the most serious ones. As such, it should be noted and remembered that the figures given here do not represent overall prevalence rates of placement or service utilization seen across the whole of juvenile justice processing (or even the whole of processing of serious adolescent offenders for that matter). Since this is not an epidemiological study, it offers a view of how the systems in these two locales operate with a policy relevant sample, but it does not provide accurate point estimates of how the system operates more generally.

Second, we are describing the patterns of service use in the two locales without controlling for a variety of individual differences which could affect these patterns. We know, for instance, that there are site differences in the adolescent's index crime getting them into the study and the number of prior offenses. Despite our efforts to impose statistical controls in many analyses, other unexamined or unmeasured characteristics could be related to the observed patterns. We examined the ones that seemed most reasonable to consider when assessing service use patterns, but there is always that inclusion of some other background characteristic of the cases could give a slightly different picture.

Equally important to remember, however, is that the outcomes of service provision are only partially attributable to the characteristics of the adolescent. System capacities, such as the availability of certain resources, certainly play a role in determining what adolescents receive which services (Mulvey & Reppucci, 1988). The match between risk/need and service

provision seen here is only part of the picture needed to understand the process of providing appropriate services to these adolescents.

Finally, the service provision data are based almost exclusively on adolescent self-report. While we (and others) have provided data supporting the validity of these reports, they may still be inaccurate in some unknown ways. This problem is not easily resolved, however, since agency records may also be biased for self-serving reasons as well. Our general impression is that adolescents had little motivation to distort where they were or what services they received, that the recall period was short enough to allow for accuracy at the level of detail requested, and that the life events calendar promoted accurate reporting. This impression is validated by the high level of agreement between this self-reported information and the official record information (ProDes) in Philadelphia County.

5. Conclusion

Despite the noted limitations, the findings here provide a previously unavailable overview of service involvement for a sample of adolescents whose futures may depend greatly on what happens in this realm of their lives. This description of what happens to these adolescents is the first step in sorting out what controllable factors might promote positive adjustment in early adulthood. Doing more focused analyses of particular sanctioning or intervention experiences is clearly necessary if we expect to improve the efficiency and effectiveness of our justice systems with these serious, and difficult, offenders. Knowing what the system is currently doing is a first step in that task.

References

Altschuler, DM.; Armstrong, TL.; MacKenzie, DL. Reintegration, supervised release, and intensive aftercare (NCJ 175715). Office of Juvenile Justice and Delinquency Prevention; Washington, DC: 1999.

Andrews, DA.; Zinger, I.; Hoge, R.; Bonta, J.; Gendreau, P.; Cullen, F. Does correctional treatment work?. In: Greenfield, D., editor. A clinically relevant and psychologically informed meta-analysisCriminal careers. Vol. 2. Dartmouth Publishing Company Limited; Brookfield, VT: 1996. p. 437-472.

Aos, S.; Phipps, P.; Barnoski, R.; Leib, R. The comparative costs and benefits of programs to reduce crime. Washington State Institute for Public Policy; Olympia, WA: 2001.

Ascher BH, Farmer EMZ. The Child and Adolescent Services Assessment (CASA): Description and psychometrics. Journal of Emotional and Behavioral Disorders 1996;4(1):12–20.

Bandura A, Barbarnelli C, Caprara GV, Pastorelli C. Mechanisms of moral disengagement in the exercise of moral agency. Journal of Personality and Social Psychology 1996;71(2):364–374.

Bentler, PM. EQS 6 structural equations program manual. Multivariate Software Inc; Encino, CA: 2000.

Bishop, D. Juvenile offenders in the criminal justice system. In: Tonry, M., editor. Crime and justice: A review of research. University of Chicago Press; Chicago, IL: 2000.

Browne, MW.; Cudeck, R. Alternative ways of assessing model fit. In: L., JS., editor. Testing structural equation models. Sage; Newbury Park, CA: 1993. p. 136-162.

Burns, BJ.; Angold, A.; Magruder-Habib, K.; Costello, EJ.; Patrick, MKS. The Child and Adolescent Services Assessment (CASA). Duke University Medical Center; Durham, ND: 1992.

