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**PATHWAYS FROM CHILD WELFARE
TO JUVENILE INCARCERATION
FOR SERIOUS AND VIOLENT OFFENSES**

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Executive Summary

Pathways from Child Welfare Services to Juvenile Incarceration for Serious and Violent Offenses

Numerous past studies identified an association between abuse as a child and later delinquent behavior, but little information clarified how a risk factor such as child abuse interacts with other confounding and mitigating factors to influence the development of serious and violent juvenile crime. Set in California, a state with high rates of child abuse and neglect reporting as well as juvenile crime, the present study advanced understanding of these relationships through a prospective examination of adolescent incarceration following a child welfare agency response to a report of abuse or neglect. The study of the pathways of school-age children in the child welfare system to incarceration in the California Youth Authority (CYA) used an ecological systems framework to guide analyses of administrative data from state and local agencies, taking into account community poverty and crime, child and family characteristics, educational services for serious emotional disturbance, and child welfare intervention levels (investigation, services without foster care, or foster care).

This Field-initiated Research grant funded by the Office of Juvenile Justice and Delinquency Prevention accomplished two major tasks: (1) the collection, cleaning, reconfiguration and linkage of child maltreatment report, foster care, CYA, Special Education data on seriously emotionally disturbed children (SED), birth data, census information, and crime data; (2) a multi-level analysis of later incarceration as adolescents for serious or violent offenses among school-aged children with child welfare service histories. Due to more limited availability of data on child abuse investigations and non-foster care services, analyses were conducted in two parts. The first investigation followed school-age children from the point of investigation for maltreatment to potential entry into CYA in ten counties. The second section of the report presents a statewide analysis of the movement from child welfare supervised foster care to CYA.

From Child Abuse to CYA

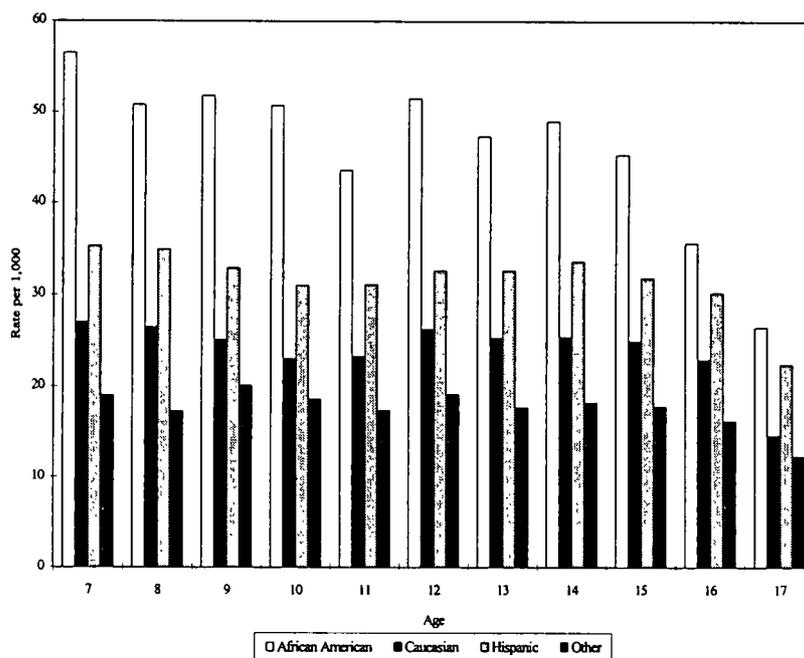
Movement to higher levels of service within the child welfare system, entry into CYA, and differences in the likelihood of incarceration for a violent versus a non-violent offense in ten California counties were examined with bivariate and multivariate (logistic regression and proportional hazards techniques) analyses. This section also includes community level variables by linking local crime reports and census tract information to investigated maltreatment reports.

Older Children in the Child Welfare System

- African Americans have the highest rate of maltreatment reports—ranging from 35 to 47 percent above the median for each age group. Hispanic children are also reported at a higher rate than the median for each age (see Figure 1).

Figure 1 Children Reported for Maltreatment per 1,000 Children Aged Seven to Seventeen

(See Figure 4.1 in report.)



- After age nine, physical abuse reports comprise the majority of reports for older children and by age 14, sexual abuse reports are as frequent as reports for neglect.
- After age 12, females comprise the majority of the children and youth reported for maltreatment.
- African American children were over twice as likely to receive some level of service beyond investigation than either Hispanic or Caucasian children. Overall, neglect remained the primary reason for case openings, but a report of physical or sexual abuse among youth over age 14 increased the likelihood of service provision.
- Although older African American children more frequently received services beyond an investigation, they were not more likely to later enter foster care. Among older children, African American children were less likely to enter foster care than Caucasian children and had an equal likelihood of entering foster care as Hispanic children.

From Investigated Abuse Report to CYA

Less than one percent of the children with investigated child abuse reports later entered CYA, but this one percent was 22 percent of the first admissions to CYA from the 10 county study.

- Rates of CYA entry for children with investigated abuse reports were substantially higher than the general population across ethnic categories. Children of color with investigated abuse reports had higher rates of entry into CYA after age 13 than Caucasian children (see Figures 2 & 3).

Figure 2 Rate of 1994 CYA Entry per 1,000 Children with Investigated Maltreatment Reports

(see Figure 4.5 in report).

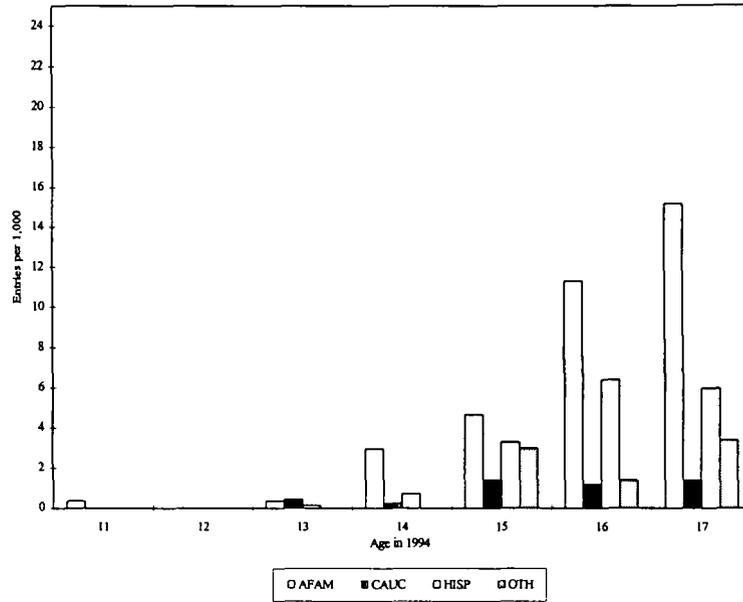
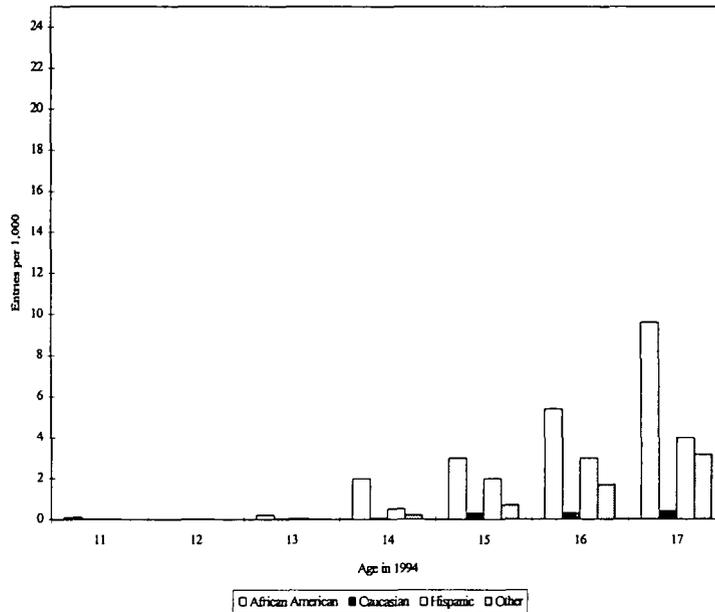


Figure 3 Rate of 1994 CYA Entry per 1,000 Youth in the General Population

(See Figure 4.20 in report).

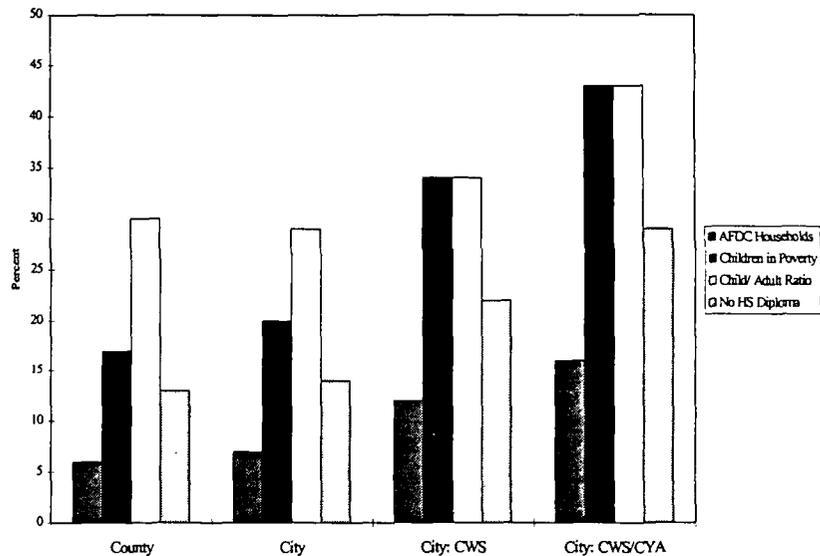


Community Factors

Examination of the potential impact of community violence was limited to those urban areas for which local crime data was available (11 cities in the 10 counties). Neighborhood risk factors were similar for children reported for maltreatment and children who were incarcerated as adolescents (see Figure 5).

Figure 5 Median Community Indicator Levels

Census tracts of those children with maltreatment reports have worse community conditions than average conditions in the city or county. Children with maltreatment reports and later entry into CYA lived in census tracts with slightly worse indicators than those with maltreatment reports only (see Figure 4.24 in report)



- The increased risk for African American and Hispanic males offsets the protective influence of services seen in the previous county-wide model. The inclusion of census tract indicators reduced the impact of age at time of report. Youth coming from neighborhoods with higher proportions of mobile families and single mother households were at increased risk of CYA entry. Youth coming from areas with higher rates of violent crime and single mother heads of households were also at greater risk.

Violent vs. Non-violent offending

Two logistic regression models of incarceration for a violent offense among all CYA first admissions were constructed. The first included all entries from 1990 through 1996. The second model of violent offending was restricted to those youth 18 or younger in 1996 in order to account for limited availability of special education data.

- In the model including all CYA admissions, violent offenders were more likely to be under age 13 at the time of the first offense, were more likely to be male, and were more likely to be found in need of substance abuse counseling at entry. Youth of color with child welfare histories were more frequently incarcerated for a violent offense.
- The positive relationship between substance abuse counseling and violent offenders in the previous model almost totally disappeared in the more restricted model which included the SED identification. Previous identification as SED increased the likelihood of CYA incarceration for a violent offense among youth who were under the age of 13 at the time of the first sustained petition or were previously incarcerated in a local detention facility. Children of color remained more likely to be incarcerated for a violent offense.

Violent vs. Non-violent Offenders (11 cities)

Logistic regression models of incarceration for a violent offense were also constructed for an 11 city sample in order to examine the impact of community level variables.

- Among incarcerated youth from the 11 urban cities with CWS histories. Strong risk factors for violent offending included: the number of prior sustained delinquency petitions combined with prior non-CYA incarceration; assessment indicating a need for substance abuse counseling; and for children of color, services beyond investigation. Taking interaction terms into account, youth with initial reports of neglect were less likely to be incarcerated as a violent offender unless they had prior non-CYA incarceration events.
- The addition of census tract indicators strengthened the impact of coming from a single parent home. High levels of violent crime combined with neglect or child welfare services beyond investigation doubled the risk of violent offending. Contrasts between neighborhood and individual characteristics also increased the risk of incarceration as a violent offender. For example, census tracts with large numbers of non-citizens had lower proportions of single parent households. Youth who lived in a high non-citizen area and came from single parent homes were more frequently violent offenders.

From Child Welfare Foster Care to Probation and CYA Placement

This portion of the study followed children from the point of entry into child welfare supervised foster care and examined potential entry into probation supervised foster care, later entry into CYA, and differences in the likelihood of incarceration for a violent versus a non-violent offense. Community level variables could not be included in this section due to a lack of location information in the foster care data.

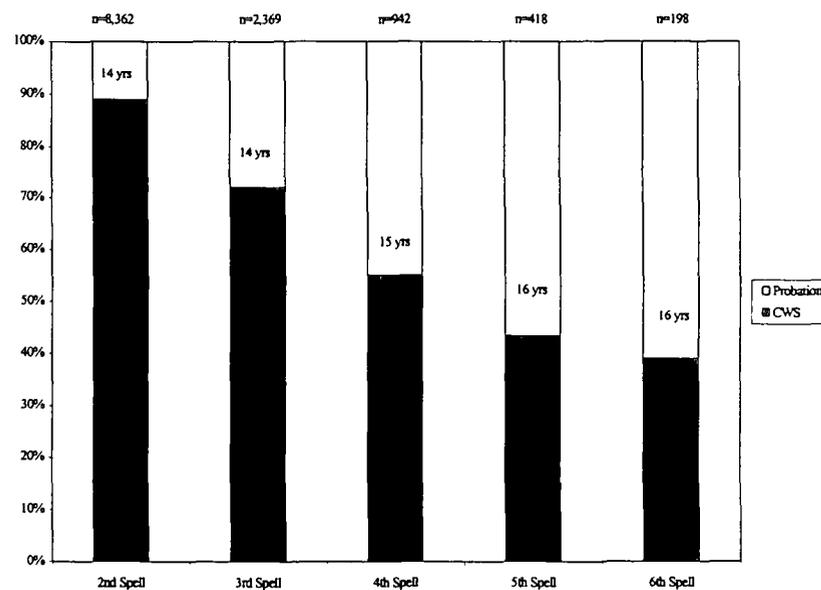
Child Welfare Foster Care to Probation Foster Care

Because youth who later re-entered care as probation supervised cases were more likely to enter CYA, we first examined transitions from child welfare to probation supervised, group or foster, care.

- Children placed in foster care between the ages of 12 and 14 and males were more at risk of re-entry to probation. There were no significant differences in risk of entry by ethnicity. Youth initially placed in group homes, and having multiple spells in care were more at risk for having later probation supervised spells (see Figure 6).

Figure 6 Re-Entry to Probation Supervised Foster Care by Number of Spells

Among youth re-entering care after a first spell supervised by child welfare, the likelihood of transition to probation supervised care increases with every re-entry to care (see Figure 4.20 in report).



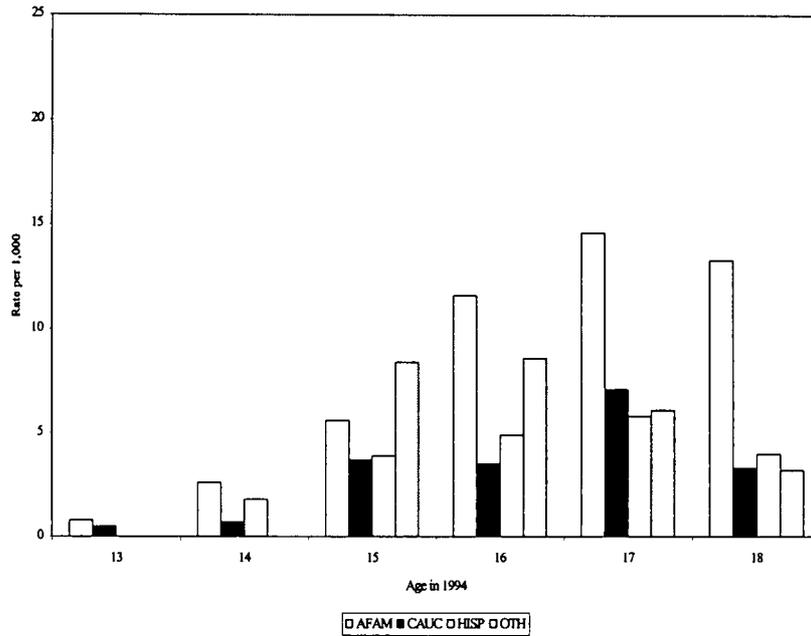
Foster Care to CYA

Overall, about 1 percent of the youth in foster care entered CYA during the study period.

- The 1994 entry rate per 1,000 youth in foster care was similar or lower for African American and Hispanic youth, but higher for Caucasian of children of Other ethnic backgrounds as compared to children with investigated abuse reports (compare Figure 7 below with Figures 2 and 3).

Figure 7 1994 Rate of CYA Entry Following a First Spell in CWS Foster Care by Age and Ethnicity

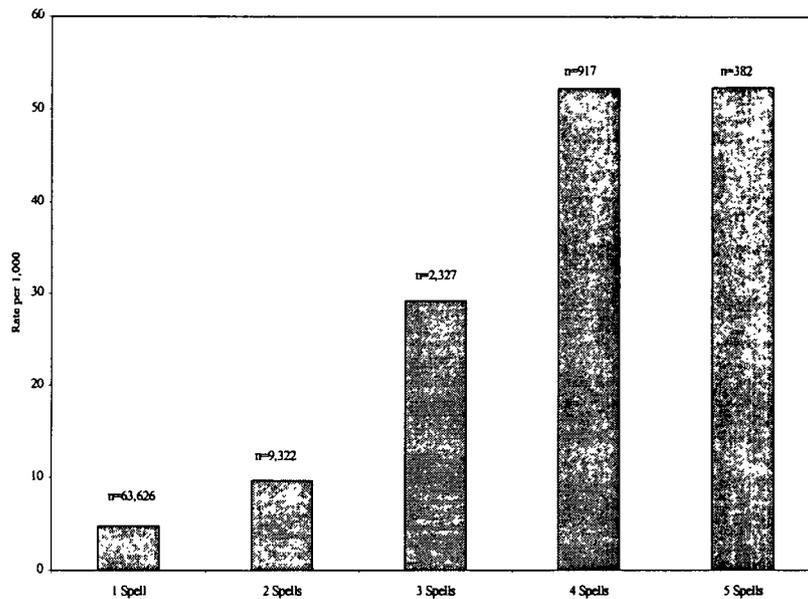
(See Figure 4.47 in report.)



- Rate of entry into CYA increased with the number of spell in care a child experienced (see Figure 8).

Figure 8 Rate of CYA Entry per 1,000 Children with CWS Supervised First Spells by Number of Spells

(See Figure 4.52 in report.)



- Higher risk of CYA entry for females with known child welfare histories continued among foster youth. Females comprised 4 percent of the total CYA population, 9 percent of the 10 county child welfare/ non-foster population who entered CYA and 12 percent of the statewide foster care population who entered CYA.
- Similar to findings in the 10 county analyses, children in foster care who later entered CYA were more frequently born to adolescent mothers than children in foster care who did not enter CYA.

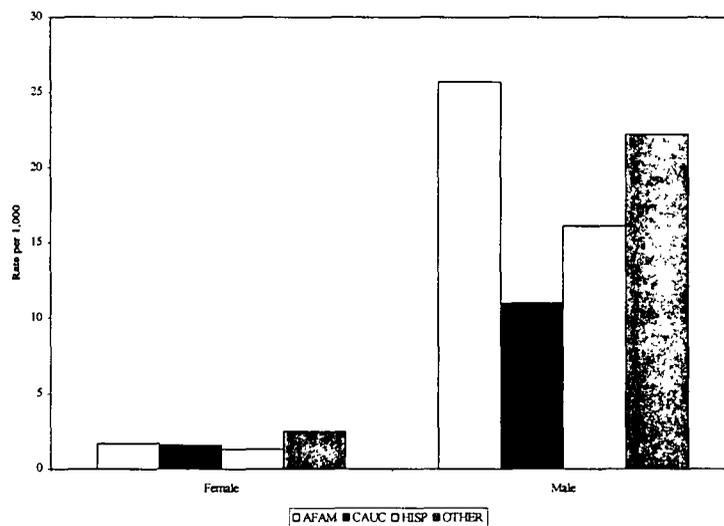
Risk of Entry into CYA Including Probation Placements

Models of CYA entry following foster care were constructed including probation placements and then excluding youth with probation placements.

- Children entering care between the ages of 12 and 14 had a substantially higher risk of CYA entry than younger or older children. The higher risk of entry for youth of color was intensified if they were reunified after the first spell. Youth with later probation spells had very high levels of risk of CYA entry—though this risk was reduced somewhat among youth of color. Youth removed from the home due to neglect or physical abuse were almost equally at risk for CYA entry and at much higher risk than those removed for sexual abuse. Having multiple spells in care, however, diminished differences in risk of entry by removal reason.
- Bivariate analyses indicate that while there are significant ethnic differences in rate of entry into CYA for males, there are almost no ethnic differences in rate of entry among females (see Figure 9).

Figure 9 Rate of CYA Entry Following Foster Care Placement by Ethnicity and Gender

There were too few females incarcerated to detect ethnic differences according to gender in the multivariate model. There is some indication, however, that the ethnic differences in incarceration rates may be concentrated in the male foster youth population (See Figure 4.55 in report).



Risk of Entry: Excluding Youth with Probation Placements

- When youth with probation placements were excluded, the impact of gender and the main effect for ethnicity declined. The risk of CYA entry for children of color who were reunified after their first spell in child welfare supervised foster care doubled (1.90 for African Americans and 1.87 for Hispanics to 5.10 and 3.45, respectively). The risk of entry for children with more than three spells in foster care rose from 1.40 to 5.85.

Violent versus Non-violent Offenders

About 60 percent of the youth in CYA with prior foster care histories were incarcerated for a violent offense. This is the same proportion as found in the larger CYA population.

Including Probation Cases

- Children of color from single parent homes had a significantly higher likelihood of CYA entry for a violent offense than other children of color. Having more than three spells in foster placement increased the likelihood of being among the violent offenders for those youth who had early and sustained delinquency petitions.

Excluding Youth with Probation Placements

- In the analysis including probation placements, reason for removal from the home was not included in the final model; but after excluding probation placements, removal for physical abuse significantly decreased the likelihood of violent offending among children with stable placement histories and without indication of substance abuse counseling needs. Those youth who were reunified after a first spell in care and were later assessed as requiring substance abuse counseling at the time of CYA admission had a much higher likelihood of being among the violent offenders.

Research, Policy, Program, and Practice Implications

Despite the many limitations of administrative data research (detailed in the full report), the findings have several potential implications for policy and practice and also provide a map for future research.

- **Race and Ethnicity.** African American children in this study have the highest rate of involvement in the child welfare and CYA systems. Our study indicates that Hispanic children, however, have a similarly high risk for negative developmental outcomes following child welfare intervention. There is little research on system or developmental outcomes for children not of African American or Caucasian origins. Future research needs to focus efforts on understanding the service trajectories and outcomes for understudied populations such as Hispanic children in comparison to children of other

ethnic groups so that policies, programs, and practice may be responsive to these children and families.

- **Neglect.** While there may be a tendency to consider physical or sexual abuse more severe forms of maltreatment, neglect needs to be considered as an equally significant risk factor for later developmental outcomes like serious juvenile crime. Research, program evaluation and policy should focus on the outcomes and development of children from neglecting environments, highlighting what practices are most effective with what sub-population and at what age.
- **Developmental considerations.** Several findings in this study indicate that a child's risk for poor outcomes like CYA entry and violent crime vary according to the timing of events like child welfare services and the gender of the child. Research needs to move beyond consideration of system outcomes alone (e.g. recidivism or placement moves) to incorporate long term outcomes like juvenile delinquency in the evaluation of service effectiveness. This research must also consider the impact of child characteristics like gender and age at time of abuse in helping to understand how services interact with various populations and produce various outcomes.
- **Recurrent cases.** Recurrent reports of maltreatment, multiple placement moves, and repeated spells in foster care are all considered negative system outcomes. Our research indicates that these events are signals of significant risk for later negative developmental outcomes as well. A return to the child welfare system or instability within foster care should be targeted for intensive investigation and service provision. Research should focus on the most effective means of identifying cases which are at risk of returning to the system. Foster care policy and practice should place more emphasis on the development of permanency for the child.
- **The benefit of child welfare services.** Understanding the true benefit of services is severely hampered by deficits in outcome research. Our data indicate that children of color who are reported for maltreatment experience a protective effect of higher levels of child welfare service. Yet, for many children in this study who ended up in CYA after a previous report for abuse and neglect no services beyond the initial child abuse investigation. Yet, with the current service delivery and legal infrastructure in place, the child welfare system could provide more benefit than it now does if it had the resources to provide or coordinate ongoing services to a higher proportion of the children it knows about.
- **Community context.** Children in this study generally came from the poorest and most socially at risk neighborhoods. Research indicates that the more risk factors a child faces, the more protective factors are required to overcome those risks. Our research suggests that factors like community condition need to be carefully weighed when making policy and case decisions. For example, if cultural and familial ties are deemed to be of the

highest import to a child's life, then it seems reasonable that adequate support be provided to insure that children from poor families may be reunited or served within the community and still be able to achieve positive developmental outcomes.