Burns BJ, Phillips SD, Wagner HR, Barth RP, Kolko DJ, Campbell Y, et al. Mental health needs and access to mental health services by youth involved with child welfare: A national survey. Journal of the American Academy of Child and Adolescent Psychiatry 2004;43(8):960–970. [PubMed: 15266190]

Caspi A, Moffitt T, Thornton A, Freedman D, Amell J, Harrington H. The life history calendar: A research and clinical assessment method for collecting retrospective event-history data. International Journal of Methods in Psychiatric Research July;1996 6(2):101–114.

Chassin L, Rogosch F, Barrera M. Substance use and symptomatology among adolescent children of alcoholics. Journal of Abnormal Psychology 1991;100(4):449–463. [PubMed: 1757658]

Cocozza J, Skowyra K. Youth with mental health disorders: Issues and emerging responses. Office of Juvenile Justice and Delinquency Prevention Journal 2000;7(1):3–13.Available from: www.ojjdp.ncjrs.org

Farrington DP. Early predictors of adolescent aggression and adult violence. Violence and Victims 1989;4:79–100. [PubMed: 2487131]

Farrington DP, Loeber R. Epidemiology of juvenile violence. Child and Adolescent Psychiatric Clinics of North America 2000;9(4):733–748. [PubMed: 11005003]

Farmer EMZ, Angold A, Burns BJ, Costello EJ. Reliability of self-reported service use: Testetest consistency of children's responses to the Child and Adolescent Services Assessment (CASA). Journal of Child and Family Studies 1994;3(3):307–325.

Feld, B. Legislative exclusion of offenses from juvenile court jurisdiction: A history and critique. In: Fagan, J.; Zimring, F., editors. The changing borders of criminal justice: Transfer of adolescents to the criminal court. University of Chicago Press; Chicago, IL: 2000. p. 83-147.

Garland AF, Besinger BA. Racial/Ethnic differences in court referred pathways to mental health services in foster care. Children and Youth Services Review 1997;19(8):651–666.

Garland AF, Hough RL, Landsverk JA, Brown SA. Multi-sector complexity of systems of care for youth with mental health needs. Children's Services: Social policy, research and practice 2001;4(3):123–140.

Gottfredson DC. Peer group interventions to reduce the risk of delinquent behavior: A selective review and a new evaluation. Criminology 1987;25(3):671–714.

Griffin, P.; Torbet, P.; Szymanski, L. Trying juveniles as adults in criminal court: An analysis of state transfer provisions. OJJDP, U.S. Department of Justice; Washington, DC: 1998.

Grisso, T. Double jeopardy: Adolescent offenders with mental disorders. The University of Chicago Press; Chicago: 2004.

Hartstone, E.; Richetelli, D. A reassessment of minority overrepresentation in Connecticut's Juvenile Justice System. Report to the State of Connecticut Office of Policy and Management, Policy Development and Planning Division. Spectrum Associates; Hartford, CT: 2001. http://www.opm.state.ct.us.pdpdl/grants/jjac/reassess_final_report_final_version2.pdf

Hawkins, J.; Herrenkohl, T.; Farrington, DP.; Brewer, D.; Catalano, R.; Harachi, T. Serious and violent juvenile offenders: Risk factors and successful interventions. Sage; Thousand Oaks, CA: 1998. A review of predictors of youth violence.

Hazen AL, Hough RL, Landsverk JA, Wood PA. Use of mental health services by youth in public sectors of care. Mental Health Services Research 2004;6(4):213–226. [PubMed: 15588032]

Horney J, Osgood DW, Marshall IH. Criminal careers in the short term: Intra-individual variability in crime and its relation to local life circumstances. American Sociological Review 1995;60:665–673.

Hu LT, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling: A Multidisciplinary Journal 1999;6:1–55.

Huizinga D, Esbensen F, Weihar A. Are there multiple paths to delinquency? Journal of Criminal Law and Criminology 1991;82:83–118.