- **Multi-system approach.** Children and youth in this study were frequently facing more than one level of risk and were involved in more than one public service agency (e.g. child welfare, public schools, probation, etc.). In addition the identification of substance abuse problems and prior services for serious emotional disturbance indicate that this group of offenders were engaged in a number of risk behaviors. It is unlikely that any single system could effectively serve a multi-problem family. Funding sources are currently very supportive of collaborative and multi-system efforts. Meta-analyses of program evaluations should be combined with studies like ours to thoughtfully guide the development and application of such strategies.
- **Administrative data and cross-system analysis.** Administrative data have the potential for a readily available low-cost method of conducting preliminary longitudinal research. Large scale examinations of service trends and outcomes can help identify areas for further research, target programs, and potentially assign costs to a child's trajectory through public service systems. Linkages between data sets can be accomplished using specialized data matching software and techniques, but pre-planned cross-system linkages would greatly improve the capacity of various systems to understand the actual extent of system overlap or transition, the timing of those occurrences and changes over time.

Conclusion

Most of the abused and neglected children in this study did not enter CYA, but the personal, social and economic cost of those who did is disproportionate to their numbers. Our study supports previous findings that maltreatment places children at significant risk for outcomes such as serious delinquency. Our research, however, also clearly indicates that there are significant differences among subpopulations of abused and neglected children in the apparent impact of child welfare services, community conditions, and other risk factors. There also appears to be reason for some optimism in the finding that services appear to mitigate risk of later serious delinquency among some groups. Further there are ongoing child welfare changes that can be made within the existing system that should have a positive impact on reducing later entries to CYA such as concentrating efforts to reduce recidivism and promoting permanency for foster children. Negative outcomes are not inevitable.

Of course, preventing the initial risk to children that stems from poverty or abuse is always the primary goal. Until we can effectively prevent such occurrences, however, we are left with a charge to intervene and, as much as possible, rehabilitate. The child welfare system is by design focused on intervention and protection. It cannot, in and of itself, provide all the service and support necessary to allow victims of abuse and neglect the opportunity to develop into positive adult roles. Yet, it has a well developed service delivery and legal infrastructure in place that

could provide more benefit than it now does if given the resources to provide or coordinate ongoing services to a higher proportion of the children it knows about. We hope that this study will be useful for promoting discussion among policy makers and practitioners regarding how best to use the child welfare system in concert with juvenile justice and other services to help children and youth transition to healthy and productive lives.



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Chapter 1: Pathways to Incarceration: Introduction

Researchers have long attempted to describe and explain delinquent and criminal behavior. Numerous risk factors for later criminal deviance have been identified such as poverty, child abuse and neglect, family dysfunction and many other individual, family and community characteristics. In the past decade, however, concern has mounted regarding the increasing severity and frequency of youthful offending. As researchers and policymakers sought new or improved means of addressing this issue, it became increasingly apparent that much remained unknown regarding how risk factors were related to delinquency, what intervening factors might mitigate those risks, and how more serious juvenile offenders might differ from youth who commit less serious offenses. The present study advances understanding of these relationships through a prospective analysis of adolescent incarceration following a child welfare agency response to a report of abuse or neglect, taking into account child welfare intervention levels and community poverty and crime.

Problem Scope

In 1994 juvenile offenders accounted for almost 20 percent of violent crime arrests in the United States--a 28 percent increase over the previous ten years (Snyder, Sickmund & Poe-Yamagata, 1996). Despite a slight decline in serious and violent crime nationwide, the projected increase in the adolescent population has generated great concern regarding the ongoing social and financial costs of youth violence in the United States (Snyder, Sickmund & Poe-Yamagata, 1996). In other words, a slight decline in the rate of offending is projected to be totally offset by the increased numbers of potential offenders.

Only a small percentage of youthful offenders progress through the system to long-term incarceration, but those that do account for much of the public concern and economic drain.

Estimates of the actual incidence of juvenile crime indicate that more than one in every 10 children will violate the law before they are 18 (Snyder et al., 1996), but only a small percentage are apprehended and charged. In 1994 only .1% of the juvenile arrests resulted in out-of-home placement--that is, group homes, camps and prisons (Butts, 1996). These youth, however, commit the more serious crimes.

Research has long indicated a connection between serious and violent youth crime and victimization as a child--cause for concern as young people in the United States are very likely to experience violence in the form of child maltreatment, and witness domestic violence, community violence, and violence by other children and youth (Finkelhor & Dzuiba-Leatherman, 1994; Perkins, Klaus, Bastian & Cohen, 1996). In 1994, states reported receiving more than 2.9 million child abuse and neglect reports--almost 1.1 million of which were substantiated (NCCAN, 1996). According to these reporting figures, the rate of substantiation has increased by 27 percent. The proportion of children living in poverty (also highly associated with maltreatment, other family conflict, and community violence) has also increased in recent years (US Department of Health and Human Services, 1996). The concurrent upward trends in child poverty, child maltreatment and youthful offending do not appear coincidental, although their precise relationship is uncertain.

Location of Study

California is particularly plagued by high rates of child victimization and youthful offending. California accounts for one sixth of the nation's child abuse reports; more than 600,000 abuse or neglect reports were made in this state in 1995 (Needell, Webster, Barth & Armijo, 1996). California also has over one fifth of the nation's children in foster care (Barth,

Courtney, Berrick, & Albert, 1994). The rate of youthful offending in California is quite high-- now ranking third in the nation for arrests for violent juvenile crime (Snyder & Sickmund, 1995). This state also has a major share of the nation's incarcerated youth. As of 1991 nearly half of all youth in public detention centers were housed in four states: California, Florida, Michigan and Ohio (Snyder & Sickmund, 1995). Thus, juvenile justice and child welfare systems in California have a unique and pressing need to understand the relationship between child victimization and youth violence as well as the pathways of children through available service systems prior to negative outcomes like incarceration.

Study Objectives

The present study used administrative data at the statewide and county levels to examine the potential transition from contact with child welfare services among school-aged children to later incarceration in the California Youth Authority (CYA). There were two goals and three primary objectives for the present study.

The first goal was to create an ongoing research source for the study of linkages among child welfare and juvenile justice systems. To advance knowledge regarding the transition of children from the child welfare system to incarceration on a large scale and over time, this project reconfigured and linked several large administrative data sets creating an ongoing archival resource for research in this area.

The second goal involved conducting a multi-level ecological study of children crossing over from child welfare to CYA that would add significantly to our understanding of this phenomenon as well as be responsive to the needs of local agencies for basic descriptive data regarding the flow of cases between the two systems. Because there are few, and insufficient,

previous studies of the connections between children served in the child welfare and juvenile justice systems, the study explored entry into the CYA according to placement into foster care across the state; and then, within ten counties we examined the service levels and case characteristics of children with prior investigated reports of abuse or neglect. Specifically, the study examines entry to the CYA following some level of child welfare intervention and then explores differences among CYA admissions according to the presence of prior child welfare records.

The two prior studies which examined children served in the child welfare system and later delinquency found few differences by service type in the likelihood of delinquent acts (Runyan & Gould, 1985; Widom, 1991). The children in both samples, however, were selected at a very early stage in the development of child welfare regulations. Additionally, their examination of services was limited to a comparison of children either placed into foster care or served in the home--there were no "investigated but unserved cases" in these studies. Therefore, beyond conducting the study in a state with one of the largest child welfare and juvenile justice systems, this study has several advantages in using a contemporary sample.

Previous work relating child welfare services to delinquency did not discriminate by violent or non-violent acts. A second objective of the study was to attempt to discriminate between those who were incarcerated for a violent offense versus those incarcerated for serious, but nonperson crimes. Although previous studies have often sought to link violent victimization with violent behavior (Widom, 1989a), recent research on the links between maltreatment and delinquency led to a hypothesis that neglect and poverty would be at least as powerful a predictor of incarceration for a violent offense as physical or sexual abuse. This study also provided a

more comprehensive view of the role of mental health needs among children served in child welfare who become incarcerated for serious or violent offenses. Specifically, the study considered two factors which suggest potential mental health needs among incarcerated youth with child welfare histories: (1) serious substance abuse counseling needs at time of CYA entry; and (2) prior placement in an educational program for the severely emotionally disturbed.

Unlike the two previous studies which examined delinquency in the context of prior child welfare service, this study also examined the above issues in an ecological context. Adjusting the sample to accommodate the availability of crime and census data, the risk of incarceration and the likelihood of incarceration for a violent offense was re-analyzed adding community level indicators. Based upon studies of community risk factors (Coulton & Pandey, 1992) and hypothesized impact of cumulative risk in the resiliency literature (Herrenkohl, Herrenkohl & Egolf, 1994) it was surmised that children who experienced living in high crime/ high poverty neighborhoods in addition to experiencing child abuse and neglect might be at increased risk for both outcomes.

Theoretical Framework

Ecological systems theory forms the foundation upon which this study was based. In other words, the maltreated child was viewed as a system existing within and interacting with other systems. The child exists within a family which functions within a community which interacts with the various systems such as schools or social services which in turn function within the legal and political environment of the time (Garbarino, 1992; Von Bertalanffy, 1974). While this theory lays the foundation for the multi-level study design, this study could not test all the principles of reciprocal influence inherent in systems theory. The principle of the maltreated

child as a system moving to higher levels of differentiation, however, is central to the notion that child welfare intervention could have a potential mitigating effect. The ecosystems perspective of a person as a dynamic changing system is counter to the notion of a deterministic fate for children raised in what James Garbarino (1992) had called “toxic environments.” Therefore, such an approach to the study of incarceration following contact with child welfare services due to abuse or neglect suggests that intervention can offset developmental damage attributed to the maltreatment experience(s). Within this overarching framework, three theories of behavior frequently cited in juvenile delinquency literature provided guidance for the following inquiry: (1) social learning, (2) social control, and (3) social disorganization.

Social learning theory as outlined by Bandura (1973) leads to the hypothesis that violent offenders are more likely to have come from environments where violence is a learned and reinforced behavior. In other words, children who experienced physical violence directly and/ or were exposed to a certain level in the surrounding community should be more likely to become violent offenders.

Social control theory as outlined by Gottfredson & Hirschi (1990) is useful in considering the potential role of neglectful families as well as system intervention. For example, families are considered the primary source of protection and nurturance for children, but they also serve as primary vehicles for socialization or social control. Therefore, if children suffering neglect are more likely to become offenders than children suffering physical or sexual abuse, it may be that delinquent outcomes have a greater relation to dysfunction in mechanisms of socialization and social control than traumatic reactions or learned responses. It follows that if children placed into care are less likely to become offenders it may be that foster placement is providing an

adequate substitute for the controls absent in the biological family.

Social disorganization theory (e.g., Shaw and McKay, 1942) and related opportunity theories (e.g., Ogbu, 1983, 1988) provide potential explanatory mechanisms for the role of community in shaping outcomes such as delinquency. This family of theories suggests that both normative controls and normative opportunities for status or success are absent in certain communities which tend to have both high rates of crime and high rates of poverty. Therefore, maltreated children in these communities suffer from deficits in the home environment as well as fewer potential outside resources to guide healthy development. These children may tend toward criminal behavior as a means of establishing status and success unavailable or perceived as unavailable through other venues.

Contribution to the Literature

Previously, only two studies were published which examined the impact of child welfare services (particularly foster care) on delinquent outcomes, but as aforementioned, these studies lack generalizability. Because the cases in both studies initially came to the attention of the juvenile court before full implementation of mandatory reporting laws or permanency planning regulations (Widom, 1991), it is not known whether these samples may have experienced particularly severe maltreatment or had families that were otherwise involved in the courts and thus more likely to come to officials' attention. This study serves to update previous work by comparing results with previous studies which examined delinquency as an outcome of child welfare services prior to the advent (or at least full implementation) of mandatory child abuse reporting and permanency planning regulations. Unlike the present study, early studies of the impact of maltreatment on delinquent and violent outcomes fail to capture the more recent

dramatic increase in urban poverty and community violence. Even among studies with more recent samples, the rare occurrence of child maltreatment followed by placement in foster and group care (Barth, 1996), and the rare outcome of youth incarceration for violent offenses combine to make meaningful multivariate analysis impossible. In addition, information on Hispanic children who become involved in child welfare and juvenile justice systems is woefully lacking despite their increasing proportion of the population making even the exploratory portions of this study enormously useful to the field.

By focusing on the most serious youthful offenders this study avoided the frequent erroneous grouping of all delinquency as a single construct in the research literature (Jonson-Reid, in press). The most serious, chronic offenders who enter long-term incarceration facilities are a unique and small group of all juvenile offenders. It is important to have studies which specifically focus on those youth judged to be the greatest harm to the community as well as potentially the most costly in terms of their involvement in corrections and other public service systems.

Structure and Objective of the Report

The following chapter summarizes relevant history and policy regarding the juvenile justice and child welfare systems, current information about characteristics of children and youth who are in the child welfare system, information and characteristics of incarcerated youth, and then focuses on the current state of knowledge regarding serious and violent juvenile offending, particularly as it relates to child maltreatment and subsequent services. This review concludes with a consideration of the components of the theoretical framework used in this study. A chapter on methodology follows detailing the content of various subsamples, data sets, data

preparation and analyses conducted. The results of the analyses are presented in a single chapter divided into 2 sections. The first section focuses on the pathway from child maltreatment report to incarceration in 10 California counties. The second section presents results of a statewide examination of the pathway at the point of initial placement into foster care, through the foster care system, and into potential incarceration in CYA. The final chapter is a detailed discussion of the results, implications, and limitations of this study. To assist the reader in referencing between the results and discussion, the final chapter follows the same major subdivisions present within the results sections.

The need to relate research to policy and practice is an important aspect of the research agenda of OJJDP as well as the authors of the study. It is equally important to recognize the limitations as well as the strengths of administrative analyses. We have attempted throughout the report to consider the potential implications for the field while clearly acknowledging the limitations of administrative analyses and potential alternative explanations for results.

As evidenced by the development of Child Welfare agencies and regulations, society has determined that there is a moral and legal mandate to protect children and youth whose primary units of socialization--families--either fail to do so (neglect) or purposively harm them (abuse). On the other hand, as evidenced by increasingly harsh punishments, society has determined that juvenile offenders should be held accountable for serious and violent crimes with the primary goal of protecting potential victims and, secondarily, punishing or rehabilitating the offender. While protection of children from further abuse and neglect is an important goal, the association between neglect and abuse and later delinquency suggests that this protection may be insufficient in and of itself to prevent later outcomes like adolescent incarceration. Of course, primary

prevention of child maltreatment is preferable; but, given cases where child maltreatment has occurred it seems reasonable to attempt secondary prevention of negative developmental outcomes such as serious juvenile offending. In order to provide the necessary supports for such secondary prevention, understanding the pathways of children with investigated maltreatment reports is critical in assessing the later outcome of serious adolescent offending. This study advances knowledge in this area by examining children served within the child welfare system who later become incarcerated for a serious non-person or violent offense as adolescents. We hope that this report will serve as a catalyst for discussion and program development among agencies and policymakers as well as motivate and guide research efforts which may help prevent such occurrences in the future.

Chapter 2: Patterns and Pathways from Child Welfare to Incarceration

In contrast to the numerous studies linking a history of child abuse and neglect with later delinquency, research that examines the potential impact of the child welfare system and other services on later serious or violent juvenile offenses is almost non-existent. To provide a background for the current study, this review integrated a broad range of literature including relevant theories and research regarding the link between maltreatment and delinquency, more general literature on the origins of delinquent behavior, and the scant literature addressing the outcomes of children with child welfare service histories. Because the focus of this study is on official service system involvement, the following review begins with an overview of the policy and structure of the child welfare and juvenile justice systems as well as a brief description of the caseload composition of these two agencies at the national and state levels. Next, the review considers studies linking maltreatment, community violence and other risk factors to serious and violent juvenile crime.

Risk factors for serious and violent delinquent behavior are organized in two sections. The first can be easily categorized as a “violence begets violence” argument which examines the impact of child maltreatment, domestic violence, and community violence on violence and delinquency. The second section focuses on factors germane to the present study which research suggests as alternative explanations for the development of serious and delinquent behaviors. Both sections are organized according to an ecological framework from micro (individual and family characteristics), to meso (community and school issues), and to macro (a brief overview of broader issues of risk such as media violence and racism). This discussion of risk factors is then placed within the context of three theories integrated into two paths useful in guiding potential interpretations of this study: *social learning* theory, and an integration of *social control*

and *social disorganization* theories.

Certain terms are defined here to assist the reader in following the information provided.

Child welfare is defined as any official contact with child welfare authorities for abuse or neglect. When no differentiation between types of abuse or neglect are made, the term *child maltreatment* is used. For ease of presentation, *serious delinquency*, will be used to refer to instances in which violent and non-violent offenses are not differentiated. This phrase will also refer to felony level offenses as opposed to misdemeanor or status offenses. *Violence* will be defined as "behaviors by individuals [including gang-related acts] that intentionally threaten, attempt, or inflict physical harm on others" (Riess & Roth, pg.2, 1993); the discussion of youth violence will be further restricted to include only forms of juvenile violence considered legally and socially deviant therefore excluding dating violence or other forms of assaultive behavior which frequently fall beneath the threshold for legal intervention.

The Origin of Child Welfare and Juvenile Justice Systems in America

The history of controlling youth violence and serious delinquency cannot be discussed separately from the history of the juvenile court system--which handles both delinquent and dependency cases. The primary means of child rearing (or socialization) in America has always been the family (Krisberg & Austin, 1993). Early in America's history, if a child's biological family was unable to care for the child, the child was often indentured or apprenticed to another family. Largely due to an influx of immigrants and increasing urbanization, the growing numbers of unsupervised children in the early 1900's urban slum areas created a mounting concern. This concern, coupled with the gradual philosophical development of pragmatism or positivism in the United States (Von Hirsch, 1985), gave rise to the belief that socialization and

protection of children was at least partially a public responsibility.

Initially, child advocacy movements were largely private and united under a concept of *child welfare* that included everything from infant nutrition to delinquency (Bruno, 1948). However, after World War I there was increasing recognition that private charities could not manage the extent of the problem. The innovation of county and state departments of child welfare was developed and juvenile justice began to be subsumed under corrections (Abbott, 1938; Krisberg & Austin, 1993). By 1935, the Social Security Act codified the split between the dependent and the delinquent (Abbott, 1938). The term *child welfare* now referred to the abused, neglected and abandoned child while the *juvenile justice* system handled the delinquent youth. This specialization occurs in the service systems more than during the court process. According to Snyder and Sickmund (1995), with the exception of the few (less than 2 %) juvenile cases referred to adult criminal court, both delinquency and dependency cases are handled by the juvenile court.

Child Welfare Services

While different regions throughout the United States had begun to address maltreated children in the early part of the 20th Century, it was not until 1975 that Title XX of the Social Security Act mandated child protective services. After this federal legislation, all fifty states gradually enacted mandatory child abuse reporting laws. Today, in California, all professionals having official contact with children are required by law to report incidences of child abuse and neglect; private citizens are encouraged to report but are not mandated to do so and may report anonymously (WIC 16200 et seq.).

Child abuse reporting process. In California a maltreatment report is typically made

either to law enforcement or directly to county child welfare authorities. Once a report is made, an initial screening process occurs after which a report is either assigned to an emergency response worker for investigation or closed due to lack of information, low risk or a determination that the report is frivolous. In a few cases children may be immediately placed into an emergency shelter or foster home if the risk of harm is too great to wait for the investigation to be completed prior to action. For those cases which are investigated, an additional decision is made within thirty days to open the case for some level of service or close the case based upon being unable to find the child or determining that there is insufficient evidence regarding risk to the child. Among those cases which are opened for services, families may receive brief referrals and supports with rapid case closure, enter a family preservation or maintenance program, or a child may be placed into foster care. A child is placed into a foster family, group home or other designated facility based on his or her assessed needs.

Foster care placement policy. Criticism of the foster care system mounted in the 1950's through the early 1970's, with several studies concluding that children in foster care were aimlessly drifting through the system (Maas & Engler, 1959; Stein, Gambrill & Wiltse, 1978). Subsequently, two major pieces of legislation were passed; the Indian Child Welfare Act of 1978 (PL 95-608) and the Adoption Assistance and Child Welfare Act of 1980 (PL 96-272). These acts were intended to prevent needless disruption of families and ensure a permanent home for those children who could not be returned to their biological families. Those who were unable to be reunified with the family of origin were to be adopted, placed into guardianship or placed into a permanent foster family setting. In 1985, PL99-272 was passed, creating the Title IVE independent living program for adolescents in foster care. More recently, the Multi-Ethnic

Placement Act (PL103-382) and Family Preservation and Family Support Services Bill (PL103-66) have augmented policy out of continued concern for the primacy of family and kin while balancing the needs of the child for a permanent home.

Juvenile Justice

The initial foundation of the juvenile court was based upon the idea of *parens patriae* (Tracy & Sheldon, 1992), or the state acting as a parent. This implied that juveniles were to be considered as needing guidance and less than fully responsible for criminal conduct, therefore requiring a separate system from adults. As an outgrowth of this philosophy, the early juvenile court effectively stripped juveniles of due process and expanded the concept of delinquency to include incorrigible or pre-delinquent youth (Flowers, 1986). With the advent of Supreme Court decisions such as *In re Gault* (Mnookin & Weisberg, 1989), the juvenile justice system began to move toward the establishment of various rights and protections for children. Today, although juveniles have many of the same due process rights as adults, the application of such rights varies a great deal from jurisdiction to jurisdiction (Ainsworth, 1996). The Juvenile Justice and Delinquency Prevention Act of 1974 (which has been amended several times in the last decade) provides the requirements of custody decisions. This Act was responsible for the deinstitutionalization of status offenders, separation of juvenile from adult inmate populations, and a requirement that states investigate and attempt to improve conditions of disproportionate minority incarceration (Snyder & Sickmund, 1995). As mentioned in Chapter 1 the recent increases in juvenile serious offenders have led to the tightening of regulations in many states. In California, adolescents as young as 14 may be tried as adults for person crimes, as well as certain drug-related and burglary offenses. Additionally, sentencing of minors can now be extended

beyond age twenty-five to allow for long-term incarceration (Torbet, Gable, Hurst IV, Montgomery, Szymanski, & Thomas, 1996).

After a complaint is made. The path to incarceration begins with the point of contact with law enforcement. A police officer is the typical initial point of contact who then has the option of detaining, citing and releasing, or informally sanctioning and releasing the youth. Among those cited and/ or detained an intake officer decides whether the case will be handled formally in the court or informally on voluntary probation. Once a decision to handle a case formally is made, the court may choose to dismiss charges, place a juvenile on formal probation or out-of-home placement. Out-of-home placement options range from community group home facilities to high security detention centers (Greenwood, 1996).

In California, the most restrictive juvenile incarceration facilities are operated by the California Youth Authority (CYA). Some counties do operate medium-term incarceration facilities (camps) as an alternative to state level commitment, but these facilities are reserved for younger and less serious juvenile offenders (Palmer & Wedge, 1994). The CYA does not admit minors below the age of 11 years and over half of the population is committed due to a violent offense. CYA facilities typically either retain juveniles whose sentences end prior to their 25th birthday or juveniles sentenced to adult terms but recommended to CYA for placement until age 25 when they would be transferred to an adult correctional facility (Torbet et al., 1996).

Case Characteristics and Service Patterns

The following section presents an overview of the current case characteristics and service patterns of children in the child welfare and juvenile justice systems.

Child Maltreatment

The latest available assessment of the incidence of child maltreatment comes from the NIS-3, a survey of mandated reporters which concluded that there had been a substantial (over 50% across categories) increase in the incidence of maltreatment since the previous study in 1986 (Sedlak & Broadhurst, 1996). The National Center on Child Abuse and Neglect estimates that 47 per 1,000 children are maltreated and roughly half are over the age of six years (NCCAN, 1996). The Third National Incidence Study (NIS-3), which attempts to estimate the actual incidence of maltreatment rather than counting children actually reported to child protection authorities, found that children from families with annual incomes below \$15,000 were over twenty times more likely to experience maltreatment and reported no difference in incidence by ethnicity when controlling for income (Sedlak & Broadhurst, 1996). In contrast, data on children reported for maltreatment do show significant differences by ethnicity. Nationally, African American children have the highest incidence rate of maltreatment reports at 25 per 1,000, followed by Caucasian children at 11 per 1,000 and Hispanic children at 10 per 1,000 (NCCAN, 1996). Some researchers contend that differential rates of reporting reflect an increased surveillance or reporting bias toward families of color (Sedlak & Broadhurst, 1996) while other research indicates that such reporting differentials reflect the underlying impact of poverty (Coulton & Pandy, 1992).

In California, over 600,000 maltreatment reports were made in 1995; almost half of these reports are made for reasons of neglect (Needell, Webster, Barth, & Armijo, 1996). A study of nine nonrandomly selected counties in California which had the capacity to unduplicate reports revealed that similar to national figures, slightly over half of the reports were made on children

over six years and about 50 percent of reports were made on females. Ethnic distribution of reports were 15 percent African American, 46 percent Caucasian, 31 percent Hispanic and less than 7 percent Asian and other ethnic groups (Berrick, Needell, Barth & Jonson-Reid, 1998). Similar to national figures, incidence rates were highest for African American children regardless of age (Berrick et al, 1998). The potential contribution of poverty to these rates could not be determined from these data.

Investigation. After a report is made, a variety of decision-making processes begin with the decision of whether or not to investigate a report of abuse or neglect. The present study is limited to an examination of children with at least one investigated report for maltreatment. Therefore an understanding of what is known about children who receive investigations and how they compare to children whose cases are closed at referral is useful.

A study based upon 1986 data recorded from intake workers from five states found that 42 percent of cases went uninvestigated (Wells, Fluke, & Brown, 1995). Using logistic regression to model cases which received investigation versus those which did not, the most significant contributors to the decision to investigate were a child being under the age of two years, report of injury, allegation of sexual abuse, and no missing data (e.g., reports with incomplete addresses or other missing information were less likely to be investigated). In California, a recent study (Berrick et al., 1998) revealed that over 65 percent of cases in nine counties were referred to an investigating worker. Younger children were more likely to receive an investigation, reports of physical and sexual abuse were slightly more likely to be investigated and children of Hispanic or Other ethnic groups were more frequently investigated. (This study lacks a measure of severity of the abuse incident and cannot assess the extent of missing data on

the original report. These missing data items make it difficult to compare the California study to previous work.)

Services and foster placement. One of the predominant problems in assessing child welfare interventions other than foster placement is the use of different definitions for the word "service," as well as difficulties assessing the depth and utilization of outside referrals. Goerge, VanVoorhis, Sanfilippo, & Harden (1996) found that in Illinois only 4.5 percent of investigations resulted in a case opening whereas in Michigan 100 percent of investigations resulted in services. These differences were attributed to the states' interpretation of the terms "services" and "open." In the latest national summary of state child welfare reports, 14.8 percent of substantiated cases were either referred for or received some form of services (NCCAN, 1996). Freeman, Levine & Doueck (1996) reported that among child maltreatment reports within a large county in New York, 12 percent of the cases investigated were provided services. In nine California counties, children under the age of six--particularly African American children--were more frequently referred to some type of service after investigation (Berrick et al, 1998).

Children who are victims of certain types of maltreatment may also be more likely to receive services. Drake (1995) found that sexual abuse cases were much more likely to receive services independent of reporting source. Goerge et al. (1996) found that among investigated cases, children reported for neglect were slightly more likely to receive services and placed into foster care than children reported for physical and sexual abuse. Likewise, Berrick et al. (1998) found that children reported for neglect were more frequently referred to services.

There is also an indication that families which go on to receive services have multiple problems. A study of risk factors affecting foster care placement in 1,035 families found that

while the type of factors involved in placement are similar to those implicated in substantiation, the risk factors were cumulative in nature (Zuravin & DePanflis, 1995). Further, when familial problems such as parental substance abuse, developmental delays, mental health difficulties and domestic violence were held constant poverty, ethnicity, and prior reports were no longer significant. This finding is supported by a review of research on ethnic differences within the child welfare system, which suggested that ethnic differences are likely a reflection of the level of family dysfunction and accompanying poverty (Courtney, Barth, Berrick, Brooks, Needell, & Park, 1996).

Multiple reports and placements. One systemic outcome of great interest has been the issue of children receiving more than one maltreatment report over time. Some scant research (reviewed in the following section on pathways from maltreatment) indicates that repeated contacts decrease the likelihood of positive developmental outcomes among those children (Manly, Cicchetti & Barnett, 1994; Ney, Fung & Wickett, 1994). An early study of multiple reporting among 120 randomly selected open cases of physical abuse by Johnson and L'Esperance (1984) found that 45.8 percent had a second report within a two year period. Studies of court involved cases (Murphy, Jellinek, Quinn, Smith, Poitras, & Goshkorn, 1991) and foster care placements (Zuravin & DePanflis, 1995) have shown that approximately one third of these cases had more than one report prior to their current service involvement (Murphy et al., 1991; Zuravin & DePanflis, 1995). Three studies of substantiated maltreatment reports indicate that repeat reports are more likely to occur for children initially reported for reasons of neglect and that ethnicity is not a significant factor in recurrent abuse (DePanflis, 1995; Fryer & Miyoshi, 1994; Levy, Markovic, Chaudry, Ahart & Torres, 1995).

Re-entry into foster care and multiple placements while in care are both considered negative service outcomes for children served by the foster care system. Both phenomena have received relatively little empirical study. Recent studies of multiple placement indicate that despite the passage of permanency planning regulations, about one third of children in foster care continue to experience more than three placements (U.S. House of Representatives, 1994). Re-entry into foster placement after reunification reflects either an incident of re-abuse or other inability of the family to continue to care for that child at home. Generally, studies suggest that children experiencing short first stays in foster care are more likely to re-enter care (Rzepnicki, 1987; Wulczyn, 1991). A recent examination of re-entry in California has shown that approximately 20 percent of children exiting to reunification will return to care (Needell et al, 1996).

Arguably re-entry like multiple placements may have a disruptive effect on a child or youth's development. Some research suggests that multiple placements do increase the risk for poor late adolescent outcomes such as delinquency (Widom, 1991). Other studies have examined the impact of mobility and found that major disruptions can have negative impacts on school performance, peer socialization and other socio-emotional outcomes (Courtney & Barth, 1996; Eckenrode, Laird, & Daris, 1993).

Maltreatment and poor developmental outcomes. While many studies linking child abuse or neglect to adolescent or adult outcomes exist--few studies have specifically focused on developmental outcomes for children officially reported and served in the child welfare system. Children reported for maltreatment have been said to be at greater risk of being a victim of later homicide (Sabotta & Davis, 1992); greater risk of intellectual and academic deficits (Perez &

Widom, 1994); depression and other socio-emotional difficulties (Duncan, Saunders, Kilpatrick, Hanson & Resnick, 1996; Kurtz, Gaudin, Howing & Wodarski, 1993); abusing their own children (Widom, 1989a); and substance abuse (Duncan et al., 1996; Widom, Ireland & Glynn, 1995). [Unfortunately, these studies fail to differentiate whether the services a child received following the report of abuse or neglect lessened these poor outcomes.]

The majority of literature focused on outcomes of child welfare services examines older youth exiting from foster care. Most of these studies were completed prior to 1984 and have varying degrees of methodological soundness (see McDonald, Allen, Westerfelt, & Piliavin, 1993 for a thorough review). Generally, studies of outcomes of foster placement focus on exits related to permanency planning such as reunification, adoption or emancipation (Barth, Courtney, Needell & Jonson-Reid, 1994). Thus, little is known about those youth who have alternative exits such as mental health institutionalization, death or incarceration.

There is only one recent large scale study of youth exiting foster care in the United States (Cook, McLean & Anselm, 1991). Case record abstracts were conducted for 1,650 adolescents exiting care between January 1987 and July 1988. Many of these youth had negative outcomes at the time they were discharged. For example, 66 percent of the exit cohort did not graduate from high school, 29 percent had a substance abuse problem, and 16 percent had recorded delinquency events. Unfortunately, incarceration was aggregated with psychiatric institutionalization and drug rehabilitation (14 percent total). A study of adolescents exiting foster care in California found that 16.8 percent had "unsuccessful" exits, which included runaways, refusing services, incarceration, hospitalization, abduction or death (Courtney & Barth, 1996). In general, this study found that increased number of spells and placement in

either a group home or guardianship setting increased the likelihood of an unsuccessful exit from care. However, attributing this to foster care is difficult as it is unknown what the results would have been otherwise. Because the intent of the child welfare system is to remove children only in the most severe cases, poor outcomes may result despite child welfare services because of the developmental harm children may have suffered.

A Focus on Serious and Violent Juvenile Offenders

Though certainly not the only outcome of interest for children served by the child welfare system, the onset of incarceration for a serious offense is important for many reasons. First, several studies have indicated that a relatively small number of serious and repeat offenders commit the majority of serious and violent juvenile crimes (Snyder & Sickmund, 1995).

Arguably then, the child welfare cases who transition to serious or violent offending may have a significant impact even if the absolute number is small. It is also of concern if the children whom we deem necessary to protect at one age are unable to achieve a successful transition to adulthood at another age.

Though not a part of the present study, cost of multiple system involvement is an important issue. Costs per adjudicated youth with child welfare histories are difficult to estimate because of the variation in type, duration and depth of services in both systems. Estimates of the average annual cost of incarcerating a youth in California are around \$30,000, which does not include earlier law enforcement and court processing involvement (N. Sknovd personal communication, June 16, 1997). Similarly the costs of child welfare services are difficult to assess outside the monthly reimbursement rates for the more restrictive practice of foster family or group care, which is a small proportion of child welfare expenditures. For those children

reported for maltreatment who are eventually placed into foster care, payments in California can range from nothing (in the case of certain relative placements) to approximately \$4500 per month depending upon the type of placement and level of need of the care (Webster & Barth, 1997). Despite the inability to attach an exact dollar estimate, those children who require public child welfare services and then transition to the juvenile justice system are arguably an expensive group. Further, given the educational and social deficits of those youth who will exit the justice system after age eighteen, many face long-term economic consequences in the form of an inability to obtain significant employment. Prevention and, in the present study's case, secondary prevention efforts are at least partially grounded in the idea that more efficient and effective services at an earlier stage may help allay some of the costs of later negative developmental outcomes.

Offender Characteristics

In addition to monitoring trends in offending and corrections, differences in offender characteristics by ethnicity, age, and more recently, gender have long been of great interest to researchers.

Age. The increase in serious offenses committed by young children has gained increasing media and research attention. Early onset of offending has been associated with both chronic and violent offending populations (Cornell, 1990; Rivera & Widom, 1990). Still, while much research has been done to identify early predictors of later delinquent behavior, few studies specifically focus on the early onset of serious offending. One study of 177 adolescent boys found that early onset of delinquency was related to poor parenting skills, which in turn increased the likelihood of association with delinquent peers (Simons, Wu, Conger & Lorenz, 1994). The

semi-rural, midwestern location and the self-report nature of the study, however, make findings difficult to generalize.

Researchers studying the initiation of violent offending among females completed in-depth interviews with 43 women arrested for a violent offense and 42 women incarcerated for a violent (non-family) offense (Sommers & Baskin, 1994). This New York sample was 70 percent African American, 20 percent Hispanic and 10 percent Caucasian. Among 60 percent of the female offenders, the self-report age of fighting onset was slightly less than 10 years--thus the sample was divided between early and late onset of delinquency. Early onset women were more likely to have one parent in a psychiatric hospital, to be abused by a stranger, to live in a neighborhood with a high concentration of poverty, to have problems in school and to have substance abuse issues.

Gender. Compared to the volume of research on delinquency overall, few studies have focused on the female delinquent. The percent change of arrests for females committing serious offenses has increased at a rate double that of male offenders across offenses; the rate of change for females committing violent offenses was 60 percent higher than males committing violent offenses between 1989-1993 (Poe-Yamagata & Butts, 1996). Female juveniles, however, are less likely to progress throughout the juvenile court process than males. Females are therefore still entering long-term detention facilities at a lower rate than males (Poe-Yamagata & Butts, 1996). A study of violent female offenders by Tracy and Sheldon (1992) comparing all court referred females charged with a violent crime ($n = 448$) to a systematic comparison of males charged with violent crimes ($n = 260$) helps elucidate a reason for this trend. They found that females were more likely to have their cases dismissed primarily due to the severity of the

offense (e.g. while both males and females may be arrested for assault, the incident may be less severe in terms of injury and weapon use when involving female juveniles). Even among those cases handled formally, females were significantly less likely to be mandated to a specific program.

A study of 375 young adults attempting to identify early risk factors for antisocial behavior at age 21 compared males and female subjects on behavioral and emotional measures, academic ratings and levels of social support (Pakiz, Reinherz & Giaconia, 1997). This study found significant differences in risk factors in separate regression models for males and females. Males were more likely to display behavioral problems and experience family disadvantage prior to age six and were more likely to have experienced physical abuse. Females displayed behavioral difficulties after age nine and were more likely to have experienced sexual abuse.

Among youth arrested for homicide in 1993, girls were more likely to use a knife rather than a gun and more likely to be arrested for killing a child (Loper & Cornell, 1996). Females' victims were much more likely to be family members (32 versus 8 percent). Further, almost 80% of crimes by females were conflict rather than crime related (Loper & Cornell, 1996).

Several researchers have argued that given the differing socialization processes and expectations of females, their home and community circumstances must be worse in order to result in serious delinquent behaviors (Chamberlain and Reid, 1994). Evidence regarding the precursors of delinquent behavior among female offender population, however, remains restricted to a small study of urban delinquent females in the early 1980's (Gibbs, 1982), a few self-report studies, demographic examinations of court or incarceration populations, and one or two examinations of female delinquents in treatment programs.

Ethnicity. The disproportionate numbers of ethnic minority youth in incarceration facilities has generated research and concern for some time regarding potential biases in the arrest, adjudication and incarceration process (Pope and Feyerherm, 1992). Nationwide, the majority of juvenile arrests for serious crimes occur with Caucasian youth, but following arrest, African American males tend to be referred for formal court processing at a higher rate than white males--particularly in larger urban counties (Snyder & Sickmund, 1995). In some areas these findings hold true even after controlling for crime seriousness, prior record, and other factors involved in juvenile justice processing, however, the effect of ethnicity has been found to vary by location (Walker, Spohn, & DeLone, 1996). In a study of the processing of juvenile offenders in California, Pope & Feyerherm (1992) found that Hispanic youths had the highest rate of court referral and detention. Four percent of white youth, seven percent of African American youth and 10 percent of Hispanic youth who had formal court petitions were committed to CYA. The authors suggest that disproportionate processing of minorities does exist, but has been primarily labeled an African American versus Caucasian youth issue because most studies are conducted in states without significant proportions of Hispanic or other youth of color.

Similar to investigations of ethnic variation in the child welfare system, interpretation of differing rates of justice system involvement between ethnic groups is also complicated by issues of class as poor youth have been shown to have higher rates of representation as they progress through the juvenile justice system. Children of color are also disproportionately poor in the United States (DHHS, 1996) confounding the influence of ethnicity on court decisions. Children of color are also disproportionately represented among high risk groups such as high school drop

outs across the nation (Snyder & Sickmund, 1995). In turn, low educational achievement has been linked to delinquent behavior (Loeber & Dishion, 1983; Pakiz, Reinherz & Giaconia 1997).

Family structure and other risk factors. In addition to age, ethnic, and gender variation throughout the juvenile justice system, other studies have found that incarcerated felony offenders have more socioemotional problems (Otnow Lewis et al., 1988; Snyder & Sickmund, 1995), educational deficits (Gerstein & Briggs, 1993), and a longer history of juvenile criminal records (Cornell, 1990; Gerstein & Briggs, 1993). There have been mixed results regarding family dysfunction with some studies finding a significant level of maltreatment or other family conflict among offenders (Snyder & Sickmund, 1995) and others which emphasize the impact of confounding factors such as family size or poverty (Goetting, 1994).

The Pathway From Maltreatment to Serious and Violent Juvenile Offending

Research and theory on the topic of youth violence has moved toward increasingly complex and interdisciplinary explanatory models (Aber, 1994; Tonry, Ohlin & Farrington, 1991). In support of this trend, an eco-systems framework is employed for the following review. This approach, initially developed by Urie Bronfenbrenner (1977), and furthered by Belsky (1980) and Garbarino (1990 & 1992), suggests that individuals exist within a multi-level eco-system. These levels may affect the individual directly or indirectly and are dynamic in nature.

Within the context of this study, the micro-, meso-, exo- and macro-systems provide different routes of exposure to violence and risk factors. At the micro-system level the child may be exposed to violence within the home environment. At the meso-system level children may be exposed to violence within the community and school settings. At the exo-system level children may be exposed to violence through the media and/or experiences of the parents in work and

community settings, which may influence the acceptance of violence within the home. Finally, certain writers propose that a form of violence or risk at the societal level (referred to as “macro-level” in this study) occurs through racism, diminished socioeconomic opportunities for certain groups, and the cultural acceptance of violence as a part of human nature (Gibbs, 1989; Dembo, 1988; Graham & Gurr, 1969; Nagler, 1982).

The violence begets violence debate. Of particular interest for many years has been the association between childhood exposure to violence and juvenile delinquency although certain limitations within the literature make a review of this area complicated. First, there is a lack of differentiation between *violent* and *non-violent* delinquent offenses in many studies, therefore relevant studies are included which do not differentiate among offense level. As there is evidence (at least among males) that aggressive tendencies may remain relatively stable from childhood on (Lefkowitz, Eron, Walder & Huesmann, 1977; Sampson & Laub, 1992; Widom, 1989a), the literature linking child maltreatment to aggression is also relevant to the understanding of violent youth behavior. However, the level of translatability of such research to criminal offenses is still being explored. In Rivera and Widom’s (1990) study 63 percent of violent juvenile offenders (N=57) became violent adult offenders. Haapasalo and Tremblay (1994) found that delinquency in youth was related to certain levels of fighting behavior among younger children (N=948), indicating that subtypes of aggressive behaviors have different etiologies. Stability of violent offending across the lifespan may be frequent, but is not inevitable.

Micro-system Violence

Although substantial questions about the magnitude and dynamics of a child

maltreatment-delinquency theory arise due the methodological limitations of past research (e.g. Schwartz, Rendon & Hsieh, 1994), the association has not been disputed. Because the literature in this area spans several decades, previous reviews exist. Indeed a thorough critique of the design and methodology of studies prior to 1987 was done by Widom (1989b). In her summary of the early literature, Widom identified numerous methodological flaws that have severely hampered attempts to understand the relationship between maltreatment and violent and non-violent delinquency.

Maltreatment or family poverty? A continuing criticism of the child maltreatment delinquency link is that socioeconomic considerations and family composition are the actual variables of importance rather than child maltreatment (Schwartz, Rendon & Hsieh, 1994). Current research remains mixed on this subject. In a study of 305 incarcerated youth, Dembo, Williams, Wothke, Schmeidler, and Brown (1992) found that family problems with alcohol, drugs and marital discord, and familial involvement in crime and child maltreatment experiences were stronger predictors than socioeconomic status of delinquent behavior. Using a weighted least squares method to develop a structural model of delinquency and drug use, only the sale of drugs was significantly related to socioeconomic status. This study population, however, consisted solely of incarcerated youth providing self-report information regarding delinquent acts. As aforementioned, poor youth are more likely to move through the processing system to incarceration which may limit the applicability of this finding to incarcerated youth rather than more general delinquent populations. Additionally the self-reported level of prior delinquent behavior was not cross-checked with official records, creating another source of potential bias.

While controlling for socioeconomic status, Rivera and Widom (1990) found that, in

contrast to nonmaltreated children, maltreated children had a significantly higher likelihood of violent adult offending, but not for violent juvenile offending. Kurtz, Gaudin, Howing and Wodarski (1993) also found highly significant differences between maltreated and non-maltreated children on measures of delinquency and aggression in a repeated measures analysis of variance controlling for SES. When the model was re-run to include only low-socioeconomic status children maltreatment became non-significant, but the decrease in sample size would have reduced the ability to detect differences.

Zingraff, Leiter, Myers and Johnsen (1993) studied 633 juveniles with substantiated maltreatment reports in comparison to a randomized school sample ($n=281$) and a poverty sample ($n=177$). Three logistic models comparing the existence of delinquency complaints between the school sample and the maltreated sample were significant, as were the three models comparing the maltreated children with the poverty sample. This second finding contradicts aforementioned studies indicating no significant difference in offending between poor and maltreated children. However, the poverty sample differs with a mean age of 13.8 years as compared to 15 years of age in the maltreated group, the poverty sample included 20 percent more African American children, more females, and recipients of protective services (non-substantiated), adoption, foster care, counseling and day care services. While African Americans are generally over-represented in official delinquency records, females are much less likely to offend (Snyder & Sickmund, 1995) making the higher percentage of females in the poverty group problematic. Further, younger children are less likely to have official delinquency complaints and children served in counseling or foster care may be at a reduced risk for delinquency due to greater adult supervision. Therefore, there are several possible confounding

factors within the poverty comparison group which makes the poverty versus maltreatment results difficult to interpret. It is also unclear whether the school comparison group was checked for welfare involvement. Perhaps the most important contribution of the Zingraff et al. (1993) study was the testing of a nested model without maltreatment against the model with maltreatment in each case. The model chi-squares decline significantly without the maltreatment variables indicating that maltreatment does have an important effect on delinquency complaints independent of individual and family factors. More recently, Kakar's (1996) study of 220 children with substantiated abuse cases compared to 220 non-abuse social services cases also found that abuse had a significant relationship to juvenile delinquency while controlling for SES by using family income in a given zip code.

Type and frequency of maltreatment. Earlier studies postulated a strong relationship between physical abuse and aggression, but current research suggests an equal or greater impact of psychological abuse; combinations of types of maltreatment; and varying degrees of frequency, severity and chronicity of abuse incidents (Crittendon, Claussen, & Sugarman, 1994; Kurtz, Gaudin, Howing, & Wodarski, 1993; Manly, Cicchetti, & Barnett, 1994). A study of 2,882 children demonstrated that as the level of physical and verbal aggression by parents progressed from no aggression to abuse, the probability of childhood aggression and delinquency increased three to four-fold (Vissing, Straus, Gelles, & Harrop, 1991). The graphic representation in this study indicates that the effect on childhood aggression is linear, while the effect on delinquency resembles an exponential curve with little effect until a certain threshold of parental aggression is reached. This type of result might suggest a dose-response effect, which adds some ability to attribute causality in a study otherwise limited to association (Kleinbaum,

Kupper, & Morgenstern, 1982). The same finding may also be due to reciprocal effects (e.g., the child's behavior may cause parental aggression to escalate).

Manly, Cicchetti and Barnett's (1994) study investigated 235 children at a summer camp for disadvantaged and troubled children and found significant regression coefficients for chronicity of abuse and starting fights, but not for subtype of abuse and starting fights. While the authors caution the reader as to the exploratory nature of this report and the nature of the camp and sample create problems for generalizability, their findings raise interesting questions for future research. First, if the violence was severe enough, even a single incident proved to be detrimental to the child's social competence. Further, as the abusive situation became chronic and CPS involvement continued over time, what the authors' called "duration of maltreatment" was a strong predictor of later aggression at camp.

In a chi-square analysis of violent versus non-violent offenders between 1986-1988 Famularo, Kinscherff, Fenton and Bolduc (1990) found that maltreated children were more likely than children who had not experienced maltreatment to be violent offenders. Physically abused versus non-physically abused children groups were also significantly more likely to be violent offenders. There was no relationship between the type of crime and sexual abuse or neglect. Unfortunately, the study lacked a comparison or control group and subtypes of abuse were not differentiated in their logistic regression model. Conversely, Zingraff et al. (1993) found neglect to be the sole significant contributor to violent offending. However, in the latter study maltreatment type became non-significant when controls for age, gender, race, and family structure were included in the models. This was also the case when comparing violent offenders with both comparison groups. Further the impact of the frequency of reports became non-

significant when controlling for individual and family characteristics (with the exception that number of reports remains significant in the full model for property offenses). The recent update of Widom's long-term study (1996) lends support to the equally damaging effects of neglect. The rate of arrest for violent crimes among adult males neglected as children was almost equivalent to that of those abused as children.

Another study indicated a differential effect of subtype combination as well as timing of abuse and later delinquent behavior (Kurtz, Gaudin, Howing & Wodarski, 1993). The more subtypes of abuse and neglect experienced by a subject, the higher the level of delinquency. [Coefficients for this aspect of the study were not provided in the article.] Further the combination of physical abuse and neglect was not a significant predictor of delinquency, but the combination of sexual abuse and neglect or sexual and physical abuse and neglect did predict delinquency.