Hussong AM, Curran PJ, Moffitt TE, Caspi A, Carrig MM. Substance abuse hinders desistance in young adults' antisocial behavior. Development and Psychopathology 2004;16(4):1029–1046. [PubMed: 15704826]

Jones PR, Harris PW, Fader JJ. Evaluating services to delinquent youth in Philadelphia; the ProDES information system. The PAPPC Journal (Official Publication of the Pennsylvania Association on Probation, Parole, and Corrections) 1999;59(1):10–13.

Kataoka SH, Zhang L, Wells KB. Unmet needs for mental health are among US children: variation by ethnicity and insurance status. American Journal of Psychiatry 2002;159(9):1548–1555. [PubMed: 12202276]

Levine, M.; Levine, A. Helping children: A social history. Oxford University Press; New York: 1992.

Lipsey M. Can intervention rehabilitate serious delinquents? Annals of Political and Social Science 1999;564:142–166.

Loeber, R.; Farrington, DP.; Waschbusch, DA. Serious and violent offenders. In: Loeber, R.; Farrington, DP., editors. Serious and violent juvenile offenders: Risk factors and successful interventions. Sage; Thousand Oaks, CA: 1998. p. 13-29.

MacCallum RC, Browne MW, Sugawara HM. Power analysis and determination of sample size for covariance structure modeling. Psychological Methods 1996;1(2):130–149.

Marmorstein NR, Iacono WG. Major depression and conduct disorder in a twin sample: Gender, functioning, and risk for future psychopathology. Journal of American Academy of Child and Adolescent Psychiatry 2003;42(2):225–233.

Moffitt T. Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. Psychological Review 1993;100(4):674–701. [PubMed: 8255953]

Mulvey EP, Reppucci ND. Perceptions of appropriate services for juvenile offenders. Criminal Justice and Behavior 1984;11:401–421.

Mulvey EP, Reppucci ND. The context of clinical judgment: The effects of resource availability on judgments of amenability to treatment in juvenile offenders. American Journal of Community Psychology 1988;4:525–546. [PubMed: 3189236]

Mulvey EP, Steinberg L, Fagan J, Cauffman E, Piquero AR, Chassin L, et al. Theory and research on desistance from antisocial activity among serious adolescent offenders. Youth Violence and Juvenile Justice 2004;2(3):213–236.

Mulvey, EP.; Woolard, J. Themes for consideration in future research on prevention and intervention with antisocial behaviors. In: Stoff, D.; Breiling, J.; Maser, J., editors. Handbook of antisocial behavior. John Wiley and Sons, Inc; NJ: 1997. p. 454-460.

Office of Juvenile Justice and Delinquency Prevention, Census of Juvenile in Residential Placement Databook. 2004. Accessed at ojjdp.ncjrs.org/ojstatbb/cjrp/ (November 28, 2005)

Puzzanchera, C.; Finnegan, T.; Kang, W. Easy Access to Juvenile Populations. 2005. Online. Available: http//www. ojjdp.ncjrs.org/ojstatbb/ezapop/

Redding, RE.; Lexcen, FJ.; Ryan, EP. Mental health treatment for juvenile offenders in residential psychiatric and juvenile justice settings. In: Heilbrun, K.; Goldstein, NS.; Redding, RE., editors. Juvenile delinquency: Prevention, assessment and intervention. Oxford University Press; New York: 2005. p. 282-309.

Reynolds, CR.; Richmond, BO. Revised Children's Manifest Anxiety Scale. RCMAS Manual. Western Psychological Services; Los Angeles: 1985.

Rosenheim, MK.; Zimring, FE.; Tannenhaus, DS.; Dorhn, B., editors. A century of juvenile justice. University of Chicago Press; Chicago, IL: 2002.

Schubert CA, Mulvey EP, Steinberg L, Cauffman E, Losoya SH, Hecker T, et al. Operational lessons from the pathways to desistance project. Youth Violence and Juvenile Justice 2004;2(3):237–255.

Sherman, L.; Gottfredson, D.; MacKenzie, D.; Eck, J.; Reuter, P.; Bushway, S. Preventing crime: What works, what doesn't, what's promising. U.S. Department of Justice, Office of Justice Programs; Washington, DC: 1997.

Slobogin C. Treating kids right: Deconstructing and reconstructing the amenability to treatment concept. The Journal of Contemporary Legal Issues 1999;10

Snyder, H.; Sickmund, M. Juvenile Offenders and Victims: 1999 Report (No. NCJ 178257). Department of Justice, Office of Juvenile Justice and Delinquency Prevention; Washington, DC: 1999.

Teplin L, Abram K, McClelland G, Dulcan M, Mericle A. Psychiatric disorders in youth in juvenile detention. Archives of General Psychiatry 2002;59(12):1133–1143. [PubMed: 12470130]

Thornberry, T.; Krohn, MD., editors. Taking stock of delinquency: An overview of findings from contemporary longitudinal studies. Kluwer; New York: 2003.

Thornberry TP, Krohn MD, Lizotte AJ, Chard Wierschem D. The role of juvenile gangs in facilitating delinquent behavior. Journal of Research in Crime and Delinquency 1993;30(1):55–87.

Tyler T. Procedural fairness and compliance with the law. Swiss Journal of Economics and Statistics 1997;133(22):219–240.

Wasserman G, McReynolds L, Lucas C, Fisher P, Santos L. The voice DISC-IV with incarcerated male youths: Prevalence of disorder. Journal of the American Academy of Child and Adolescent Psychiatry 2002;41(3):314–321. [PubMed: 11886026]

Weinberger DA, Schwartz GE. Distress and restraint as superordinate dimensions of self-reported adjustment: A typological perspective. Journal of Personality 1990;58(2):381–417. [PubMed: 2213473]

World Health Organization. Composite International Diagnostic Interview. World Health Organization; Geneva, Switzerland: 1990.

Yeh M, McCabe K, Hurlburt M, Hough R, Hazen A, Culver S, et al. Referral sources, diagnosis, and service types in public outpatient mental health care: A focus on ethnic minorities. The Journal of Behavioral Health Services and Research 2002;29(1):45–60.

Zhang Q, Loeber R, Stouthamer Lober M. Developmental trends of delinquency attitudes and delinquency: Replication and synthesis across time and samples. Journal of Quantitative Criminology 1997;13:181–216.

Zimring, F. American youth violence. Oxford University Press; New York: 1998.

Table 1

Description of measures used to construct risk/need indicators

Risk variables	Indicators	Instrument used to assess indicators (number of items)
Prior criminal behavior	Age at first arrest	Court record (1)
	Number of prior court petitions — past year	Court record (1)
	Aggressive offending	Self report of offending (Huizinga, Esbensen, & Weihar, 1991) (11)
	Income-related offending	Self report of offending (Huizinga et al., 1991) (11)
Antisocial attitudes	Moral disengagement	Mechanisms of moral disengagement (Bandura, Barbarnelli, Caprara, & Pastorelli, 1996) (32; alpha=.88)
	Consideration of others	Weinberger adjustment inventory (Weinberger & Schwartz, 1990) (7; alpha=.73)
	Legal cynicism	Procedural justice inventory (Tyler, 1997) (5; alpha=.60)
Parental deviance	Mother arrested or jailed — ever	Question from baseline interview (1)
	Father arrested or jailed—ever	Question from baseline interview (1)
	Mother had drug problem — ever	Substance use/abuse inventory (Chassin, Rogosch, & Barrera, 1991) (1)
	Mother was alcoholic — ever	Substance use/abuse inventory (Chassin et al., 1991) (1)
Association with antisocial peers	Peer antisocial behavior	Rochester youth study (Thornberry et al., 1993) (12; alpha=.92)
	Peer antisocial influence	Rochester youth study (Thornberry et al., 1993) (7; alpha=.89)
	Proportion of friends arrested — ever	Question from baseline interview (1)
	Proportion of friends jailed — ever	Question from baseline interview (1)
School difficulties	Expelled — Ever	Question from Baseline Interview (1)
	Caught cheating or disturbing class before Age 11	Question from baseline interview (1)
	Skipped school or classes — ever	Question from baseline interview (1)
	Dropped out of school	Question from baseline interview (1)
Mood/anxiety problems	Diagnosis of select mood disorder — past year	Composite international Diagnostic Interview (CIDI) (World Health Organization, 1990) (1)
	Impairment from depressive symptoms — ever[a]	CIDI (World Health Organization, 1990) (1)
	Diagnosis of post traumatic stress disorder — ever	CIDI (World Health Organization, 1990) (1)
	Significant anxiety problems[b]	Revised children's manifest anxiety scale (Reynolds & Richmond, 1985) (28; alpha=.87)
Substance use problems	Diagnosis of select substance use disorder[c]	CIDI (World Health Organization, 1990) (1)
	Significant social consequences from alcohol use[d]	Substance use/abuse inventory (Chassin et al., 1991) (17)
	Social social consequences from drug use	Substance use/abuse inventory (Chassin et al., 1991) (17)
	Dependence symptoms from alcohol or drug use	Substance use/abuse inventory (Chassin et al., 1991) (10)