Ethnicity and gender. The etiology of maltreatment experiences may also vary according to the ethnicity and gender of the child. In one study (N=162), boys were found to have greater negative adjustment problems which were attributed to the interaction between physical and psychological abuse. In addition, boys seemed to suffer greater effects from combinations of abuse and neglect early in childhood, while the negative effects for girls were greater if the abuse occurred in middle childhood (Wolfe & McGee, 1994). Gender and racial differences have also been suggested by Rivera and Widom (1990) in their efforts to explain the effect of maltreatment on later violent behavior. In their study, maltreated males were not more likely to commit a violent offense as a juvenile than controls, but were more likely to commit a violent offense as an adult. Conversely, maltreated females were more likely to commit a violent offense as a

juvenile, but not more likely to commit such an offense as an adult. Caucasian abused and neglected males did not show a greater likelihood of committing a violent offense than controls. However, African American males who were abused or neglected did have a greater chance of committing a violent offense than controls.

Meso-system Violence

The meso-system consists of intermediate environments with which a child has frequent contact such as a school, the local neighborhood, or extended family outside the home. This is the system level within which micro-systems operate. In an ecological framework, such micro-systems operate within as well as interact with the meso-level. For example, the families within a community may influence a community and conversely the community conditions may impact an individual or family.

Community poverty or community violence? Impoverished inner-city communities experience higher levels of violence in the community. Violence rates in central cities are 41.3 per thousand versus 25.2 per thousand in non-metropolitan areas (American Psychological Association, 1993). In Chicago, violent crime victimization is 50 percent higher for residents of public housing than the city as a whole; in Harlem the rate is almost 300 percent greater than New York City as a whole (Garbarino, Kostelny & Dubrow, 1991). Thus, children living in such areas face a greater likelihood of witnessing violence in their neighborhoods. Various surveys suggest between 20 and 60 percent of children in these areas have witnessed a violent crime and/or murder (Garbarino et al., 1991; Jenkins & Bell, 1997). A survey at Boston City Hospital revealed that one in every ten children under the age of six who attended the pediatric clinic had witnessed a shooting or stabbing (National Center for Clinical Infant Programs, 1992).

A few studies have attempted to empirically study the relationship between community violence and child or adolescent behavior. Schwab-Stone et al. (1995) studied a group of over 2,200 6th, 8th and 10th grade students in an urban setting to assess the impact of exposure to severe community violence (shootings or stabbings) on both psychological and behavioral outcomes. Analyzing data from a variety of self-report questionnaires, the authors used hierarchical regression to examine the relative impact of demographic variables versus violence exposure and feelings of safety on attitudes toward the use of violence, perception of risk and beliefs in the future. They then examined the impact of the same independent variables on alcohol use, aggression and antisocial acts and school achievement. The model predicted over 27 percent of the variance in aggressive/antisocial behavior with most of the variance (19.5 %) accounted for by exposure to violence and fear. The authors concede the difficulty in assessing causality, however, due to the cross-sectional nature of the sample, as well as the lack of measures of chronicity of exposure.

Attar, Guerra and Tolan (1994) studied the impact of community violence as well as neighborhood disadvantage. Because the children in the study were in grades one, two and four, most of the children were too young to assess official delinquency. The study did, however, measure childhood aggression (both current and one year later). Exposure to violence had the highest significant effect as well as a significant interaction with high neighborhood disadvantage (a composite of economic, crime, and housing measures). The interaction with community violence was not significant for children in a moderately disadvantaged neighborhood. A similarly strong relationship of socioeconomic status and social stressors relative to community violence was also found in a study of aggressive behaviors among 150 African American

elementary school students (Hill & Madhere, 1996).

Other researchers suggest that while community violence is a risk factor, its impact on the adjustment of children is not certain. In a study of 72 elementary school students, home stability and safety were the significant correlates with poor adaptational success (Martinez & Richters, 1993). Even if a child witnessed high levels of community violence, a stable home mediated the consequences. Osofsky, Wewers, Hann and Fick (1993) examined 53 children from a housing complex in Florida. Externalizing behavior problems on the Child Behavior Checklist were not significantly correlated with community violence, but were associated with family conflict. However, family conflict was significantly correlated with both witnessing and being victimized by community violence. A similar finding was reported by Cooley-Quille, Turner & Beidel (1995) who found that high levels of exposure to community violence frequently coincided with family conflict in a sample of 37 elementary school students.

Durant, Cadenhead, Pendergast, Slavens, & Linder (1994) sampled a group in and around a housing project, examining self-reported violence in relation to victimization and witnessing of community violence, family conflict, corporal punishment and a variety of psychosocial measures among 225 African American youth aged eleven to nineteen years. Using stepwise multiple regression, exposure to and victimization by community violence was the strongest predictor of violent behavior accounting for 27 percent of the 31 percent of the variance explained. Unlike the findings in Osofsky, Wewers, Hann and Fick (1993), family conflict was not found to be related to self-reported violent behavior by Durant et al. (1994) but was highly correlated with community violence. It may be that community violence impacts family conflict which then impacts child behavior or that families with a great deal of conflict tend to increase

the potential for community violence. Or it may be that the impact of community violence changes as a child ages and the influence of parents diminishes (Matsueda & Heimer, 1987).

Macro-violence

Macro-level systems refer to influences beyond the meso-system realm. Examples of macro-influences might include policy, the media, or societal values. These influences may alter the behavior of meso and micro systems or be altered by them (though much debate exists as to the varying ability of certain groups to impact change at this level).

Media. While researchers, child advocates and media representatives continue to debate the importance of violence exposure in the media to the development of violent behavior among children and youth, the existence of an association is generally accepted (Earls, 1994; Murray, 1997). Because the current study does not investigate television violence and because of the extensive number of reviews of this literature, only a brief summary of the findings is presented here.

Although research on the effects of media violence has faced methodological criticisms regarding the causal chain between observation and replication of violence, reviews of forty years of research and 3,000 studies have led researchers to conclude that the mass media (including advertising) does contribute to aggressive behavior and attitudes of acceptance of aggression in many children, adolescents and adults (Berry, 1993; Donnerstein, Slaby & Eron, 1993). Further, television viewing has been shown to be particularly high among low-income and minority children and families who have limited access to other forms of entertainment and information (Lazar, 1994). Heavy viewing in turn has a particularly high relationship to aggressive behavior in children (Palermo, 1995).

Society and the propagation of violent values. The impact of societal values and racism as a form of abuse on meso and micro system functioning have theoretical and indirect support through research on poverty and segregation. Some have proposed that certain pro-violence attitudes such as the American fervor about the protection of gun ownership (Nagler, 1982), demonstrate a societal “approval” of violence. It is certainly verifiable that the lethality of youth violence has increased due to the use of guns (Snyder & Sickmund, 1995), but it is not possible to conclude that American fascination with guns actually increases the likelihood of violence. Similarly, blocked opportunities due to societal barriers such as racism have been compared to a type of emotional abuse or violence (Gil, 1982). This type of violence is thought to reinforce violent acts as a means of obtaining status or a defensive reaction to an abusive environment. Media violence has also been linked to increasing societal expectation and acceptance of violence (Murray, 1997).

Remaining gaps in the violence to violence literature. While advances in methodology have been made, research examining the “violence begets violence” paths continues to be fraught with problems in sample selection, lack of control or comparison groups, statistical rigor, measurement of dependent and independent variables and definitional conflicts. Despite these flaws, there are important trends developing among recent studies which require further examination. The timing of the direct or indirect exposure along with duration, child’s gender and type of abuse experienced appear to have a great influence on the behavioral outcome. There is an indication that females and males express difficulties due to maltreatment at different times across the lifespan. There is also some indication that various ethnic groups have differing responses to childhood family violence, but information on ethnic groups other than African

American and Caucasian youth is almost totally absent.

The documentation is growing regarding a negative cumulative effect of violence exposure on child development. Thornberry (1994) examined the relationship of cumulative family violence impact with self-reported violence, using data from the Rochester Youth Development Study (exact sample size was not mentioned, but the retention rate of the original 1,000 is listed as 88 percent). About 38 percent of controls reported violent behavior; 60.1 percent of youth experiencing one type of family violence reported violent behavior; 73.2 percent of youth experiencing two types of violence reported violent behavior; and 78.5 percent of youth experiencing three types of violence reported being violent themselves. While sub-sample sizes and level of significance are not reported, the study does appear to support the aforementioned “dose-response” trend. The addition of research on community violence is promising in teasing out these relationships, but it is difficult to separate violence from other relevant factors such as decaying housing or poverty. Comparison neighborhoods which have similar ethnic and socioeconomic distributions but lower violent crime rates may be useful in addressing such issues. Macro-level effects of violence in the media and a type of structural emotional violence due to issues like racism may also play a role in the cumulative effect of violence exposure. This sphere of influence, however, is even more difficult to research due to the required breadth of exposure, ability to measure a subject’s awareness of effects, and ability to find comparison groups for analysis.

Mediating and Confounding Factors on the Pathway to Serious and Violent Delinquency

Researchers and theorists examining the phenomenon of youth violence recognize that there are a multitude of factors which may either contribute to or diminish the development of

serious criminal and violent behaviors. One of the difficulties of this acknowledgment is the development of models which are still concise enough to be of value in prevention and intervention (Gottfredson & Hirschi, 1990). In addition, some researchers investigating the effects of various trauma, have raised the issue that the meaning or perception of a particular event or situation may determine whether that factor becomes a barrier to success or an aspect of resilience in a child (Astor, 1994; Dawes, 1990; Hill & Madhere, 1996). The following section presents a few of the factors related to youth violence other than victimization.

Micro system risks

In addition to data available from maltreatment reports, a few micro-system variables are available through the assessment files on youth as they enter the California Youth Authority. All of the new admissions to incarceration in the present study are assessed as to the level of need of specialized substance abuse counseling. Youth entering CYA were also cross-checked with special education data to determine whether they had been identified as requiring educational services for reason of serious emotional disturbance. Family structure variables include the marital status of the youth's parents as well as the number of siblings.

Juvenile substance abuse. Substance abuse is both a form of and potentially a secondary causal agent in serious and violent juvenile delinquency. Early substance abuse has been associated with convictions for theft (Kandel, Simcha-Fagan & Davies, 1986), however, more recent research seems to indicate an almost parallel development of substance use and delinquent behaviors (Loeber, Van Kammen, Huizinga & Krohn, 1993). In other words, the two phenomena seem linked to underlying causal mechanisms which may then manifest their effects through delinquency and/ or substance abuse. In particular, substance abuse has been linked to

some of the same underlying causal factors (e.g., mental disorders) as delinquent behaviors in juveniles (Esbensen & Huizanga, 1991; Vega et al, 1993) and school failure (Brook & Cohen, 1992). Of note is the finding among three longitudinal studies of urban delinquent behavior that higher levels of substance abuse appear to accompany, or lead to, increased delinquent behaviors, but substance abuse was not related to onset of delinquency (Loeber et al, 1993). This finding appears to be supported by a panel study of 601 adolescent inner city health clinic users as well (Stiffman, Dore & Cunningham, 1996). They found that while substance misuse was significantly related to violent behaviors at all interview waves, the relationship was stronger during late adolescence/ young adulthood suggesting a concurrent development of risk behaviors.

Family structure and family dysfunction. A review of studies conducted prior to 1985 linking family structure to delinquency, found that marital discord and lowered parental supervision had a relationship to delinquent behavior (Loeber & Stouthamer-Loeber, 1986). In Dembo et al. (1992), many of the sample youth came from homes in which there was criminal involvement among other family members (70 percent had other members who had been arrested and 64 percent had members previously convicted of juvenile or adult crimes) as well as parental drug use (45 percent reported family members with alcohol problems and 28 percent with other drugs). Haapasalo & Tremblay (1994) found that stable aggression was linked to family adversity as measured by nonintactness of the family, low educational and occupational status and mother's age at the birth of the first child.

A few studies have suggested that as the number of siblings increases, the likelihood of delinquent behavior increases, but researchers disagree on the underlying mechanism for this relationship (Brownfield & Sorenson, 1994; Tygart, 1991). A recent review of available

literature on familial effects on later criminality indicates that the quality of the interaction between parent and child rather than structural components such as parental criminality or family size has the greatest impact (Goetting, 1994). A similar finding was reported by Stiffman et al. (1996) in a panel study of over 600 inner city adolescents. Like poverty and community violence, family structure and parenting effects may be difficult to separate. Single parent families and families with large numbers of children almost certainly face additional challenges in attempting to provide adequate supervision and attention.

Mental health. Estimates of the need for mental health services in the general child population range from 11.8 to 20 percent (Stouthamer-Loeber, Loeber & Thomas, 1992). There have been relatively few studies of the potential range of mental health needs of youthful offenders. Among a sample ($n=1,517$) of delinquent boys, 23 to 30 percent met the criteria for diagnosis with a disruptive behavior disorder (Stouthamer-Loeber et al, 1992). Studies of children with attention deficit disorder and conduct disorder have shown strong relations to later juvenile offending (Moffit, 1990; Mednick & Kandel, 1988) as well as to intermediary risks such as suspension from school (Fischer, Barkley, Edelbrock, & Smallish, 1990). In particular, there is some evidence that children who are diagnosed with both conduct disorder and ADHD are at an increased risk for later antisocial behavior (Foley, Carlton, & Howell, 1996). Fewer studies have examined the proportion of delinquents with severe emotional problems who might fit the educational criteria for severe emotional disturbance. In California, classification as severely emotionally disturbed generally means that the aforementioned disorders ADHD, CD as well as specific learning disabilities have been ruled out. In 1947, Hathaway and Monachesi attempted to use the MMPI to predict later delinquency in a sample of ninth grade males. Schizophrenic

profiles had the highest rate of later delinquency, but the false positive prediction rate was still over 76 percent (Lundman, 1993). One of the few recent studies which examined clinical disorders found that 15 percent of a randomly selected sample ($n=173$) of delinquents had a major mood disorder (Davis, Bean, Schumacher, & Stringer, 1991). The understanding of the relationship between severe mental disorders and serious juvenile offending is also likely confounded with the other risk factors presented earlier—notably maltreatment, poverty and other negative developmental influences. For example, a study of children's responses to poverty found that family poverty had a significant relationship to children's mental health independent of other factors (McLeod & Edwards, 1995).

Little information is available regarding the relative impact of services on mediating negative outcomes like incarceration for children with mental health and emotional needs (Simon, in press). Additionally, it is unknown what proportion of delinquents with serious mental health needs accessed mental health services prior to the onset of serious delinquency. One study of caretakers help-seeking behavior found that 75 percent of the caretakers of seriously delinquent boys never sought help from a mental health professional (Stouthamer-Loeber et al, 1992).

Meso System Risks

Two measures of meso-system risk are available in the present study--reading and math level and community conditions. Reading and math levels of CYA admissions are assessed with an adult education instrument (TABE). Community conditions such as crime rates and socioeconomic status are obtained through 1990 census files and community police departments.

School failure. Loeber and Dishion (1983) found in their review of early predictors of delinquent behavior that, according to a median measure of the relative improvement of predictive ability over chance, poor educational achievement improved prediction of delinquency by 23 percent (range = .11 to .46). However, the fact that many chronic youth offenders are also school drop-outs or did poorly in school (Hartstone & Hansen, 1984), does not elucidate the position of school failure along on the causal chain. For example, a recent study of reading ability and delinquency suggested that social disadvantage and child behavior problems preceded and contributed to reading failure as well as delinquency, but reading failure did not directly contribute to adolescent delinquency (Williams & McGee, 1994). School failure is likely to be related to poverty and issues of school climate (Kozol, 1991; Williams & McGee, 1994). Further, while school failure may in some cases lead to problems with achievement in adult life-- it clearly does not predict serious delinquency and violence as the dropout rate for certain ethnic groups is close to 45 percent (Snyder & Sickmund, 1995) and the youth crime rate much lower (around:5 percent of juveniles were arrested in 1992).

Community poverty Child poverty is associated with many detrimental outcomes such as child abuse (Kruttschnitt, McLeod, & Dornfeld, 1994), child health (Chafel, 1993) and inequality in educational opportunities (Kozol, 1991). These factors have also been linked to violence and delinquency (National Research Council, 1993; Ruttenger, 1994; Sanchez-Jankowski, 1991).

In a study of the relationship between gang homicide and poverty in seventy-five Chicago communities (Curry & Spergel, 1988), poverty significantly contributed to the level of gang homicides in a model which explained 61 percent of the variance. Another study suggested that

ethnic variations in offending were actually indicative of socioeconomic class. African American males are over-represented among serious and violent juvenile offenders (Snyder & Sickmund, 1995), but in Peebles and Loeber (1994), the difference in the occurrence and frequency of serious delinquent acts between Caucasian and African American youth became non-significant when residence in "underclass" neighborhoods was considered.

Impoverished communities may also have significance apart from the poverty of the residents. Coulton and Pandey (1992) hypothesized that it might be specific aspects of poor urban neighborhoods that were damaging for children. In a hierarchical regression model examining aspects of Cleveland in relation to delinquency filings, substandard housing and per capita population of children were the most significant factors. Sampson & Laub (1994) in a re-examination of the famous 1950's study by Gleuck and Gleuck conducted an analysis linking census level poverty variables to family supervision and attachment. He suggests a possible mechanism for the influence of impoverished neighborhoods on delinquent behavior. By using structural equation modeling he found that aspects associated with decreased social controls such as family size and structure were associated with factors of community disorganization such as poor social networks and living conditions.

Coping and Resiliency

Although not the primary focus of this study, the concept of resiliency or those factors which enable some children and youth to (apparently) transcend prior victimization to productive adulthood has gained increasing attention in the research on developmental risks. The hope is that by identifying factors which enable children from high risk environments to overcome the odds and successfully adapt, programs might be developed to encourage resilience in place of or

in addition to prevention of risk factors. Researchers propose caution in embracing this concept too readily for several reasons. Some researchers have concluded that a child's resilience may be area specific; for example, a child might do well academically but fail to be able to form personal relationships (Herrenkohl, Herrenkohl & Egolf, 1994). Other researchers fear that resilience may bolster the belief in biological or deterministic viewpoint by promoting the belief that "successful" adaptation is based upon some pre-existing personality or genetic trait (Garmezy, 1991). There is also great variation in the definition of successful outcomes leaving gaps in knowledge as to how protective factors function and how various combinations of risk and protective factors might follow different paths (Kaufman, Cook, Arny, Jones & Pittinsky, 1994; Luthar & Zigler, 1991). Little information relevant to protective factors was available for this study, however, it was hypothesized that child welfare intervention could possibly function in this manner--helping to mitigate some of the damage due to the experience of abuse and neglect.

Mitigating Results of Child Welfare Intervention

Child welfare intervention can be characterized as a micro, meso and macro level effect in the present study. At the micro level child welfare services alter a child's familial environment. At the meso level services such as foster placement may alter both the school and community setting for a child. At the macro level, child welfare represents years of policy development at the state and national level that guide its implementation. Only two studies have focused on the pathway from child maltreatment to official delinquency while considering the possible mitigating effects of child welfare services such as foster care placement.

Runyan and Gould (1985) studied the rates of juvenile delinquency in a matched sample of 144 children placed in foster care due to abuse as compared to 106 abused children served in

their original homes. Cases were matched on age (age 11 to 18 at time of report), ethnicity (African American or Caucasian) and gender. Children in the foster care cohort had mothers with fewer years of education, more episodes of maltreatment and higher rates of physical abuse than those receiving in-home services. Their findings did not indicate that children in foster care faced an increased risk of delinquency. A positive relationship was found, however, between the number of moves experienced by the child and delinquency. The investigators also found that only the foster care cohort contained cases of children later arrested for assaultive crimes. The authors attributed the finding regarding multiple placements to the child's behavior upon entering care, thus hypothesizing that the causal agent was the developmental or psycho-emotional damage prior to placement. (The same cautionary note could be given to the higher rate of assaultive crimes.) While intriguing, no multivariate analyses were performed, precluding further investigations of the association. In addition, the matching of cases on age, race and gender prevents the examination of these variables.

Likewise Widom (1991) ($N = 772$) found that children with a single placement and children abused but not placed did not differ significantly in later delinquent/ criminal records. In this study all the children were aged 11 or younger at the time of the maltreatment incident. Unlike the sample used in Runyan and Gould's study, however, these cases were all processed through the juvenile court prior to 1971. Further--perhaps due to the unique severity necessary to bring these children to the attention of the court prior to mandatory child abuse reporting--only 14 percent of the sample were not placed into foster care. The majority (56 %) of the children were placed into foster care between the ages of six and 11 years. Males and Caucasian children were much more likely to be placed than females or African American children. Children who

were both physically abused and suffered neglect were more likely to be placed than those with a single maltreatment type. Children placed in foster care with some history of delinquent behavior were six times more likely to be delinquent and three times more likely to be violent. Children with several moves also had higher rates of contact with law enforcement. While the author used a multivariate analysis to predict time in a placement, no multivariate analyses were conducted for delinquent or criminal outcomes.

The application of the results of these studies to present day circumstances requires great care. For example, the temporal setting of the Widom (1991) study--her sample came to the attention of the juvenile court prior to 1971--suggests that these cases may have been more severe than those of Runyan & Gould (1985)--whose sample came to the attention of the court as mandatory child abuse reporting was being implemented. Further, the Widom sample was drawn from groups which experienced reporting of the abuse or neglect and foster placement prior to the advent of mandatory child abuse reporting and permanency planning regulations. Runyan and Gould's (1985) restriction of being in foster placement at least three years at the time of the study also places into question whether or not these regulations were in place at the time of sampling and were certainly not in place throughout most of the sampled children's lifetimes. Neither study included community information and, given changes in policy and communities during the last 16 years, it is not known whether these two study samples are comparable to today's abused and neglected children.

In addition to temporal concerns, the inclusion of other risk factors were considered in the analyses of placement rather than prediction of delinquency. In other words, the mother's education level might be assessed relevant to placement rather than assessing possible direct

linkages to delinquency. The use of correlations and proportion comparisons also limit the interpretation of the delinquency findings to associations.

Levels of services within the child welfare system are difficult to compare between the two studies. The Runyan and Gould (1985) study compared in-home services to foster placement, but the overwhelming proportion of children were placed in foster care in the Widom (1991) study. Neither study had a reported sample which lacked official service, nor were there the variety of service choices available at the time the studies' children were reported.

Pathway summary

An ecological review of the development of serious and violent delinquency among maltreated children produces a complex array of potential risk and possible mitigating factors with largely unknown relationships and magnitude of influence. Those studies which have focused on the outcomes of maltreatment have virtually ignored the impact of services while the two studies considering child welfare services have virtually ignored the potential singular or cumulative impact of other risk factors such as child characteristics, or community and family structure. Further, despite multi-disciplinary trends in research both avenues of research mentioned have largely ignored the demographics, policy and research stemming from criminal justice domains.

Theoretical Organization of Risk and Protective Factors

Although the contents of the present study's administrative data makes testing of theories of behavior nearly impossible, the present study is theory-based (Weiss, 1995) in so much as it examines two potential theoretical pathways to explain the relationships found between child and family characteristics, exposure to violence, the potential mitigating effects of child welfare

services, and the influence of community relative to individual effects. These paths are a social learning approach organized by ecological sphere of influence, and a social control/ social disorganization perspective.

The social learning perspective. The notion of a “violence begets violence” perspective has developed from the theoretical stream of social learning. In other words, if (as Bandura (1973) and others have hypothesized) aggression and violence are learned behaviors, then childhood exposure to violence in the home, community and even the television are potential sources of such learning. Social learning theory as proposed by Bandura, postulates that violence (referred to as aggression in his work) is a behavior learned through modeling and imitation (Bandura, 1973). Unlike Skinner’s concept of learning, Bandura stated that such imitation does not require specific reinforcement, but adheres to four principles: (1) the observer must pay attention to events; (2) the observed behavior must then be remembered; (3) the remembered behavior must then be translated into a similar action; and (4) there must be sufficient incentive to perform that action (Grusec, 1992). The actual usage of the observed aggressive behavior is a function of the individual’s self-efficacy regarding the use of aggression versus alternative behaviors to achieve a desired result (Okey, 1992; Murray, 1997).

In the present study social learning theory is revisited by examining effects of abuse versus neglect as primary maltreatment types as well as the presence of significant criminal violence in the neighborhood. (Given that over 97 percent of households in the United States have at least one television, access to media violence is virtually a baseline for all subjects.) While not able to rule out alternative explanations, if social learning theory is highly influential then abuse should be more predictive of violent delinquency than neglect. Children exposed to

both abusive home environments and violence in the community should face a higher risk than those experiencing only one form or another.

Social Control/ Social Disorganization Theory

Social control theory as presented by Hirschi in 1969 and augmented by Gottfredson and Hirschi in 1990, suggests that delinquent behavior is the result of weakened or non-existent informal controls between children and adults or peers with socially acceptable norms and behaviors. When such bonds are absent at a young age, children do not develop the inhibitions and self-control to prevent delinquent behavior (Gottfredson & Hirschi, 1990). Thus, youth commit violent acts as a result of non-existent or insufficient bonds to positive adult and peer models. From this perspective it is possible to conceptualize child welfare intervention as a form of “artificial” social control seeking to mitigate deficits in the traditional socialization and protection role of the family. Also inherent in this theory is the concept that deviance is normative in the sense that everyone has a propensity to commit crime, but is prevented from doing so by the bonds to prosocial individuals and institutions which produce self-control.

Social disorganization Some researchers propose that characteristics inherent in impoverished communities (either due to personal or structural conditions) lead to a lack of social institutions and networks which are key to positive functioning (or effectiveness) of micro level socializing agents like the family. For example, some ethnographic researchers speculate that high crime (among other issues such as economics and racism) lead to the actual physical isolation of communities in which such “underclass” activities are concentrated (Anderson, 1990; Davis, 1990). Thus, a child in a ghetto is exposed to consistent violence in the neighborhood and isolated from other more positive experiences and models. This social disorganization

perspective, sometimes called the macro complement of social control theories (Messner & Rosenfeld, 1997), proposes that community violence, poverty and social isolation prevent or complicate positive social development.

Certain sociological as well as feminist and radical (or critical) criminological schools claim society structures alienation from appropriate means of both personal and economic status, which creates a lack of appropriate relationship to certain people and leaves violence as a normative alternative to gain power and position (Elrod & Kelley, 1995). This point of view can be illustrated by Ogbu's status mobility system (1983, 1988). (Although specifically focused on ethnic minority youth, this perspective is extended here to include youth from a lower socioeconomic class.) The status mobility system is the way that youth develop pathways to social and economic resources. Success in developing a societally acceptable path is shaped by structural inequities in access to educational and job resources; job ceilings which limit occupational choice; the way in which parents teach their children to navigate the system; and the extent to which children without access develop oppositional social identities (Ogbu, 1983, 1988; Fordham & Ogbu, 1986).

A social control/ social disorganization perspective on the development of serious and violent delinquency among maltreated children provides a comparison to social learning theory in the present study based upon the available factors. The perspectives are combined in this study to complement the ecological perspective which suggests that micro level effects do not occur in isolation from meso and macro conditions. If the social control/ social disorganization perspective seems to provide a better description of violent delinquency, than the effect of neglect, poverty, family structure and community risk factors such as high mobility and

population density on violent delinquency will be stronger than exposure to violent events.

Critiques of Social Learning and Social Control/ Social Disorganization Theories

It should be noted that both theoretical veins explored in this study have undergone significant criticisms of their ability to explain delinquent behavior. For example, in A General Theory of Crime, Gottfredson & Hirschi (1990) amend their original conception of social control to emphasize a self-control variable instilled through bonding and training. Despite this augmentation, researchers continue to point out deficits related to a lack of concentration on differential motivation to offend (Agnew, 1993; Grasmick, Tittle, Bursik & Arneklev, 1993). Other critics state that delinquency can occur despite strong prosocial attachments to a parent, if the environment is conducive to delinquent definitions (Matsueda & Heimer, 1987) or if the values espoused by the agents of social control do not yield successful results (Veneziano & Veneziano, 1992). Some of this latter criticism is mitigated in the present study by incorporating social disorganization with social control theory.

Perhaps the most common criticism of social inequity and structural deficits as a cause of violent behavior is the lack of uniformity of behavior among oppressed groups (Gottfredson & Hirschi, 1990) and the assertion that anti-poverty efforts actually increase crime (Currie, 1985). Thus, if poverty is really a causal factor in youth violence than all impoverished youth should become violent. Arguably the ability to survive a difficult context is not sufficient to discount the importance of that factor as a risk for children or youth. For example, we continue to value child abuse prevention and intervention despite the fact that left unattended there is no reason to expect that all maltreated children would die or develop antisocial behaviors.

These theoretical veins also face criticism from bio-genetic, cognitive, and moral

development orientations. These perspectives suggest a much more internalized process in the development of serious delinquency. Therapists might propose that such violent behavior is the result of inner trauma or Post-Traumatic Stress Disorder (Richters & Martinez, 1993). Other researchers propose that children may process information in different ways depending upon various individual and environmental factors, which in turn leads to changes in moral or cognitive inhibitions against violence (Astor, 1994; Rutter & Rutter, 1993). Unfortunately, measures of cognitive and emotional processes are not available in the present study. It remains possible that such mechanisms are alternative explanations for the impact of the variables analyzed.

While the present study has no measures of potential biological or biochemical differences among the children studied, the theory of biogenetic differences which may predispose certain individuals to violence also deserves mention as a potential alternative to the two pathways presented in detail above. Researchers point out that while there are undoubtedly certain biological and genetic factors which affect certain individuals' chances of developing violent behavior, the placement of these factors in the causal chain is uncertain (Lewis, 1992; Johnson, 1996; Knoblich & King, 1992). For instance, it is known that certain environmental factors and injuries can alter hormonal and neurochemical levels which in turn can alter brain function (Lewis, 1992; Perry, 1997). Therefore it is difficult to judge whether a risk factor such as maltreatment may cause a biochemical alteration or whether the prior presence of such an alteration interacts with social problems to contribute to behavior (Johnson, 1996). Additionally, it is uncertain how these variables may change according to intervention at certain developmental stages (Perry, 1997). For example, in one experimental study of poor infant and toddlers'

cognitive and behavioral development, early intervention had a positive effect on IQ scores regardless of the number of biological and social risks (Liaw & Brooks-Gunn, 1994). Even biological deficits appear malleable to change at certain stages.

Aims of the Present Study

Despite years of research, significant gaps in our understanding of the pathway of maltreated children into delinquent behavior remain. While numerous studies have linked maltreatment and delinquency it remains unclear as to how that relationship functions. There are indications in past research that effects may be both direct and indirect and vary according to the type of abuse, the timing of the incident, and the ethnicity and gender of the child. Community variables may also play a large role in the development of serious and violent youth behavior, but again it is unclear how this factor impacts such an outcome. For example, some researchers posit a direct or cumulative impact of violence on adolescent behavior, while other studies indicate that crime may merely be another variable within a larger construct of neighborhood decay. Neighborhood decay may decrease the availability of positive social controls and/ or lead to blocked opportunities which, in turn, feeds frustration and violence or promotes violent and criminal behavior as a means of obtaining status. Finally, there is a great void in the literature regarding the impact of child welfare services. No prior study of incarceration following child welfare service exists in which mandatory child abuse reporting and permanency planning laws were well-established prior to intervention. Additionally, no information is available that separates levels of service within the child welfare system between investigated, served but not placed, and out-of-home care populations.

The present study attempted to fill some of these knowledge gaps in three fundamental

ways. *First*, due to the availability of a recent sample, this study was able to examine potential differences in the impact of child welfare service following the major legislative mandates mentioned above. *Second*, the use of administrative data provided a means to more accurately assess the actual rates of transfer between systems as well as measure the relative impact of potential risk factors. Both the currency of the sample, and the study's ecological framework permitted further investigation of the impact of community on children entering the child welfare system. *Finally*, though the present study does not pretend to engage in theory testing, the outline of findings within the aforementioned theoretical paths helped to guide inquiry into a social problem of complex origin and ultimately has the advantage of generating theory-based hypotheses for future research.



Chapter 3: Methods

This study is a prospective analysis of the risk of incarceration and the odds of incarceration for a violent offense during adolescence among school-age children who were reported for child abuse or neglect, including those eventually placed into foster or group care. The design resembles a longitudinal panel survey in that the same children are studied over time and at specific points, but data are obtained from agency administrative data systems rather than repeated surveys. In addition, although the data are matched retrospectively (e.g. incarceration in the California Youth Authority has already occurred), the presence of administrative data at birth and careful application of statistical techniques allow the study of events in a prospective manner.

The study has four primary objectives. First, one of the products of the study is the construction of a longitudinal database linking several administrative databases that will serve as an ongoing tool for researchers and policymakers. In order to more closely examine children not placed into foster care, a 10 county analysis of youth who enter the California Youth Authority (CYA) following an investigated report of child abuse or neglect was performed examining the risk of entry to CYA. The likelihood of incarceration for violent versus non-violent offenses among youth with prior maltreatment histories was examined in 11 urban areas. The latter analysis includes community level information taken from the U.S. Census and local police departments. Finally, a statewide analyses of youth who enter the California Youth Authority following placement in foster or group care was performed examining risk of entry and the likelihood of incarceration for a violent versus a non-violent offense.

Data Collection and Preparation

Data used in the present study were collected from various state and local agencies under the umbrella of data sharing agreements between the University of California at Berkeley Child Welfare Research Center and the respective agencies. All data are administrative, meaning information on the children and youth in this study are recorded as a part of the normal agency management information system.

Administrative data. To mitigate concerns regarding the recording of variables, researchers using administrative data recommend the extensive study of recording practices (Goerge, 1995). Interviews with county and state data personnel, review of preliminary data with agency representatives and comparisons with other research studies, enabled the development of appropriate coding schemes and clearly identified limitations which could not be overcome. Of course, a continuing limitation is the inability to assess how a particular child or youth may experience certain aspects of community or family structure, potential social networks, personality or biological traits.

There are five administrative data bases included in the present study augmented by census and community crime data. These administrative data are extracted from the California Children's Services Archive and originate from the California Department of Education (SED services only), California Youth Authority (CYA), Foster Care Data (FC), Social Service Reporting System (SSRS) and the Vital Statistics (birth records) records (see Figure 3.1 below). The birth records, participation in educational program for the severely emotionally disturbed (SED), foster and group care information (FC) and the incarcerated youth (CYA) data are statewide. Because California has not yet implemented a statewide system for the collection of

child maltreatment report information, the child maltreatment report data (SSRS) are restricted to ten counties whose systems were computerized and compatible.

Because the data used in the present study are administrative and no identifying information remains attached to the final data used for analyses, human subjects concerns are greatly reduced. Great care was taken during the data acquisition and preparation process to insure continued confidentiality of the identities of children and families involved in this study. Consent for the use of information from the foster care, CYA, child abuse reports, and birth records was previously obtained by the University of California at Berkeley Child Welfare Research Center. An extension of this approval was granted by the University Committee for the Protection of Human Subjects in order to conduct the present study.

County description. The extant data include CYA, SSRS, FC, birth records, and census data from Alameda, Contra Costa, Fresno, Orange, San Diego, San Mateo, Santa Clara, Santa Cruz, Sonoma, and Tulare counties. These counties include urban, suburban/urban, and rural areas. The total population of children aged seven through seventeen in 1994 in these counties was 1,658,259. Fresno county has the largest percentage of AFDC recipients at 16.4 percent followed closely by Tulare County at 15.1 percent (Hall & Richards, 1994). These two counties rank among the lowest across indicators of children and youth at risk including high school drop out, median family income and teen births (Children Now, 1996). Six out of the ten counties reported a juvenile violent crime rate of over 500 per 100,000 juveniles; the remaining counties: Orange, Santa Cruz, Sonoma and Tulare had rates between 300 and 500 per 100,000 juveniles (Snyder & Sickmund, 1995). Tulare and Santa Cruz counties reported the highest active juvenile probation caseloads as of December 1996 at over 50 per 1,000 youth aged 10 to 17 years (State

of California Department of Justice, 1997). See Appendix A for a complete 10 county comparison.

Data preparation. The administrative data systems housed within the California Children's Services Archive have different construction and cleaning requirements. A significant amount of programming was accomplished to format, adjust for data entry practices which differ between agencies, and apply specialized probabilistic matching software (AUTOMATCH) to create linkages between data sets. The matching process requires several passes through the data, adjusting match weights to capture corresponding cases in different systems. Final processing of cases unmatched after several passes are then screened manually for data entry errors (e.g. misspellings).

While a measure of the accuracy of data matching can be obtained when the actual overlap is known--as in the case of child abuse reports and foster placement--such a rate cannot be known for transitions to the California Youth Authority (CYA). In this case a false positive would be a youth who was matched incorrectly with a child maltreatment report history. Given the number of indicators used in the matching process it is likely that this error rate is low. False negatives or youth who actually were reported for child maltreatment but whose CYA records could not be matched to SSRS records is a more likely occurrence. Such a failed match could be attributed to a change in name or a youth may have previously resided in a county not included in the SSRS database. Analyses of the incarcerated youth from these 10 counties, however, indicated that the CYA youth with child welfare histories were distinct from those without child welfare histories, indicating that false positive and negative matches were not sufficient to obscure all differences (see Table 3.1). Those youth with child welfare histories differed from

those without child welfare histories; incarcerated youth with child welfare histories were more likely to be female, were less likely to commit a violent offense and use weapons, and were younger at the age of admission to CYA.

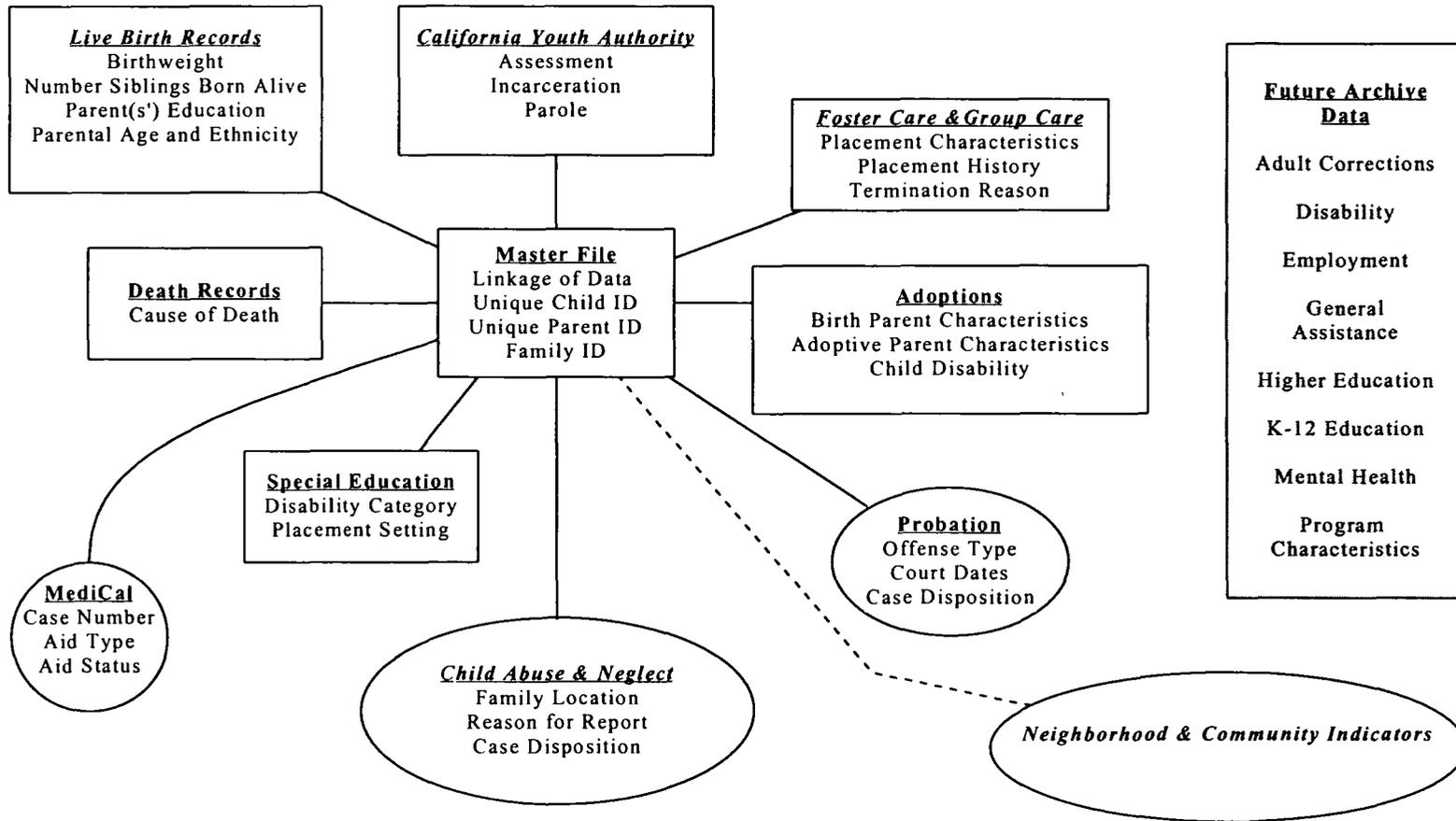
Missing data. Because birthdates were utilized to select the sample, children investigated for maltreatment without recorded birthdates were eliminated. These cases tend to be predominantly among those who receive a child abuse or neglect report but no further investigation. Because cases which are investigated are much more likely to have a birth date recorded, eliminating missing cases reduced the overall sample by less than .3 percent. Cases with missing ethnicity data were also eliminated from the final analyses after bivariate descriptive analyses indicated no pattern to the missing information. The deletion of cases with missing ethnicity resulted in the loss of an additional 1 percent of the data.

CYA data not used for tracking inmates contained information of substantive interest for understanding violent offenders but had a higher proportion of missing data. Items (i.e. prior sustained petitions or incarceration) missing due to data entry error (missing could = "0") or delays in receipt of past juvenile court records were coded as "indicated (1)" or "not (0)". Data replacement techniques were considered for three items: age at first sustained petition (which should equal the incarceration offense age if there are no prior sustained actions), substance abuse, and reading scores (tests given to all entries).

Discussions with information processing personnel at CYA revealed that missing substance abuse (17%) and reading scores (45%) relate to variability in the receipt of records from assessment departments. All youths entering CYA receive these tests. The substance abuse problem scale (see Appendix B) must be forwarded to data processing from the assessment clinic,

Figure 3.1

CALIFORNIA CHILDREN'S SERVICES ARCHIVE
 Archive Architecture and Selected Data Elements



Data sets in unshaded rectangles are statewide and currently housed in the archive. Data in ellipses are not yet statewide. Not all archive data have address information which link to neighborhood level data. Sources in bold italics were used in the present study.

Table 3.1 First Admissions into CYA: Differences by Child Welfare History (N=6,334)

	% CWS History	% No CWS History	Level of Significance
Age at Entry < 13 yrs	2	0	
13-16 yrs	28.7	18.9	
16 +	71	81.1	.001
Age First Pet < 13 yrs	21	11	.01
3+ Sustained Pet	49	11	.001
African American	28	24	.004
Caucasian	20	12	.001
Hispanic	45	49	.009
Other	11	15	.001
Female	9.1	3.1	.001
Single Parent Home	30	22	.001
Dead/Divorced/Separated Parents	52	49	n.s.
Less than 9th Grade Reading Level*	61	60	n.s.
Use of Weapon	37.8	48.9	.001
Violent Offense	50	60	.001
Percent of Total Entries	19.4	80.6	

* Over 45 percent of the data were missing for this variable

while the reading level scores must be forwarded by the education department. In other words, all youth received these tests, but some staff are more diligent than others in transferring that information to the data entry department.

There are various means of addressing missing data other than deleting those cases depending upon the amount of missing information as well as whether or not the data is

randomly missing (Chen, Staudt & Chang, 1997). Preliminary investigation of the reading level scores indicated a high level of missing information and no significant differences among child welfare and non child welfare incarcerated youth. Such a finding is not surprising given the reportedly low educational attainment of incarcerated youth (Gerstein & Briggs, 1993). Thus, instead of replacing these data, this variable was dropped from multivariate analysis. However, the recording of the substance abuse assessment was more consistent and a variable of conceptual interest in the present study. While this variable was not randomly missing in terms of time period (1993 had more missing information than other years), there was no reason to suspect that the data might be missing due to subject or offense characteristics. Missing data for the substance abuse scale was handled by regressing non-missing characteristics and then replacing missing values according to the regression equation (Chen, Staudt & Chang, 1997). To check this method the logistic regression model was also conducted utilizing a dummy variable for missing data and no significant difference was found in the model specification. The same process was unsuccessful for age at first sustained petition (missing in less than 1% of cases with prior foster care histories.) In the 10 county models of violent offending the dummy variable for this missing data item was retained in the analyses.

Geocoding. Addresses were available from the child maltreatment data and provide some approximation of the child's community environment prior to entering the child welfare or juvenile justice systems. These data were geocoded using MAPINFO software which operates in a similar fashion to the AUTOMATCH software previously described. The program makes an automatic pass through the data matching the addresses found on the child maltreatment report information to its own street address files for that area. The SSRS addresses pertain to the

child's primary home--in other words the home of the custodial parent or guardian. The program then permits an interactive session to check unmatched cases for errors and corrections in street numbers, or other designations. Cases were unable to be geocoded for one of the following reasons: missing street address, indicator of homelessness or residence at a domestic violence shelter, reports on a child who lived out of the county or state, post office box numbers instead of street addresses, or in a few cases, streets which were not included in the MAPINFO directory. The most recent available road atlas for each area was also checked to attempt to identify non-matched street names. Ninety-three percent of the cases with child maltreatment reports and subsequent CYA incarceration entries were geocoded. The match rate for comparison cases of children with investigated maltreatment reports but no incarceration was lower (about 80 percent) due to the greater number of shelter, homeless, post office box and missing addresses.

Community indicators. The collection of community crime data by reporting district or census tract required individual contacts with all police departments in each study county. Only larger urban cities collected such data at this level, necessitating a restriction of analyses of community indicators to eleven urban areas (approximately 56% of the child welfare incarcerated sample). Police departments were asked to provide data for the year closest to 1990 (in order to correspond to the latest available census data) for which they recorded FBI index crimes at the neighborhood, beat, or census tract level. If possible, a more recent year was also requested to examine whether neighborhoods had experienced a dramatic change in crime rate between 1990 and 1995. In most cases these data were sent directly, in two instances a fee was required by the police department to extract the data, and in two instances travel was required to extract the data on site. In some cases crime data were collected according to census tracts, but

more frequently they were collected according to a police beat or reporting district. In order to convert these areas to census tracts, overlays of census tracts produced by MAPINFO were used in conjunction with maps provided by the local police departments. In the great majority of cases, the reporting districts fit within a census tract. However, in a few cases it was necessary to match areas by estimating what percentage of a census tract was covered by a particular reporting district. Descriptive analyses of those cities which provided both 1990 and recent year crime statistics revealed no substantive changes in neighborhood crime rates between 1990 and 1995. In other words, high crime areas remained high and low crime areas remained low according to median violent and property crime rates.

Census data. Census data were obtained for the census tract level by downloading the information from one of the US Census Bureau's cd-rom lookup sites on the internet ("1990 Census Lookup", <http://vensus.census.gov>). Variables selected for study include those used in previous research such as socioeconomic status, ethnic composition, age, family structure, education level and mobility (Coulton, Korbin, Su & Chow, 1995; Drake & Pandey, 1996; Sampson, 1991). In addition, information regarding immigration (less than five years in the United States), and language (speak English only, very well, or well) were downloaded to further elucidate community composition. The variables were re-coded as dummy variables based upon analyses of the median level of that variable within a given census tract. A correlation analysis was run to identify highly related community characteristics. The crime data were appended to these census files in Microsoft Excel and then exported to a SUN microsystem using an ethernet connection.

Methodological Issues Surrounding Neighborhood Indicators

In recent years, several studies have incorporated neighborhood level variables in analyses through the use of census and other local statistical source data. There are two primary issues in the use of such data to examine individual level outcomes; the first refers to whether or not these type of data provide a relevant level of information--in other words how do such analyses compare to studies which might have individual level poverty and education variables. A second issue relates to the likelihood of committing an "ecological fallacy" by using group level data to erroneously predict an individual's behavior.

To assess the relevancy of using census and neighborhood crime data to approximate measures of poverty and social disorganization, a review of studies provided interesting insights regarding the relevancy and accuracy of census information. Krieger (1992) conducted a study in a Northern California medical plan region to try and examine the use of census-based socioeconomic information to overcome the absence of individual socioeconomic measures. The author examined medical records of 14,420 African American and Caucasian individuals for which individual level socioeconomic status was recorded. These individual level records were geocoded and matched to census tract and block group level socioeconomic and educational attainment information. Krieger (1992) found little significant variance between the individual and block group measurement of poverty. In multivariate models of High Blood Pressure, height, smoking and full-term pregnancies there were only slight variations in the coefficients when individual, or block group, or census tract level socioeconomic information was used. The author suggests that census tract information slightly underestimates the impact of socioeconomic class but not at a sufficient level to warrant concern. Her finding supports the earlier work of Simcha-

Fagan and Schwartz (1986) who found a high correlation between census tract information and measures of areas from interviews with community residents.