[a] Select mood disorders included major depressive disorder, dysthymia, or manic episode.

[b] The presence of significant anxiety problems was determined using a cutoff score (greater than 2 standard deviations from the sample mean) based on the distributions of gender-and ethnic-specific subsamples.

[c] Select substance disorders included alcohol abuse, alcohol dependence, drug abuse, or drug dependence.

[d] Social consequences and dependence symptoms were considered significant if greater than three items were endorsed.

Table 2

Intercorrelations among composite risk/need scores across seven risk indicators (*N*=868)

Variable	1	2	3	4	5	6	7
1. Prior criminal behavior	–						
2. Antisocial attitudes	.38***	–					
3. Parental deviance	.18***	.07	–				
4. Association with antisocial peers	.49***	.37***	.15***	–			
5. School difficulties	.33***	.25***	.11**	.33***	–		
6. Mood/anxiety problems	.10**	.02	.06	.09**	.09**	–	
7. Substance use problems	.43***	.33***	.17***	.44***	.31***	.21***	–

** *p*<.01,

*** *p*<.001.

Table 3

Cumulative services over two years: settings and duration

Setting	Juvenile court				Adult court			
	PA (*n*=384)		AZ (*n*=273)		PA (*n*=41)		AZ (*n*=170)	
	Rate (%)	Mean days (S.D.)	Rate (%)	Mean days (S.D.)	Rate (%)	Mean days (S.D.)	Rate (%)	Mean days (S.D.)
Drug and alcohol treatment unit	7	198(152)	2	31(34)	0	NA	316(14)	
Psychiatric hospital or unit	2	41(60)	1	16(7)	0	NA	238(32)	
Shelter	1	26(23)	2	36(34)	276(65)		243(29)	
Detention	29	49(55)	37	56(48)	260(NA)		743(42)	
Jail/prison	29	131(138)	30	120(150)	76493(210)		88435(239)	
YDC/ADJC	9	254(168)	26	226(114)	0	NA	0	NA
Contracted residential-mental health	13	273(125)	5	150(136)	0	NA	7148(217)	
Contracted residential	59	259(161)	16	150(136)	7374(196)		7102(70)	
Community-based	49	59(109)	57	28(34)	7112(77)		3435(50)	