Other researchers advise caution in the use of neighborhood or census level information because of potential self-selection (Tienda, 1991). In other words, it is difficult to ascertain whether or not contextual attributes impact individual outcomes or whether certain individuals associated with select outcomes are more likely to reside in the same neighborhood. Being careful to avoid causal conclusions, however, several studies indicate that contextual variables are associated with various indicators of child well-being (Coulton, 1994).

Another concern with using neighborhood indicators in a study of incarcerated youth arises due to the likelihood that incarcerated youth come from lower socioeconomic backgrounds which may be associated with higher potential mobility. While studies examining both poor and welfare recipient families have found that these families are more mobile than other families, the difference is slight--less than five percent (Peterson & Rom, 1990). In addition, some research on crime rates within metropolitan areas indicates that the inclusion of mobility in a regression model which already incorporates measures of poverty and educational level adds less than 10 percent to the explanation of the variance in violent crimes (Crutchfield, Geerken & Gove, 1982). To assess this concern in the current sample the median number of persons within the study counties' census tracts who resided in the same home in 1985 and 1990 according to the U.S. Census (.83) was compared to the same figure for the incarcerated urban sample (.86). The difference in the two figures was negligible indicating that within the present study persons within census tracks corresponding to the addresses of incarcerated youth appear no more likely to have moved during the study period than persons in other census tracts in these counties.

Most of the research which has examined the efficacy of group level data such as census information has done so out of concern for avoiding the “ecological fallacy.” This study avoids this drawback of group level data (such as census and crime information) in two ways. First, this study seeks to understand the relative impact of certain characteristics of children reported for maltreatment and service system information. The exploratory and descriptive nature of the study therefore does not lend itself to assessing causality--a prime concern regarding the ecological fallacy (Van Poppel, 1996). In other words, these analyses will help elucidate differences in neighborhood conditions among the study population and provide some understanding of the magnitude of the impact of neighborhood versus individual level characteristics, but the design and data type cannot be used to suggest that either individual or contextual factors cause the outcome of interest. For example, a violent offender may have resided in a community with a higher rate of single mother heads of households, but that would indicate association not causation. The mechanisms by which the two factors are associated remain unknown. Conversely, advocates of contextual analysis note that it is also possible to commit an “individual fallacy”, meaning that certain behaviors or traits may be inappropriately attributed to individual characteristics when the actual causal agent is structural in nature (Coulton et al., 1995).

Second, several researchers have noted that in studies where both individual and group level data exist, the concern regarding the ecological fallacy is greatly reduced (Krieger, 1992; Langbein & Lichtman, 1978). In a sense the neighborhood environment becomes an additional demographic characteristic of the individual just as one might control for social service agency A versus social service agency B when examining the outcome of a particular social intervention.

In this study, community level variables were added to multivariate models following the building of an adequate model based upon individual case characteristics similar to the approach used by Gottfredson, McNeil, III & Gottfredson (1991). Community characteristics were examined according to how much they added to a particular model or altered individual effect coefficients.

Operationalization of Concepts

A complete listing of variables is provided in Appendix C. The following section defines the major dependent and independent variables as operationalized in the present study.

Dependent variables. There are two levels of the dependent variable in this study: incarceration versus no incarceration and, among incarcerated youth, violent versus non-violent offending. **Incarceration** is limited to commitment to the California Youth Authority--the statewide system designed to house the most serious youthful offenders. Convicted felons sometimes enter CYA for the first time after age 18, but these comprise the minority of entries and were not included in the present study. **Incarceration** is further differentiated between *property* and *drug-related non-violent* versus *violent crimes*, such as assault, rape, and murder.

Independent variables. **Child maltreatment type** will be defined as *physical abuse* (such as hitting, burning, choking), *sexual abuse* (such as rape or molestation) or *neglect* (includes abandonment, insufficient food and shelter, and other forms of deprivation labeled neglect by the county child protective service personnel). **Non-foster care services beyond investigation** were defined as those cases remaining open for a minimum of 10 days, but not found in the foster care database. **Foster care** is defined as formal, *welfare or probation supervised* placement in a family or group home setting. **Placements** refer to the type of home and number of homes

within a given time period in foster care. **Spell** is defined as the total period from the time a child enters foster or group care until the child exits from care because of *adoption, emancipation, guardianship, incarceration, reunification, runaway or other reasons.*

Community crime is measured according to official police statistics on person versus property FBI Index crimes. Crime rates were assigned to census tracts by cross-referencing reporting districts (also called beats) with census tract maps produced by MAPINFO. Person crimes (murder, assault, rape and robbery) are classified as *violent crimes*, while property crimes (burglary, larceny and auto theft) are classified as *non-violent crimes*. **Child demographics** included *birthweight, ethnicity, gender, age at time of abuse report, age at placement and age at incarceration.* **Socioeconomic status** was examined based upon living in a census tract with a high *concentration of poverty, unemployment, median family income and child poverty* as recorded in the 1990 census. **Community indicators** also included the proportion of *single mother households, recent immigrant neighborhoods, mobility, educational status, and population density.* **Family demographics** included *mother's age at birth of child, parental marital status, and number of siblings at time of incarceration.* **Presence of serious substance abuse problems** at time of incarceration is determined by the assessment scale (see Appendix C) completed for each entering CYA youth which yields three levels of need: no/ or low use of substances, moderate involvement with drugs/ voluntary counseling provided, serious use problems/ specialized counseling required. **Severe emotional disturbance** prior to incarceration is measured by the presence or absence of a record of the receipt of services for serious emotional disturbances as defined by the California Department of Education.

10 County Sample

Cases were selected among children born between the years of 1974 and 1983 in 10 counties (Alameda, Contra Costa, Fresno, Orange, San Diego, San Mateo, Santa Clara, Santa Cruz, Sonoma, Tulare) to coincide within the typical age limits for entry into CYA (11 to 18 years) between the years of 1990 and 1996. It was also necessary to limit the age range to capture children old enough to experience community conditions. That is, although an infant or toddler may experience trauma due to maltreatment, they are less likely to be exposed to conditions outside the home environment prior to entry into school. Child maltreatment report, foster care, and CYA data were matched using all available cases. This resulted in a total sample of 1,561 youth incarcerated in CYA having a history of child maltreatment report. In one of the 10 counties, uninvestigated child abuse and neglect cases were not entered into the administrative data system after 1994. This necessitated a restriction of the study sample to those cases with at least one investigated abuse or neglect report (approximately 20 percent of cases had more than one report investigated). See Table 3.2 for a comparison of investigated abuse and neglect reports versus all cases reported by age, ethnicity, gender and report type. There were very slight differences between the proportions of report types, ethnic and gender representation between all reports and those investigated.

In addition to restricting the sample to those cases with at least one investigated maltreatment report, the sample was also restricted to include only those cases whose maltreatment report preceded the incarceration event by at least six months to ensure proper temporal order. This precaution was taken to avoid the possibility that a child abuse or neglect report was made on a youth already in CYA based upon a prior incident. Any child whose abuse

report or foster placement record indicated that the child died was also excluded from the sample (less than .3 percent). This process resulted in a final sample of 159,549 children for the 10 county analysis (see Table 3.3).

Statewide foster and group care. For the statewide analyses of children moving from foster care into CYA, cases were selected among children born between the years of 1970 and 1984 to coincide with typical age limits for entry into CYA between 1988 and 1996. Studies of adolescents exiting from care found that approximately 70 percent of adolescents who exit from care entered as adolescents and thus many of the youth moving from foster placement into CYA in these counties should be captured within this age range (Cook, McLean & Anselm, 1991; Courtney & Barth, 1996).

Foster and group care and CYA data were matched using all available cases. This resulted in a total sample of 3,944 child welfare and probation supervised cases matched between the two systems. Once adjustments were made for date of birth and missing data, the total matched sample was 3,355 cases. This sample was further subdivided according to cases entering care in 1988 through 1995 or cases who were in care as of 1988. Multivariate analyses were conducted only for the first group as the second group is severely biased toward children with longer stays in care. Finally, these groups were each further differentiated by Child Welfare only, Child Welfare and Probation placement, and Probation supervised placement only depending upon the analysis (see Table 3.4 below for sample group sizes).

Table 3.2 Sample Selection Comparison: Children with Investigated versus Non-Investigated Reports

Age in years	7		8		9		10		11		12		13		14		15		16		17		
	Rep	Inv																					
Ethn																							
AA	17	13	15	12	14	12	14	13	13	11	13	12	13	12	12	12	12	12	12	10	11	11	
Cauc	47	43	47	44	47	44	46	43	45	44	44	44	45	45	44	45	45	45	43	45	41	42	
Hisp	29	36	31	36	32	35	32	34	34	35	34	34	33	34	34	34	33	34	34	36	35	38	
Other	7	8	7	8	7	10	8	10	8	9	9	10	9	9	9	9	10	9	11	9	13	10	
Mltr																							
Ngl	39	37	37	36	35	34	34	34	33	32	30	31	29	28	29	28	30	30	31	29	32	30	
Phy ab	35	36	37	37	38	38	39	38	39	39	40	40	40	40	40	39	41	38	39	36	38	36	
Sex ab	21	22	22	22	22	22	22	23	23	24	24	25	24	25	26	28	24	28	25	30	24	30	
Other	5	5	5	5	5	6	5	6	5	5	5	5	5	5	5	5	6	4	5	5	5	4	
Gendr																							
Fem	48	47	49	48	48	50	49	49	50	50	54	52	57	57	60	60	61	60	60	60	59	60	
Male	52	53	51	52	52	50	51	51	50	50	46	48	43	43	40	40	39	40	40	40	41	40	

* Total Reports = 275,412; Total Investigations = 163,627

Table 3.3 10 County Sample Sizes by CYA Entry

	Service Level	Incarceration Status	Number	% of Total
Maltreatment Report	No Services	No CYA	121,515	76.2
Maltreatment Report	Non-foster Care Service	No CYA	27,771	17.4
Maltreatment Report	Foster Placement	No CYA	9,052	5.7
<i>Subtotal No CYA</i>			<i>158,338</i>	<i>99</i>
Maltreatment Report	No Services	CYA	989	.6
Maltreatment Report	Non-foster Care Services	CYA	241	.2
Maltreatment Report	Foster Placement	CYA	72	.05
<i>Subtotal Malt./CYA</i>			<i>1,211</i>	<i>.8</i>
Total Children			159,549	100
Comparison Group: No Maltreatment Report	No Child Welfare Services	CYA	5,123	81% of Total First Admissions to CYA in 10 counties

Table 3.4 Statewide Foster Care to CYA Sample groups

Year of Entry	Supervising Agency	Incarceration Status	Number	Percent of Total Entry Group	Rate of Entry per 1,000 by sub-group
Prior to 1988	Child Welfare Only	No CYA	19,361	94.3	
		CYA	352	1.7	18.1 per 1,000
	Child Welfare/ Prob*	No CYA	681	3.3	
		CYA	145	.7	213 per 1,000**
1988-1995	Child Welfare Only	No CYA	20,539	100	
		CYA	76,746	77.1	
	Child Welfare/ Prob	No CYA	377	.4	5 per 1,000
		CYA	1,753	1.8	
	Probation Only	No CYA	213	.2	121 per 1,000
		CYA	18,229	18.3	
Total		CYA	2,268	2.3	124 per 1,000
			99,586	100	

* **Probation placement data were not consistently recorded across counties until mid-year 1991, so this early entry child welfare/ probation cohort should be interpreted with great caution.

California Youth Authority 10 County Sample

Youth entering from the 10 study counties were identified using the city and county of residence code in the CYA data. A total of 6,334 youth were identified as living in the 10 study counties prior to entry into CYA. Nineteen percent of these entries had child welfare histories. Because there is no street address in the CYA data, the incarcerated youth without child welfare histories ($n=5,123$) could not be included in the ecological analyses. 85 (1.3%) of the incarcerated youth in these 10 counties had records of special education services for serious emotional disturbances (SED).

Child Welfare to Incarceration Ecological Sample (11 cities)

Incarceration and violent versus non-violent offending were also examined from an ecological perspective in the present study. In order to accomplish this analysis, the sample was narrowed to the 11 cities within the 10 study counties for which neighborhood level crime data broken down by violent and property crimes was available. In Alameda County crime data were available for Berkeley and Oakland. In Contra Costa County crime data were available only for Richmond. In Fresno County crime data were provided for the City of Fresno. In Orange County data were available for the City of Orange and Newport Beach. In San Diego County crime data were provided for Carlsbad, Escondido, and San Diego. In San Mateo County, only the City of San Mateo kept local crime reports. In Santa Clara County, crime data were provided for San Jose. In most cases these cities include the major urban centers within each county. No local area statistics were available in Santa Cruz, Sonoma or Tulare counties.

Reducing the number of incarcerated cases to the aforementioned 11 city areas left a sample of $n=656$ (or 54 % of the incarcerated 10 county sample). Of these youth, 592 addresses

were successfully geocoded to be used in the analysis. Over half of the offenders were incarcerated for violent crimes. The proportion of cases served according to whether or not a youth was incarcerated was relatively the same between the ten county and the 11 city samples (see Table 3.5 below).

Table 3.5 Comparison of 10 County and 11 City Samples

	Service Level	Incarceration Status	% 10 County	% 11 City
Maltreatment Report	No Services	No CYA	76.2	76.0
Maltreatment Report	Non-foster Care Service	No CYA	17.4	17.7
Maltreatment Report	Foster Placement	No CYA	5.7	6.3
<i>Subtotal No CYA</i>			<i>99.2</i>	<i>99</i>
Maltreatment Report	No Services	CYA	.6	.7
Maltreatment Report	Non-foster Care Services	CYA	.2	.2
Maltreatment Report	Foster Placement	CYA	.05	.06
<i>Subtotal CYA</i>			<i>.8</i>	<i>1</i>
Total Children			159,549	64,389
No Maltreatment Report		CYA	81	

Data Analysis

Data were analyzed using SAS versions 6.10 (on the UNIX system) and 6.11 in the Windows environment. Analyses conducted on the UNIX system was done on a SUN Microsystems housed at the Child Welfare Research Center at the University of California at Berkeley.

Demographics

Information that compares children in the statewide and 10 county sample with children throughout the state was drawn from the State Department of Finance population projections for 1994. Children with missing values for age or ethnicity were excluded from the sample. Incidence rates were computed by dividing the number of investigated/ maltreated, placed in foster car, and incarcerated youth by the number of similar (in terms of age, location and/ or ethnicity) children in the statewide and 10 county populations and multiplying this number by 1,000.

Birth Records

The match rate between SSRS and birth records was 64.6 % across age groups ($n=392,299$), however, the low rate of matching results between birth data and CYA records (49%) precluded the use of birth data in the multivariate models. The low match rate for CYA cases is likely to be largely attributed to youth who may have moved into the state after birth, as well as name changes and improperly recorded data. Nonetheless, for those youth in CYA for whom birth records were found, differences between CYA youth with and without child maltreatment reports and children reported for maltreatment who did not enter CYA were explored. Age of the mother, month prenatal care began, and average birthweight are reported for these groups.

Child Welfare Services

10 county sample. The sample of children with investigated reports was compared with all children reported within the 10 county area to help elucidate potential selection biases based upon available information (see Table 3.2 above). Children's service patterns were examined by

age and ethnicity both in a point in time fashion as well as across a three year period. Both descriptive analyses and a logit model for services were completed.

A logit model was constructed to examine the likelihood of receiving services following an investigation using a twenty percent random sample of children with investigated reports ($n=18,939$). Using the CATMOD procedure, model selection began using a fully saturated model and removing terms which did not add significantly to the model. The final model was rerun using the PROC LOGISTIC procedure which provides odds ratios and confidence intervals. A similar modeling procedure was attempted for entries into foster care, but the necessity of maintaining four-way interaction terms in order to fit the data made interpretation of the logit model very difficult. Therefore, only odds ratios for entry into foster placement are reported. While young, African American children (under 6 years), were more likely to receive services, such differences decline dramatically for children aged seven years and above. It was therefore determined that the issue of selection bias based upon age, ethnicity, gender and report reason was of less concern given the age of the youth in the sample. There may, however, continue to be undetected biases based upon socioeconomic class or other family traits.

The type and number of services given following a child maltreatment report were explored for all children selected for study in the 10 county sample ($n=159,549$). Because more than one report can be made regarding a single abuse incident (e.g. both a teacher and a neighbor might call child welfare authorities on the same day), subsequent reports are considered repeat incidents if they occur more than five days after the previous report. Although there were too few occurrences of foster placement in the 10 county sample to be explored through multivariate analyses, the number, length of placements and type of exits from care were compared between

the incarcerated and non-incarcerated groups. Bivariate analyses revealed intriguing gender differences by child welfare service level but, due to the small numbers of females who entered CYA following child welfare services, CYA entry could not be broken down by gender in the multivariate model.

Statewide foster and group care. The pathways of children in and out of child welfare placement in California have been given detailed attention elsewhere (Courtney & Barth, 1996; Needell et al, 1996). Little work, however, has been done on the movement from child welfare to probation supervised homes. Therefore children's child welfare supervised placement patterns were examined by age, ethnicity, time in care, facility type and exit reason for those children who transitioned to probation supervised care.

A Cox proportional hazards model was constructed for the risk of re-entry into foster care under the supervision of probation. To satisfy the regression assumption of independence, one child per family who was first placed in foster care after 1990 was randomly selected for analysis ($n=15,384$). Because probation data was not reliably recorded statewide prior to mid-year 1991, the restriction on time of first placement was made to reduce the likelihood of missing cases who might have entered probation care prior to that county's use of the statewide computer system. Dummy variables (0,1) were constructed for African American and Hispanic children and compared to Caucasian children as a reference group. Binary variables also included physical and sexual abuse (as compared to neglect), age at first placement, type of primary placement, number of placements, number of spells in foster care, reunification after the first spell (as compared to emancipation, guardianship, runaway or incarceration), and length of the first spell (18 months or more). Interaction terms included gender and time in first spell, age and number of

placements, reunification and time in first spell, number of placements and reunification, type of maltreatment and number of spells, and reunification and number of spells and three time-varying variables. The time-varying variables were interaction terms created between time and maltreatment and number of placement variables because the impact of these variables changed according to the time at risk. Plots of the $-\log$ (estimated survival function) against \log (failure time) were inspected for other variables and it was determined that they all reasonably satisfied the necessary assumption of proportional hazard rates over time (Allison, 1996).

Incarceration

A descriptive analysis of CYA entries was conducted examining trends by age, ethnicity, offense type and gender over the past eight years. The rate of entry per 1,000 youth by ethnicity and age is also provided. A descriptive analysis is also provided of differences among offenders with and without child welfare histories.

Maltreatment to CYA. Children reported for any other reason but physical abuse, sexual abuse or neglect were deleted from the analysis. To satisfy the regression assumption of independence, one child per family who was first reported for maltreatment after 1990 was randomly selected for analysis ($n=63,739$). Children with missing birthdates or ethnicity or children categorized as from "Other" ethnic origins were dropped from the sample. Plots of failures (incarceration events) over time for each independent variable were constructed, and estimates of first quartile, median, and third quartile durations were made.

A Cox proportional hazards model was constructed for the likelihood of incarceration. Dummy variables (0,1) were constructed for African American and Hispanic children and compared to Caucasian children as a reference group. Binary variables also included neglect (as

compared to sexual or physical abuse), age at first report, child welfare services (as compared to investigation only), gender, number of reports, and a change in the type of report over time.

Interaction terms included male and neglect, ethnicity and age, ethnicity and gender and three time-varying variables. The three time-varying variables were interaction terms created between time and age variables because the impact of age at report changed according to the time at risk.

Plots of the $-\log$ (estimated survival function) against \log (failure time) were inspected for other variables and it was determined that they all reasonably satisfied the necessary assumption of proportional hazard rates over time (Allison, 1996).

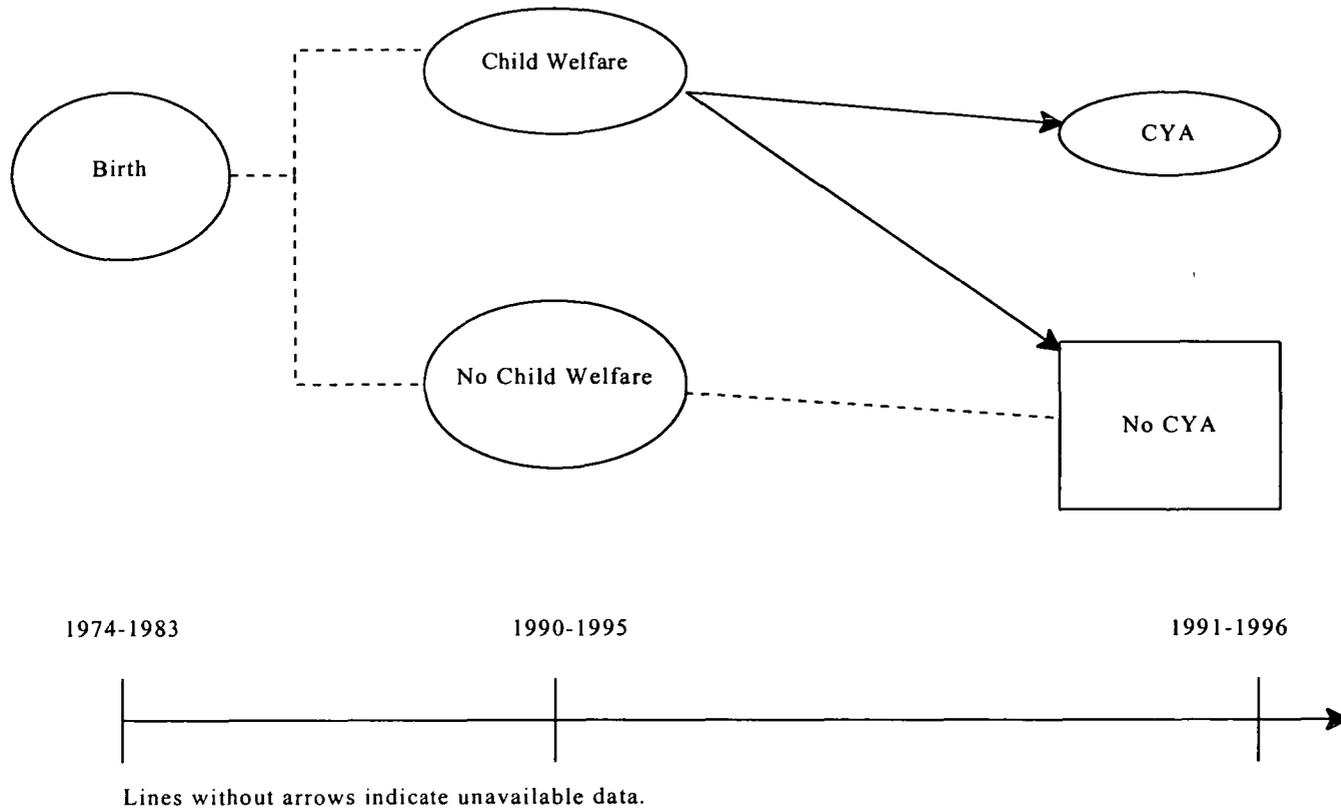
Figure 3.2

Schematic for 10 County Analyses

Question 1: How do CYA entries differ according to individual, family, child welfare and offense history?
Question 2: How will these results compare to the earlier studies given the implementation of family preservation, mandatory child abuse reporting and permanency planning regulations?

A. Descriptive Only

B. $\log h(t) = a(t) + bx + cy + dz + f \cdot g1 + h2(t)$ Risk of incarceration during time t given a maltreatment report



Foster care to CYA. Survival analysis was used to examine the relationship between independent variables and incarceration in the California Youth Authority following foster care using the SAS PROC LIFETEST procedure. Children placed for any other reason but physical abuse, sexual abuse or neglect were deleted from the analyses. Analyses were conducted according to the separate placement sample groups described earlier. To satisfy the regression assumption of independence, one child per family who entered care after 1988 was randomly selected for analyses (Child Welfare Only $n=39,641$; Child Welfare and Probation $n=40,644$). Children with missing birthdates or ethnicity or children categorized as from “Other” ethnic origins were dropped from the sample. Plots of failures (incarceration events) over time for each independent variable were constructed, and estimates of first quartile, median, and third quartile durations were made.

Two Cox proportional hazards model were constructed for the likelihood of incarceration. The first model examined the risk of entry into CYA for children with a first placement in child welfare:supervised foster care including those who later had spells in probation supervised foster care. Dummy variables (0,1) were constructed for African American and Hispanic children and compared to Caucasian children as a reference group. Binary variables also included neglect (as compared to sexual or physical abuse), age at first placement, change in supervising agency, type of primary placement, number of placements, type of exit from 1st spell (reunified as compared to all other exits or “still in care”) and length of placements.

Interaction terms included ethnicity and reunification after the first spell, ethnicity and change in supervising agency, age at first placement and time in first spell, change in agency and time in first spell, maltreatment type and number of spells, reunification and number of spells

and four time-varying variables. The time-varying variables were interaction terms created between time and Hispanic, maltreatment, age, and spell count variables because the impact of these variables changed according to the time at risk. Plots of the $-\log$ (estimated survival function) against \log (failure time) were inspected for other variables and it was determined that they all reasonably satisfied the necessary assumption of proportional hazard rates over time (Allison, 1996).

The second model examined the risk of entry into CYA for children who were only supervised by child welfare foster agencies throughout the study period. Dummy variables (0,1) were constructed for African American and Hispanic children and compared to Caucasian children as a reference group. Binary variables also included neglect (as compared to physical abuse), age at first placement, type of primary placement, reunification after 1st spell, number of spells, and length of 1st spell.

Interaction terms included ethnicity and reunification after the first spell, ethnicity and time in first spell, ethnicity and placement type, maltreatment type and number of spells, reunification and length of first spell, and four time-varying variables. The time-varying variables were interaction terms created between time and Hispanic, maltreatment, age, and spell count variables because the impact of these variables changed according to the time at risk. Plots of the $-\log$ (estimated survival function) against \log (failure time) were inspected for other variables and it was determined that they all reasonably satisfied the necessary assumption of proportional hazard rates over time (Allison 1996).

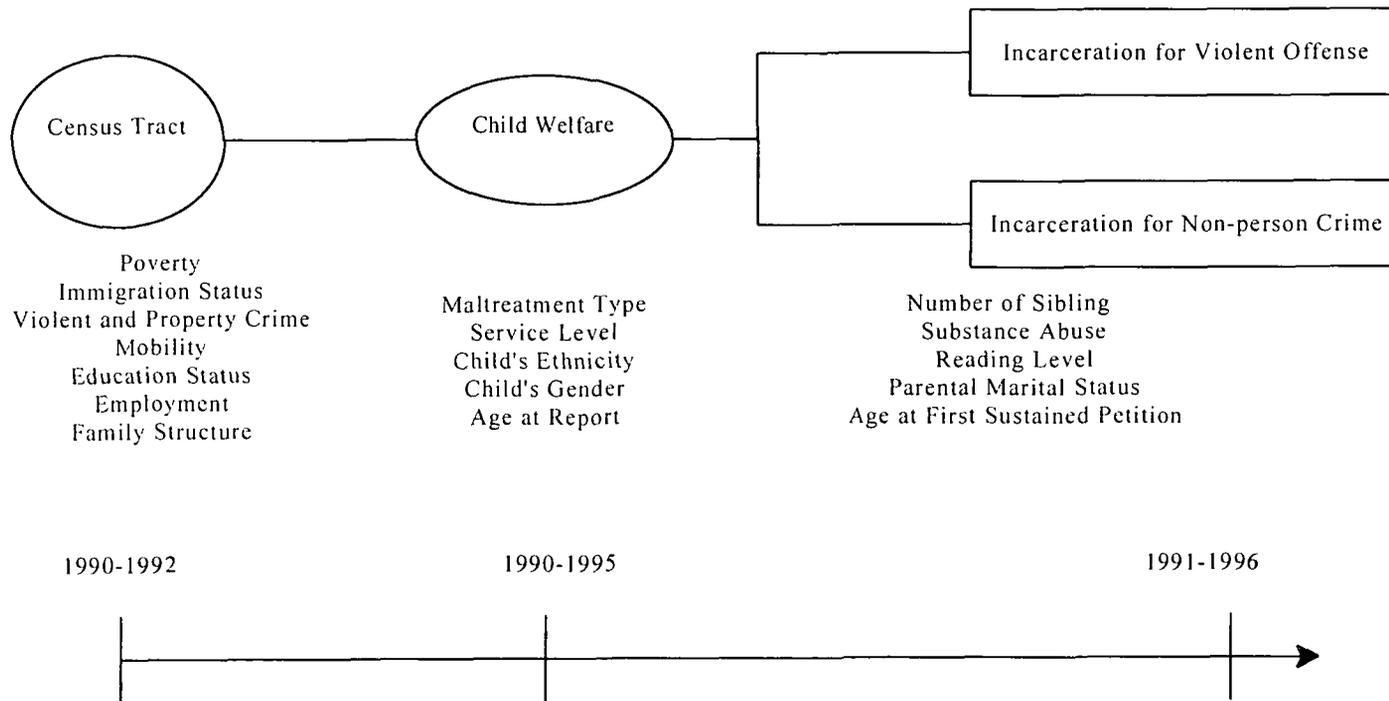
Figure 3.3

12 City Analyses

Question 1: How does child welfare service history, individual and family characteristics and community attributes impact the odds of incarceration for a violent offense?

Question 2: How will these results reflect underlying theoretical relationships according to social learning, social control and social disorganization variables?

1: $\log((p/1-p))=a+bx+cy+dz+e1+f*g2$ Odds of Incarceration for a Violent Offense



Violent Offending

A comparison of violent versus non-violent offenders incarcerated in CYA within the 10 counties was conducted by age, ethnicity, and gender. A logit model ($n = 6,334$; 3,675 violent) was constructed using the CATMOD procedure, beginning with fully saturated models which represent the data completely and gradually removing interaction terms which did not add significantly to the model. Binary variables included demographics coded as dummy variables, the presence or absence of a maltreatment report, substance abuse (high versus medium or low problem), below age 13 at time of first sustained court petition, parent's marital status, number of siblings, SED (presence or absence of special education services for serious emotional disturbance), and previous local commitment. For the purposes of this analysis only, ethnicity was collapsed into African American, Hispanic and Other versus Caucasian. (This was done because for this analysis there were sufficient youth of other ethnic backgrounds to include and these youth did not differ significantly from other youth of color.) The likelihood ratio chi-square statistic was used to determine how well the model fit the data. Final models were re-run using the PROC LOGISTIC procedure which provides odds ratios and confidence intervals. Measures of specificity and sensitivity are also reported.

Upon receipt of the Special Education data, it was discovered that we had match information only for those youth who had active SED cases as of 1996. In order to consider SED status in the model of violent offending, the sample was reduced to include only those youth age 18 years or less in 1996 to insure that we did not include youth who may have transitioned out of Special Education prior to 1996 due to age. A second logit model was constructed ($n = 3,175$; 1,789 violent) using the CATMOD procedure, beginning with fully saturated models which

represent the data completely and gradually removing interaction terms which did not add significantly to the model. The small number of SED cases combined with the small number of females made it impossible to include gender in this model. Binary variables included demographics coded as dummy variables, the presence or absence of a maltreatment report, substance abuse (high versus medium or low problem), SED status (yes or no), below age 13 at time of first sustained court petition, parent's marital status, and previous local commitment. For the purposes of this analysis only, ethnicity was collapsed into African American, Hispanic and Other versus Caucasian. (This was done because there were sufficient youth of other ethnic backgrounds to include and these youth did not differ significantly from other youth of color.) The likelihood ratio chi-square statistic was used to determine how well the model fit the data. Final models were re-run using the PROC LOGISTIC procedure which provides odds ratios and confidence intervals. Measures of specificity and sensitivity are also reported.

A similar analysis was conducted among CYA entries with foster care histories according to incarceration for a violent or non-violent primary offense. Two logit models (1) CWS & Probation Foster Care($n = 462$; 285 violent); and (2) CWS only Foster Care ($n=296$; 210 violent) were constructed using the CATMOD procedure, beginning with fully saturated models which represent the data completely and gradually removing interaction terms which did not add significantly to the model. Binary variables included demographics coded as dummy variables, maltreatment type, change in supervising agency, substance abuse (high versus low or medium problem), parental marital status, previous commitment, number of prior sustained juvenile petitions, placement moves and number of spells. For the purposes of this analysis, ethnicity was collapsed into African American, Hispanic and Other versus Caucasian. The likelihood ratio chi-

square statistic was used to determine how well the model fit the data. Final models were re-run using the PROC LOGISTIC procedure which provides odds ratios and confidence intervals.

Measures of specificity and sensitivity are also reported.

Community Variations

Differences between the study counties and other counties in the state were assessed through several sources of social indicator information in order to better understand the comparability to children statewide (U.S. Census Bureau, 1990; Children Now, 1996). Median values for key characteristics of census tracts are presented for the total 10 county area and the 11 city sample of incarcerated youth with child welfare histories. Using 1990 census information only, community characteristics of children reported for maltreatment but not incarcerated were compared to those who entered CYA.

Ecological Models

After geocoding maltreatment reports from the 11 city areas, additional proportional hazards models were run examining the risk of incarceration using individual and community variables. A Cox Proportional Hazards model was run first with individual case characteristics and then with those community variables likely to be significant according to the aforementioned comparison of median values. To satisfy the regression assumption of independence, one child per family who was first reported for maltreatment after 1990 and was born between 1974 and 1981 (to assure each case was at least 15--the peak age for entry in this sample--by the end of the risk period) was randomly selected for analysis ($n=23,605$). Children with missing birthdates or ethnicity or children categorized as from "Other" ethnic origins were dropped from the sample. Dummy variables (0,1) were constructed for African American and Hispanic children and

compared to Caucasian children as a reference group. Binary variables also included neglect (as compared to sexual or physical abuse), age at first report, child welfare services (as compared to investigation only), male, number of reports, and a change in the type of report over time.

Community variables included rate of violent crime, median family income, mobility (fewer than 80% had lived in the same house 5 years earlier), and proportion of single mother families.

Certain census variables are frequently highly correlated, creating potential difficulties in assessing the impact of individual variables due to multicollinearity. Community variables were assessed for collinearity through bivariate correlation and then by regressing each census variables used in the model against the other variables (Lewis-Beck, 1980). The regression model r-squares for the census variables in the proportional hazards model ranged from .12 to .35. These r-squares still produced tolerance levels well above the level suggested ($1 - R_{(i)}^2 = .1$) for selecting variables which contribute independent information for multivariate models (Selvin, 1995). Significant interaction terms included ethnicity and child welfare services, ethnicity and age, ethnicity and gender, single mothers and mobility, low income and mobility, more than 3 reports and mobility and age at first report and violent crime rate. There were five time-varying variables created to adjust between time and services, time and number of reports, time and mobility, time and family income and time and Hispanic children served because the impact of these variables changed according to the time at risk. Plots of the -log (estimated survival function) against log (failure time) were inspected for other variables and it was determined that they all reasonably satisfied the necessary assumption of proportional hazard rates over time (Allison, 1996).

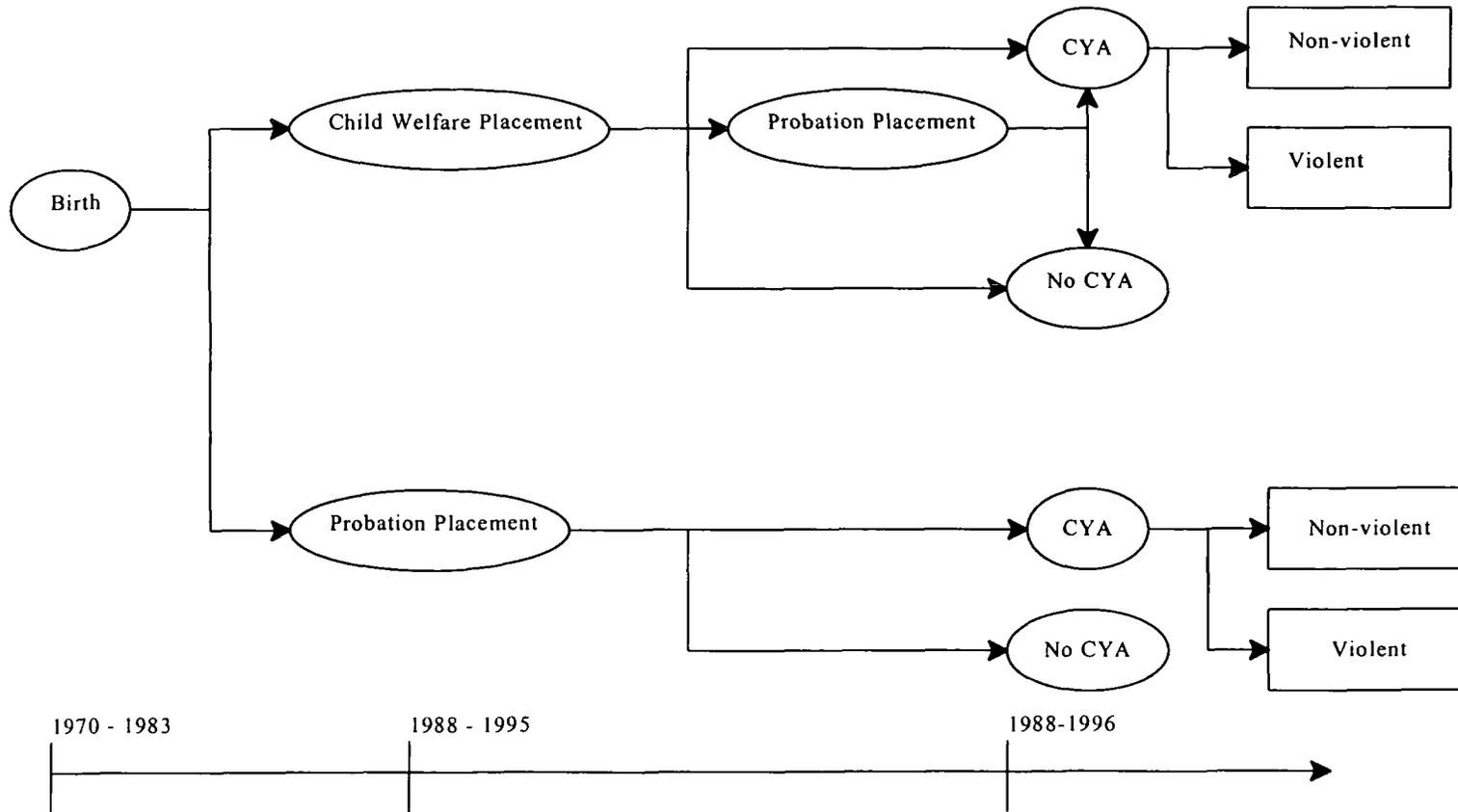
Violent offending. A logit model was constructed to examine violent versus non-violent

offending in an urban sample taken from 11 cities within the larger 10 county area. The model construction and construction of variables followed the same process described above. $\text{Log}\left(\frac{p}{1-p}\right) = a + bx + cy + dz + el + f \cdot g^2$, where x =child and family characteristics; y =maltreatment type; z =child welfare service type; l =community variables; 2 =interaction terms. (SED status could not be included due to the very small numbers of cases in this sample; $n=16$). A logit model was constructed using the CATMOD procedure, beginning with fully saturated models which represent the data completely and gradually removing interaction terms which did not add significantly to the model. Community variables were entered following the development of a model based upon individual case characteristics and the likelihood ratio chi-square statistic used to compare the relative impact of the introduction of the community variables. Census and crime data were added following the above assessment of collinearity and based upon significance in the CATMOD procedure. Binary variables were constructed based upon analyses of the median rates within each census tract-- above (1) compared to below (0). Community violent crime was entered into the model to further explore the "violence begets violence" theory which would predict that exposure to violence in the neighborhood would be associated with violent offenses. Community violent crime was transformed into a violent crime rate per 1,000 census tract residents and coded as high (1) if above the median level for census tracts in those cities. Proportion of non-citizens within a census tract was selected as a second community indicator-- below (1) compared to above (0) the median. (See Figure 3.4)

Figure 3.4 **Schematic for Statewide Analyses**

- Question 1: What are the characteristics of children who exit probation and child welfare placements to incarceration in CYA?
 Question 2: What proportion of youth entering probation supervised placement between 1992 and 1995 had previous child welfare placements?
 Question 3: How do placement experiences and case characteristics impact the risk of incarceration in CYA and the likelihood of incarceration for a violent offense?

- A. Descriptive analyses only: Children entering care prior to 1988; youth in probation foster care only.
 B. Descriptive and Multivariate analyses: Children entering foster care in 1988 through 1995





CHAPTER 4: Results

Those children who pass through the child welfare system and later enter CYA follow a complex path of varying child welfare service levels differentiated by a multitude of case characteristics. The following presentation of analyses of this pathway begins with a description of all children over seven years of age with maltreatment reports in the ten study counties and follows them through the child welfare system. This provides an examination of the decision-making process for uninvestigated as well as investigated maltreatment reports while only children with investigated maltreatment reports are followed to possible incarceration in CYA. The 10 county exploration of pathways of children with investigated maltreatment reports is arranged chronologically beginning with the first report for abuse or neglect, examining child welfare service trajectories by case characteristic, and concluding with analyses of entries into the California Youth Authority. A brief overview of the statewide CYA population is followed by an analyses of the 10 county CYA population according to the presence of a history of child welfare contact.

The study's focus then shifts to an ecological analysis of eleven urban centers within the 10 counties. Using 1990 census information and local crime data, census tract characteristics of children with investigated maltreatment reports are compared to all census tracts at the city and county levels. Risk of entry to CYA within the 11 urban areas is analyzed using both individual and community characteristics. Finally, violent and non-violent offenders with child welfare histories from the 11 urban areas are examined according to youth, family, and census tract characteristics.

The study concludes with a statewide examination of the transition from child welfare and probation foster and group care to CYA. Compared to the relative absence of research on

the child welfare system prior to foster placement, case movement within the child welfare foster care system has received substantial attention elsewhere. Therefore, the analyses begin with an examination of caseload flow from child welfare to probation supervised out-of-home care. Then entry into CYA is examined according to entry cohorts and the supervising agency. The section concludes by analyzing CYA wards with foster placement histories according to violent versus non-violent primary offenses.

All Children Reported for Abuse and Neglect: Characteristics and Case Decisions

The incidence rate of children per 1,000 reported for maltreatment was calculated for the year 1994. African American children had the highest rate of reporting for maltreatment across age groups, but experienced the most rapid drop in reporting after 15 years of age. Hispanic children have the second highest rate of reports across age groups. Hispanic children, however, are reported at only slightly higher rates above the median for each age while African American children are reported at rates almost 45 percent above the median for each age (see Figure 4.1).

Neglect (36%) and physical abuse (35.5%) cases comprise the greatest proportion of reports for seven year olds. Among older children, reporting reasons change in frequency. Physical abuse reports comprise the majority of reports for youth between the ages of twelve and seventeen (38-40%) while neglect reports decline to 29 percent of reports on older children. Sexual abuse reports increase from 21 percent of seven year olds to 30 percent of 17 year olds (see Figure 4.2).

The most dramatic change in maltreatment reports, however, occurs in the proportion of females versus males reported. While females comprise 46 percent of seven year olds reported, they comprise 60 percent of children over the age of 15 who are reported for maltreatment. This

increase in females reported parallels the increase in reports for sexual abuse (see Figure 4.3).

A graphic depiction is useful to illustrate the process cases follow over time (Figures 4.4 & 4.5). Beginning with the first recorded maltreatment report in 1992, children over the age of seven years were followed for three years. The children were collapsed into two groups: age seven through 10 years and age 11 to 14 years (youth aged 15 to 17 years were dropped to ensure all children were eligible for a second report within the three year time period). The older group was slightly less likely to experience an investigation following the first maltreatment report (65% versus 70%). Although the proportion of the total children reported who were served did not differ between groups, a slightly higher proportion of investigated reports resulted in opening the case to services among older children (20.1% versus 17.9%).

Figure 4.1 Children Reported in 1994 for Maltreatment per 1,000, Aged Seven to Seventeen

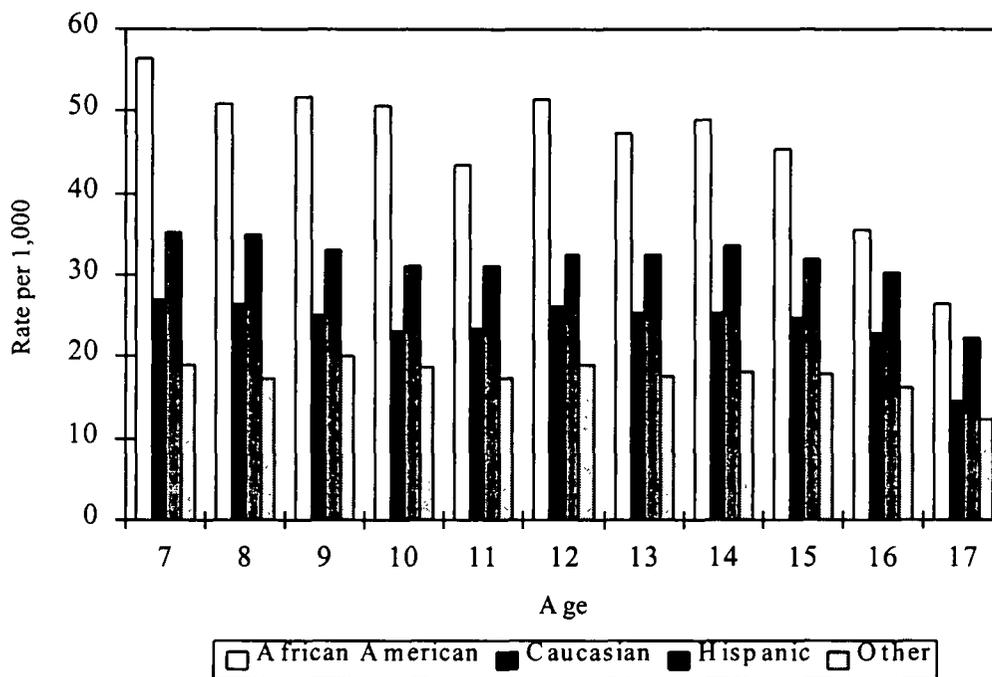


Table 4.1 Children Reported for Maltreatment: Ethnicity and Age

	7 yrs	8 yrs	9 yrs	10 yrs	11 yrs	12 yrs	13 yrs	14 yrs	15 yrs	16 yrs	17 yrs	Total
AFA	629	573	564	546	473	530	516	512	460	348	254	5,405
CAU	2,160	2,163	2,006	1,821	1,849	1,864	1,980	1,934	1,731	1,550	1,001	19,059
HISP	1,778	1,752	1,592	1,446	1,471	1,463	1,504	1,480	1,303	1,228	895	15,912
OTH	414	379	443	409	384	408	389	380	356	317	238	4,117
Total	4,981	4,867	4,605	4,222	4,177	4,265	4,389	4,306	3,850	3,443	2,388	45,493

Incidence per 1,000

	7 yrs	8 yrs	9 yrs	10 yrs	11 yrs	12 yrs	13 yrs	14 yrs	15 yrs	16 yrs	17 yrs	Total
AFAM	56.5	50.8	51.8	50.7	43.6	51.5	47.3	49.0	45.3	35.6	26.4	46.5
CAUC	27.0	26.4	25.1	23.0	23.3	26.2	25.3	25.4	24.9	22.9	14.6	22.9
HISP	35.3	34.9	32.9	31.0	31.1	32.6	32.6	33.6	31.8	30.2	22.4	31.9
OTH	19.0	17.3	20.1	18.6	17.4	19.1	17.7	18.2	17.8	16.2	12.3	19.5
Total	30.3	29.4	28.5	26.6	26.2	28.9	27.9	28.4	27.4	25.0	17.4	27.4