Table 4

Types of treatment received in residential settings

	Rate (%)	**Rate (%)**
Jail/prison	*PA=118*	*AZ=214*
Drug and alcohol	30	29
Sessions with psychologist or psychiatrist	13	36
Group therapy	26	26
Session with religious	19	29
Family-based	3	2
Treatment on mental health unit	4	5
Anger management or social skills training	25	28
Job skills training	28	33
Other	3	10
No services	53	28
Mean number of different treatment types for individuals getting at least 1 service	3.0 (S.D.=1.9)	2.7 (S.D.=1.6)
YDC/ADJC	*PA=36*	*AZ=74*
Drug and alcohol	78	76
Sessions with psychologist or psychiatrist	53	50
Group therapy	78	61
Session with religious	7	32
Family-based	12	12
Treatment on mental health Unit	6	18
Anger management or social skills training	29	57
Job skills training	19	64
Other	4	5
No services	3	5
Mean number of different treatment types for individuals getting a least 1 service	4.6 (S.D.=2)	3.9 (S.D.=2)
Detention	*PA=91*	*AZ=99*
Drug and alcohol	13	23
Sessions with psychologist or psychiatrist	11	27
Group therapy	18	10
Session with religious	13	13
Family-based	8	1
Treatment on mental health unit	5	2
Anger management or social skills training	14	12
Job skills training	12	12
Other	1	3
No services	58	47
Mean number of different treatment types individuals getting at least 1 service	2.3 (S.D.=1.7)	1.9 (S.D.=1.1)for
Contracted residential	*PA=222*	*AZ=52*
Drug and alcohol	54	63
Sessions with psychologist or psychiatrist	32	46
Group therapy	78	60
Session with religious	9	4
Family-based	33	25
Treatment on mental health unit	11	8
Anger management or social skills training	72	56
Job skills training	61	38
Other	5	0
No services	8	14
Mean number of different treatment types for individual getting at least 1 service	3.9 (S.D.=1.7)	3.5 (S.D.=1.6)
Contracted Residential-MH	*PA=48*	*AZ=22*
Drug and alcohol	71	32
Sessions with psychologist or psychiatrist	71	64
Group therapy	94	77
Session with religious	10	27
Family-based	65	55
Treatment on mental health unit	35	14
Anger management or social skills training	92	64
Job skills training	73	27
Other	8	14
No services	2	18
Mean number of different treatment types for individuals getting at least 1 service	5.2 (S.D.=1.6)	4.6 (S.D.=1.8)

Table 5

Cumulative services over two years: community services and duration

Type	Juvenile court			Adult court		
	PA (*n*=384)	AZ (*n*=273)		PA (*n*=41)		AZ (*n*=170)
	RateMean days (%)(S.D.)	Rate (%)	Mean days (S.D.)	Rate (%)	Mean days (S.D.)	RateMean days (%)(S.D.)
Individual	2338(52)	29	18(19)	5	77(93)	1820(26)
School-based	1141(54)	5	19(13)	0		210(6)
Group	1132(44)	21	18(30)	0		1535(62)
Partial	839(45)	3	27(29)	2	40(60)	141(13)
In-home	322(23)	23	12(11)	0		811(9)
Case manager	2332(74)	8	9(7)	5	19(8)	513(16)
Vocational	824(37)	4	42(59)	2	85(NA)	227(35)

Table 6

Summary of χ^2 tests of the association between ethnicity/race and services across two years

	PA		AZ		Effect direction
	Juvenile (*N*=)	**Adult (*N*=)**	**Juvenile (*N*=)**	**Adult (*N*=)**	
Residential setting					
1. Drug and alcohol treatment unit	13.59**	NC	2.48	0.63	Fewer African American
2. Psychiatric hospital or unit	8.22*	NC	2.55	1.27	Fewer African American
3. Shelter	1.44	0.46	4.18	0.58	
4. Detention	0.25	0.23	3.64	3.21	
5. Jail/prison	2.50	0.70	7.31*	9.31*	Fewer Caucasian
6. YDC/ADJC	2.61	NC	3.52	1.46	
7. Contracted residential-mental health	5.05	NC	1.63	1.92	
8. Contract residential	5.80	0.71	032	10.47**	Fewer Hispanic
Community-based treatment type					
1. Individual	6.66*	0.46	7.34*	4.21	PA: fewer African American AZ: more then expected African American
2. School-based	5.10	NC	2.06	3.22	
3. Group	1.87	NC	7.18*	17.96***	More Caucasian
4. Partial	0.02	0.23	2.60	6.52	
5. In-home	1.52	NC	2.30	4.58	
6. Case manager	6.61*	0.46	10.75**	2.64	PA: African American AZ: Hispanic
7. Vocational	0.04	0.23	0.15	0.58	

NC = not calculated because no participants in the adult system were in this setting.

* $p<.05$,

** $p<.01$,

*** $p<.001$.

Table 7

χ^2 tests of the association between gender and services across two years

	PA		AZ		Effect direction
	Juvenile (*N*=)	**Adult (*N*=)**	**Juvenile (*N*=)**	**Adult (*N*=)**	
Residential setting					
1. Drug and alcohol treatment unit	0.01	NC	1.35	0.06	
2. Psychiatric hospital or unit	10.24**	NC	0.13	0.13	More females
3. Shelter	0.70	28.00***	0.97	0.19	More females
4. Detention	1.37	0.08	5.00*	0.59	More males
5. Jail/prison	9.74**	12.92*	6.95**	0.74	More males
6. YDC/ADJC	0.22	NC	10.63***	0.19	More males
7. Contracted residential-mental health	0.81	NC	1.19	0.52	
8. Contract residential	14.20***	3.48	0.48	3.32	More males
Community-based treatment type					
1. Individual	8.07**	0.17	4.4*	1.88	More females
2. School-based	2.17	NC	0.14	0.19	
3. Group	0.80	NC	2.61	0.51	
4. Partial	0.64	0.08	5.71*	0.13	More females
5. In-home	1.05	NC	0.10	0.88	
6. Case manager	2.12	0.17	3.62	1.35	
7. Vocational	8.31**	0.08	0.80	0.19	More females

NC = not calculated because no participants in the adult system were in this setting.

* $p<.05$,

** $p<.01$,

*** $p<.001$.

Table 8

Services in the post-institutional stay period: settings and duration

Setting	Placement group			
	PA (*n*=228)		AZ (*n*=51)	
	Rate (%)	Mean days (S.D.)	Rate (%)	Mean days (S.D.)
Drug and alcohol treatment unit	779 (110)		21 (NA)	
Psychiatric hospital or unit	<145 (57)		0	NA
Shelter	<118 (6)		275 (NA)	
Detention	1837 (46)		2942 (38)	
Jail/prison	29133 (106)		39145 (117)	
YDC/ADJC	781 (89)		3586 (73)	
Contracted residential-mental health	881 (93)		817 (14)	
Contracted residential	3575 (108)		2777 (100)	
Community-based	4241 (81)		5124 (31)	

Table 9

Services in post-institutional stay period: community services and duration

Setting	Placement			
	PA (*n*=228)		AZ (*n*=51)	
	Rate (%)	Mean days (S.D.)	Rate (%)	Mean days (S.D.)
Individual	16	19 (18)	20	13 (17)
School-based	7	64 (74)	2	48 (NA)
Group	7	17 (16)	12	21 (32)
Partial	4	14 (14)	2	3 (NA)
In-home	2	20 (17)	24	13 (11)
Case manager	21	34 (94)	9	9 (7)
Vocational	5	9 (8)	9	34 (42)

Table 10

Means and standard deviations for cumulative risk scores and range of services received across residential settings

Service setting	Cumulative risk/need		Range of services	
	Philadelphia ***M*** **(S.D.)**	**Phoenix** ***M*** **(S.D.)**	**Philadelphia** ***M*** **(S.D.)**	**Phoenix** ***M*** **(S.D.)**
Jail/prison (Philadelphia *N*=90, Phoenix *N*=66)	1.09 (1.30)	1.80 (1.48)[a]	0.56 (1.00)	1.11 (1.39)[a]
Detention (Philadelphia *N*=91, Phoenix *N*=90)	0.84 (1.09)	1.52 (1.09)[a]	0.98 (1.58)	1.02 (1.19)
YDC/ADJC (Philadelphia *N*=36, Phoenix *N*=70)	0.92 (1.20)	1.91 (1.54)[a]	4.50 (1.98)	3.81 (2.21)
Contracted residential (Philadelphia *N*=222, Phoenix *N*=40)	0.91 (1.16)	1.98 (1.56)[b]	3.54 (1.96)	3.28 (1.91)
Contracted residential-MH (Philadelphia *N*=48, Phoenix *N*=13)	0.98 (1.25)	1.23 (1.30)	5.18 (1.75)	4.54 (1.90)

Note: Youths may be included in multiple service settings.

[a] *T*-test indicates site difference ($p<.01$).

[b] *T*-test indicates site difference ($p<.001$).

Table 11

Poisson and negative binomial regression analyses predicting the range of services received across residential settings

Variable	Jail/prison (*N*=149)		Detention (*N*=175)		YDC/ADJC (*N*=101)		Contracted residential (*N*=256)	
	χ^2 (*df*)	RR[a]	χ^2 (*df*)	RR[a]	χ^2 (*df*)	RR[a]	χ^2 (*df*)	RR[a]
Site	11.40 (1)***		1.90 (1)		1.31 (1)		0.06 (1)	
AZ		1.00		1.00		1.00		1.00
PA		0.37***		1.48		1.16		0.97
Gender	0.05 (1)		0.35 (1)		5.80 (1)		0.28 (1)	
Male		1.00		1.00		1.00		1.00
Female		0.85		1.22		1.56*		1.06
Ethnicity	0.64 (2)		3.61 (2)		0.00 (2)		0.84 (1)	
Caucasian		1.00		1.00		1.00		1.00
African-American		1.34		0.99		0.99		1.03
Hispanic		1.32		0.56		1.00		0.95
Days in Setting	18.87 (1)***		11.75 (1)***		29.58 (1)***		56.37 (1)***	
Cumulative risk	0.91 (1)		4.84 (1)*		3.97 (1)*		0.32 (1)	

*p<.05,

***p<.001.

[a]RR = rate ratio; RRs are provided for categorical variables.

Table 12

Summary of χ^2 tests for cross-tabulations of select risk markers by services

Service setting	Mood/anxiety problems		Substance use problems	
	No % getting MH setting service (*n*/*N*)	Yes % getting MH service (*n*/*N*)	No % getting D&A service (*n*/*N*)	Yes % getting D&A service (*n*/*N*)
Jail/prison	13 (17/131)	12 (3/25)	12 (14/114)	24 (10/42)*
Detention	18 (28/159)	41 (9/22)**	11 (15/142)	44 (17/39)***
YDC/ADJC	51 (47/93)	77 (10/13)*	73 (57/78)	89 (25/28)
Contracted residential	35 (75/213)	41 (20/49)	54 (116/216)	65 (30/46)
Contracted residential-MH	70 (33/47)	93 (13/14)	63 (31/49)	67 (8/12)

Note: *n* indicates the number of youths who received the specified service within each setting; *N* indicates the number of youths in each setting who did or did not have the specified risk marker (e.g., *N* for the 'yes' group represents the number within each service setting who showed high risk for mood/anxiety problems and substance use problems, respectively).

* $p<.10$,

** $p<.05$,

*** $p<.001$.

Table 13

Logistic regression analyses predicting the receipt of mental-health (MH) related and substance use (SU) services across residential settings

Predictor	Exp (*β*) for jail/prison (*N*=149)		Exp (*β*) for detention (*N*=175)		Exp (*β*) for YDC/ADJC (*N*=101)		Exp (*β*) for contracted residential (*N*=256)	
	MH service	SU service	MH service	SU service	MH service	SU service	MH service	SU service
AZ (versus PA)	8.28***	1.23	1.60	1.11	1.05	0.44	2.44**	1.87
Female (versus male)	–	–	1.25	0.56	3.24	3.41	1.09	1.55
African-American[a]	1.72	0.83	0.31	0.46	1.02	0.46	1.05	0.76
Hispanic[a]	1.66	0.74	0.89	0.67	1.07	2.12	1.49	1.45
Days in setting	1.06	1.16***	1.11	1.17**	1.18***	1.15**	1.08***	1.18****
Mood/anxiety risk	0.74	–	3.40**	–	4.20*	–	1.24	–
Substance use risk	–	2.65*	–	5.43****	–	4.83*	–	1.62
Nagelkerke *R*-Square	0.18[b]	0.17	0.17	0.24	0.19	0.24	0.07	0.17
χ^2 (*df*)	15.42 (5)***	14.84 (6)**	20.17 (6)***	27.19 (6)****	15.02 (6)**	17.52 (6)***	13.75 (6)**	14.84 (6)**

*$p<.10$,

**$p<.05$,

***$p<.01$,

****$p<.001$.

[a]Reference group is Caucasian.

[b]Gender was excluded from the jail/prison analysis because there were only 5 females.