Figure 4.2 Percent Maltreatment Reports by Age at First Report and Report Type

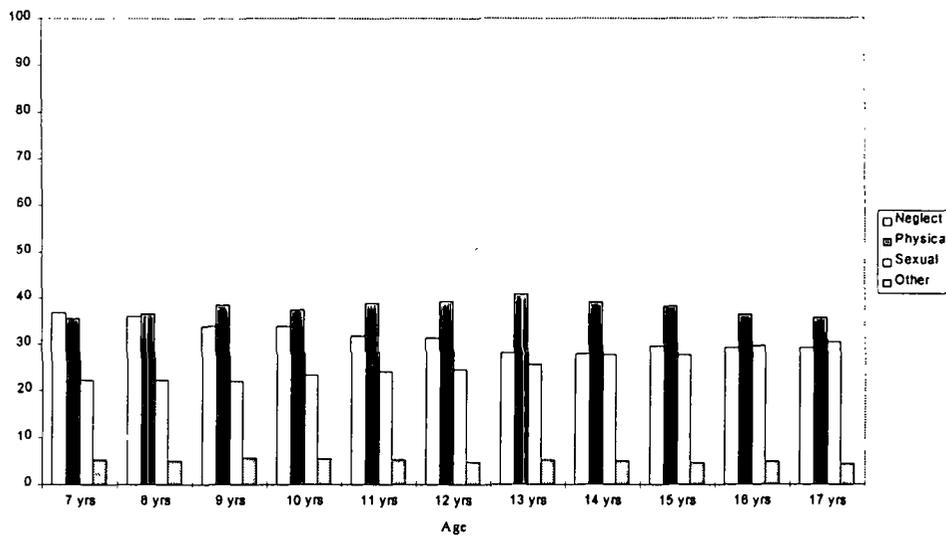


Figure 4.3 Percent Maltreatment Reports by Age at First Report and Gender

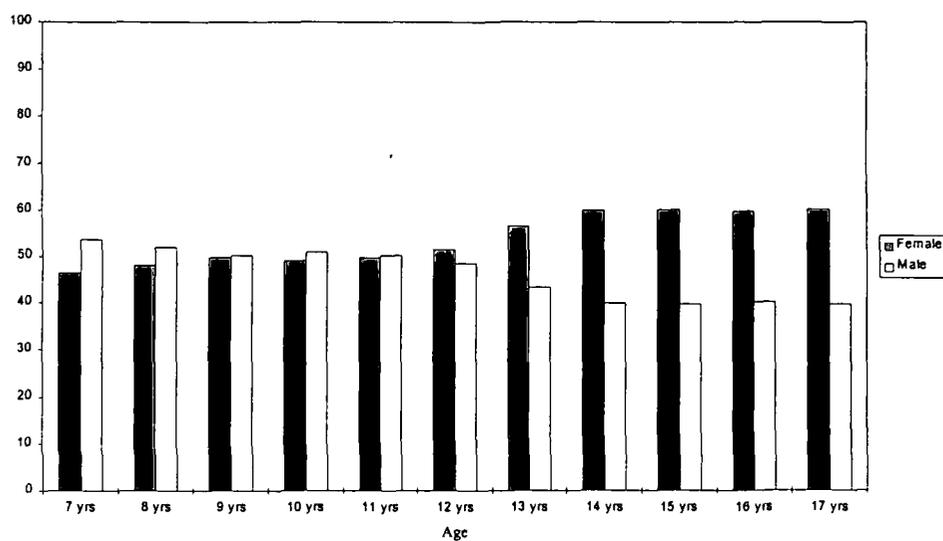
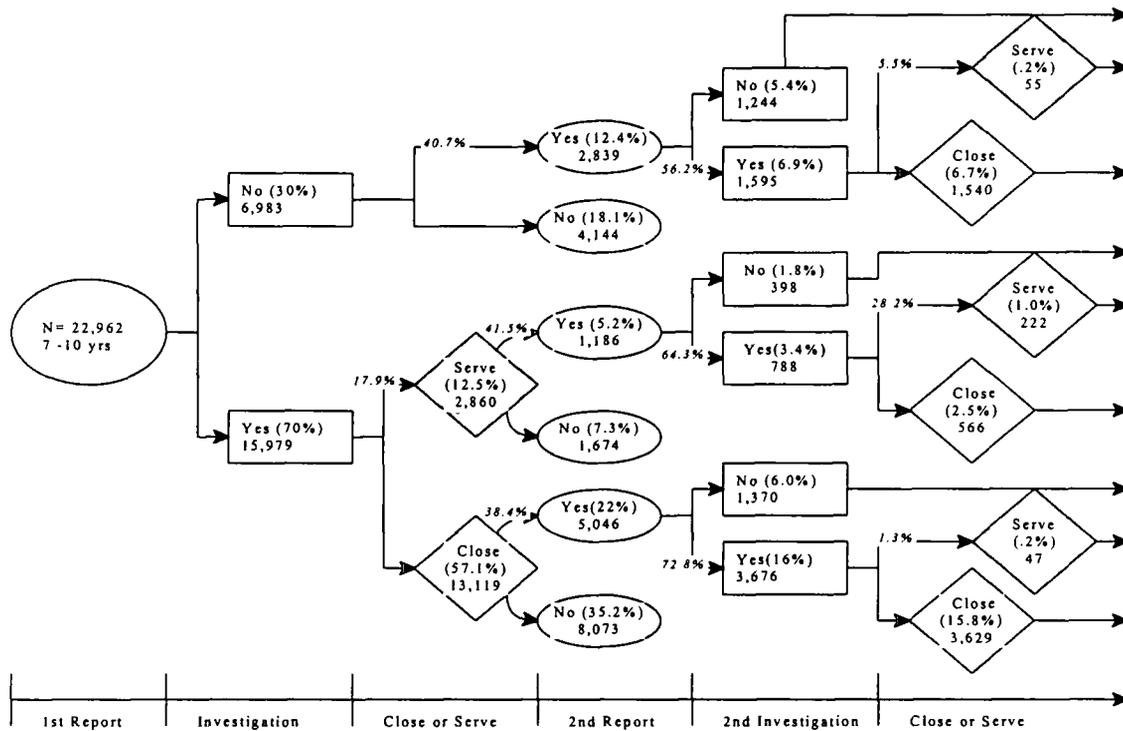
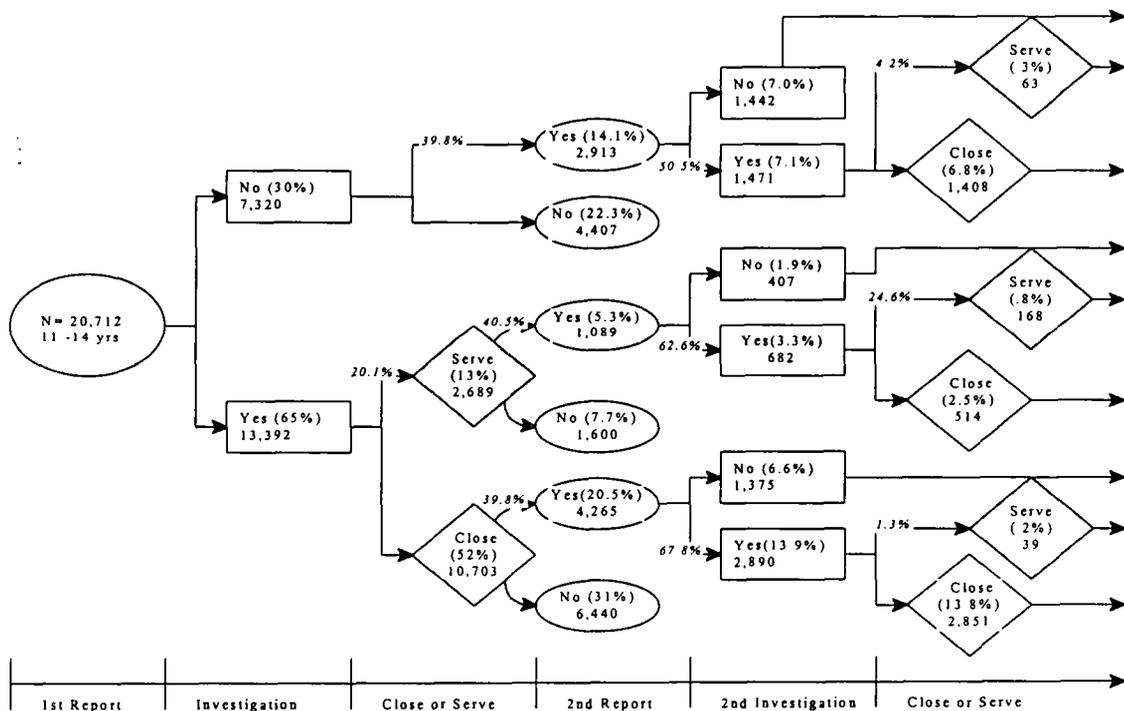


Figure 4.4 Service Pathways of Children First Reported in 1992 by Age Group



Percentages within symbols refer to the percent of the total children reported.
 Percentages in italics provide the proportion of the previous decision point (e.g. 17.9% of those investigated at first report received services.)
 All cases were followed up to 36 months from the first report.



Percentages within symbols refer to the percent of the total young children reported.
 Percentages in italics provide the proportion of the previous decision point (e.g. 20% of those investigated at first report received services.)
 All cases were followed up to 36 months from the first report.

Because the relative impact of services and foster placement is a primary focus in this study, a logit model was constructed to further explore the likelihood of a case being opened for service based upon the age at the time of report, ethnicity, gender and report reason. A twenty percent random sample of all children reported for maltreatment in 1992 included 18,939 children, 2,749 (15%) of whom received services after their first report. The final model included interactions between ethnicity and age, ethnicity and maltreatment type, and maltreatment type and age; gender was dropped from the final model resulting in an insignificant drop in the -2 Log Likelihood Chi-Square ($436.08 - 430.05 = 6$, $p = n.s.$). Odds over one indicate an increase in the likelihood of services and odds less than one suggest a lower likelihood of receiving services. The model (Likelihood Ratio Chi-Square=13.42, D.F.=12, $p = .34$) fit the data relatively well, however the numerous interaction terms substantially mediated the impact of the main effects variables (see Table 4.2).

Among children between seven and 14 years old, those with sexual and physical abuse reports were more likely to receive services than those for neglect. African American children were 2.5 times more likely to have services than Caucasian and Hispanic children, but the difference declined dramatically for Hispanic children over the age of seven. African American children were less frequently reported for sexual or physical abuse (not shown in table). Therefore the decreasing likelihood of services for older children reported for neglect mediates the increased likelihood of services for African American versus other ethnic groups. The only significant interactions with ethnicity occurred for Hispanic children, but the increase or decrease in odds for these values was quite small.

Table 4.2 Logistic Regression: Odds Ratio for Opened to Services

Variable	n	Odds Ratio
Age at First Report		
<i>1-6 years</i>	9,201	<i>1.00</i>
7-10 years	4,125	.54
11-14 years	3,660	.73
13-17 years	1,953	.53
Ethnicity		
<i>Caucasian</i>	9,475	<i>1.00</i>
African American	2,818	2.54
Hispanic	6,646	1.04 n.s.
Report Reason		
<i>Neglect</i>	7,235	<i>1.00</i>
Physical Abuse	6,980	.68
Sexual Abuse	4,724	.76
Interactions		
Sex Abuse/7-10 years	1,103	1.92 $p=.08$
Sex Abuse/11-14 years	1,071	1.52
Physical Abuse/7-10 years	1,627	1.44
Hispanic/7-10 years	1,496	1.34

$n = 18,939$

Served--2,749

Likelihood Ratio Chi-Square =13.42 12DF ($p=.34$)

All odds ratios are significant at $p \leq .05$ or higher unless noted otherwise.

Entry into foster or group care. A small proportion of those cases opened for services will enter foster placement. Using matched data for foster care and child maltreatment reports, entry into foster placement was examined. The construction of a logit model was attempted, but

the necessity of maintaining high level (4-way) interaction terms in order to fit the data reasonably well, made the multivariate model highly difficult to interpret. Therefore, for the purposes of examining the relative impact of ethnicity, age at first report and maltreatment type only simple odds ratios for ethnicity, age and report reason are discussed (see Table 4.3). The increased likelihood of entering foster placement for African American children (1.4 times higher than Caucasian and Hispanic children) declines among children over the age of 6 years (.8 or 20% less likely to enter care than Caucasian and Hispanic children) --although this decline is somewhat mediated if the report reason is neglect (African Americans reported for neglect have a two times higher likelihood of entering care). Mirroring the higher likelihood of service seen in

Table 4.3 Odds Ratios for Entries into Foster Care between 1992 and 1995: Age at First Report, Ethnicity, and Type of Report*

	< 6 yrs	6-12 yrs	13-17 yrs	Neglect	Physical Abuse	Sexual Abuse
Ethnicity						
African Am (n=4,371)	1.4 [1.3-1.5]	.8 [.74-.87]	.7 [.7-.8]	2 [1.9-2.3]	.6 [.6-.7]	.5[.4-.5]
Caucasian (n=7,605)	.89 [.84-.95]	n.s.	1.2 [1.1-1.3]	.9 [.86-.99]	n.s.	n.s.
Hispanic (n=5,207)	n.s.	1.1 [1-1.2]	.86 [.8-.9]	.75 [.7-.8]	1.2 [1.1-1.3]	1.4 [1.2-1.5]
Age						
Under 6 yrs (n=9,715)				3.1 [2.9-3.4]	.5 [.5-.6]	.2 [.2-.3]
6-12 yrs (n=4,143)				.5 [.5-.6]	1.4 [1.3-1.5]	2 [1.9-2.4]
13-17 yrs (n=3,325)				.4 [.3-.4]	1.7 [1.6-1.9]	3 [2.5-3.1]

* Numbers in brackets are 95% Confidence Intervals.

Table 4.1, older children are more likely to enter care for reasons of physical abuse (1.4 to 1.7 times than younger children reported for the same reason) and sexual abuse (2 to 3 times more likely than younger children reported for the same reason).

Gender variations (not shown in the above table) were found in reasons for removal to and eventual exits from foster care. Males and females had a relatively equal likelihood of entry into care, but the percentage of females removed due to sexual abuse (24%) was over three times higher than the percentage of males (7%). Among older children exiting from foster care, females were approximately 50 percent more likely to runaway; males were three times more likely to exit to incarceration (not shown).

Study Sample: Children with One or More Investigated Reports

As shown in Table 4.4 below, the sample of children with investigated maltreatment reports was slightly less than 50 percent female and the majority of cases (45 %) were classified as Caucasian. African American children comprised only 13 percent of the sample, but this was largely due to the composition of the study counties. In Alameda County, which has a large African American population the proportion of African American children reported and investigated was 43 percent. Hispanic children comprised the majority of investigated reports in Fresno and Tulare counties (which also have the lowest ranking in the state for youth outcomes such as school drop outs and teen pregnancies). A slightly larger proportion of the cases were investigated for allegations of physical abuse (39%) than neglect (37%).

Case characteristics of children with investigated maltreatment reports were compared to those of all children reported for abuse or neglect. As shown in the previous chapter (Table 3.2), small differences between reports and investigations by ethnicity were found within certain age

groups. Among children under age 10, African American children were slightly more likely to be among the investigated sample, while among the older youth (aged 16 and 17 years), children of Other ethnic backgrounds were more frequently investigated. These differences, however, were not substantial.

Bivariate Comparisons of Case Characteristics and Service Levels

Within the study sample, there were several differences of note by ethnicity and gender between service levels. Although African American children comprised only 13 percent of the investigated sample, they comprised 21 percent of the served and placed samples. Conversely Hispanic children showed a decline in the proportion moving to higher levels of service. Females were more likely to move to higher levels of service.

The majority of Caucasian and Hispanic children and youth with investigated reports had a first report for physical abuse (40%), while African American children were more likely to have been investigated for neglect (49%). African American children in this sample were less likely to be reported for sexual abuse. Males were equally as likely to be reported for neglect or physical abuse (40%). Females reported for physical abuse were no more or less likely to have their report investigated than males; females were, however, more likely to be investigated for sexual abuse (28.2 versus 20.6 percent).

Recurrent report patterns. Among children reported more than once, over thirty percent were reported for at least two maltreatment types. Of these thirty percent with a different report reason, those who had a first report of sexual abuse were equally likely to have a second report for physical abuse or neglect. Physical abuse cases were more likely to be re-reported for neglect (61%) and neglect cases were most frequently reported for physical abuse (63%).

Table 4.4 10 County Sample: Percent Investigated, Served, Foster Placement

	<u>Investigated</u>	<u>Served</u>	<u>Foster Placement</u>	<u>Total</u>
Age at First Report				
7-10 years	31.0	31.8	35.7	31.4
11-14 years	36.0	36.5	35.3	36.5
15-16 years	33.0	31.7	29.0	32.1
Ethnicity				
African American	10.9	21.1	20.4	13.2
Caucasian	44.1	39.1	44.2	43.2
Hispanic	35.4	30.1	28.2	34.1
Other	9.6	9.7	7.2	9.5
Gender				
Female	53.3	54.7	60.6	53.9
Male	46.7	45.3	39.4	46.1
Report Reason				
Sexual Abuse	23.1	25.7	21.6	23.7
Physical Abuse	40.2	37.5	31.6	39.3
Neglect	27.7	36.8	46.8	37.0
Total Number	122,413	28,012	9,124	159, 549

Child welfare pathways. Within the study sample, 23 percent of the children reported were given some type of service beyond investigation. The majority (84%) of children referred to services had their cases opened following their first maltreatment report (not shown). Approximately six percent of the children with investigated maltreatment reports were placed into foster care. Among those six percent placed into foster care, nearly half (43%) were placed

into care following the first maltreatment report. Thirty-six percent of those placed entered foster placement after the second or third report. Twenty-one percent of those placed had at least four maltreatment reports prior to placement (not shown).

From child welfare to CYA. A total of 1,211 children or 8 children per 1,000 children with investigated reports entered the California Youth Authority in the 10 sample counties. Twenty-eight percent of CYA entries were African American, 45 percent were Hispanic, 20 percent were Caucasian and 7.7 percent were of Other ethnic backgrounds; 9 percent were female. The proportion of various ethnic groups among CYA entries within the study sample did not differ substantially from the proportion of CYA entries statewide. Figure 4.5 illustrates the rate of 1994 CYA entries per 1,000 youth in the study sample by age and ethnicity across all child welfare service levels. African American children have the highest rate of CYA entry per investigated maltreatment report. Unlike the trend in seen in child abuse reporting rates, the rate of Caucasian children entering CYA was lower than that of Other ethnic groups

Figure 4.6 shows the rate of entry into CYA for those children with investigations but no further services. In contrast to entry rates across all service levels (compare to Figure 4.5), African American youth who entered prior to age fifteen without services had almost three times the rate of entry into CYA compared to Hispanic youth. Among those youth served but not placed in out of home care, risk of entry by ethnicity is highly dependent upon age. Among the youngest (14 and younger) and oldest (17 years) CYA admissions, African American children have the highest rate of entry. Among fifteen and sixteen year old youth with non-foster care services, Hispanic youth have the highest rate of entry. Caucasians and youth of other ethnic groups over the age of fifteen from this service level did not enter CYA (Figure 4.7). The total

Figure 4.5 Rate of CYA Entries per 1,000 Youth Across Child Welfare Service Levels:
Age by Ethnicity

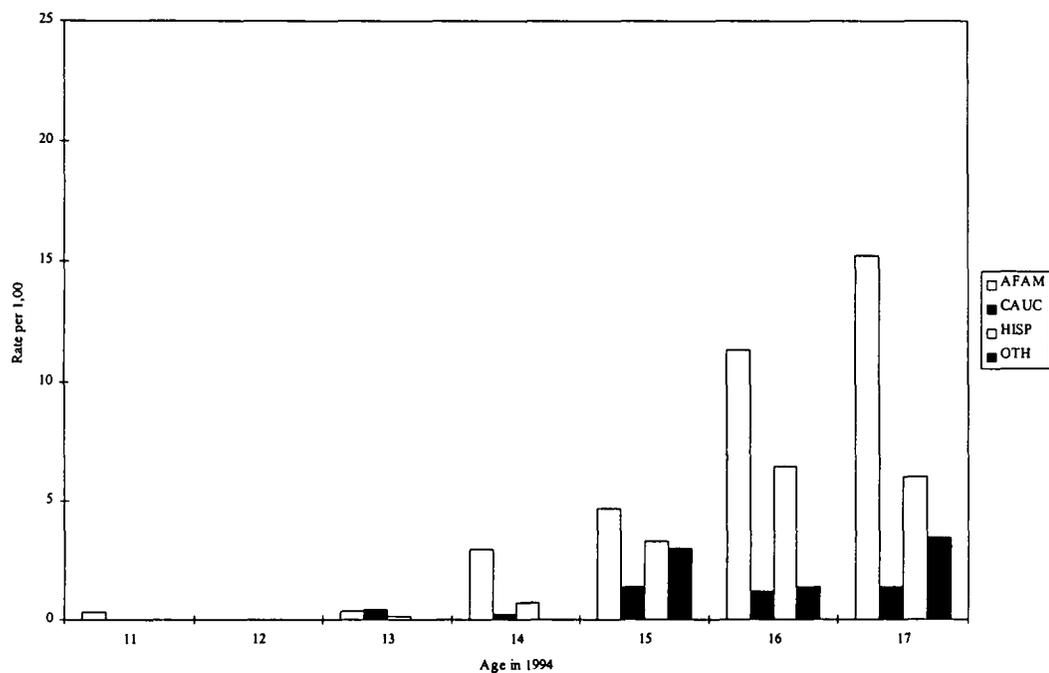


Table 4.5 1994 CYA Entries Across Service Levels by Age and Ethnicity

	11 yrs	12 yrs	13 yrs	14 yrs	15 yrs	16 yrs	17 yrs	Total
AFAM	1	0	1	8	11	23	25	69
CAUC	0	0	4	2	11	8	8	33
HISP	0	0	1	5	20	35	26	87
OTH	0	0	0	0	5	2	4	11
Total	1	0	6	15	47	65	63	197

Rates per 1,000

	11 yrs	12 yrs	13 yrs	14 yrs	15 yrs	16 yrs	17 yrs	Total
AFAM	0.4	0	0.4	3.0	4.7	11.3	15.2	4.0
CAUC	0.0	0	0.4	0.2	1.4	1.2	1.4	0.6
HISP	0.0	0	0.1	0.7	3.3	6.4	6.0	2.0
OTH	0.0	0	0.0	0.0	3.0	1.4	3.4	1.0
Total	0.1	0	0.3	0.8	2.6	4.1	5.0	2.0

Figure 4.6 Rate of CYA Entry per 1,000 Children Receiving No Services Beyond Investigation: Age by Ethnicity

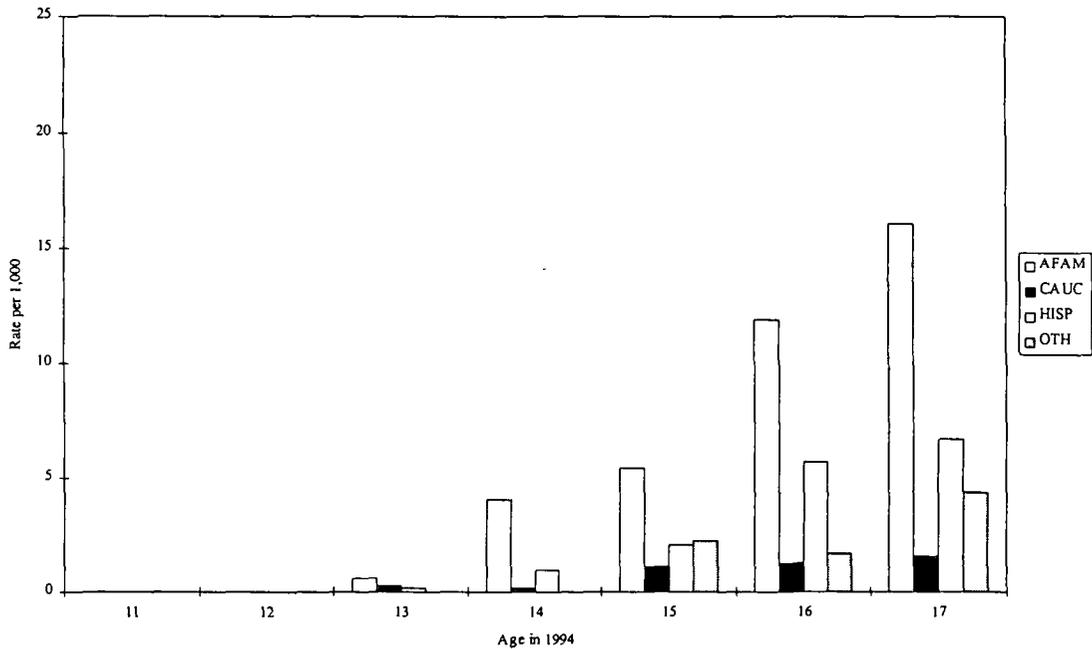


Table 4.6 1994 CYA Entries Among Investigated but Not Served Youth

	11 yrs	12 yrs	13 yrs	14 yrs	15 yrs	16 yrs	17 yrs	Total
AFAM	0	0	1	7	8	15	16	47
CAUC	0	0	2	1	7	7	7	24
HISP	0	0	1	5	10	25	23	64
OTH	0	0	0	0	3	2	4	9
Total	0	0	4	13	28	49	50	144

Rates per 1,000

	11 yrs	12 yrs	13 yrs	14 yrs	15 yrs	16 yrs	17 yrs	Total
AFAM	0	0	0.6	4.1	5.4	11.9	16.1	4.3
CAUC	0	0	0.3	0.2	1.2	1.3	1.6	0.5
HISP	0	0	0.2	1.0	2.1	5.7	6.7	2.0
OTH	0	0	0.0	0.0	2.3	1.7	4.4	1.0
Total	0	0	0.3	0.9	2.2	4.0	5.2	1.4

Figure 4.7 Rate of Entry per 1,000 Children Served but Not Placed into Foster Care: Age by Ethnicity

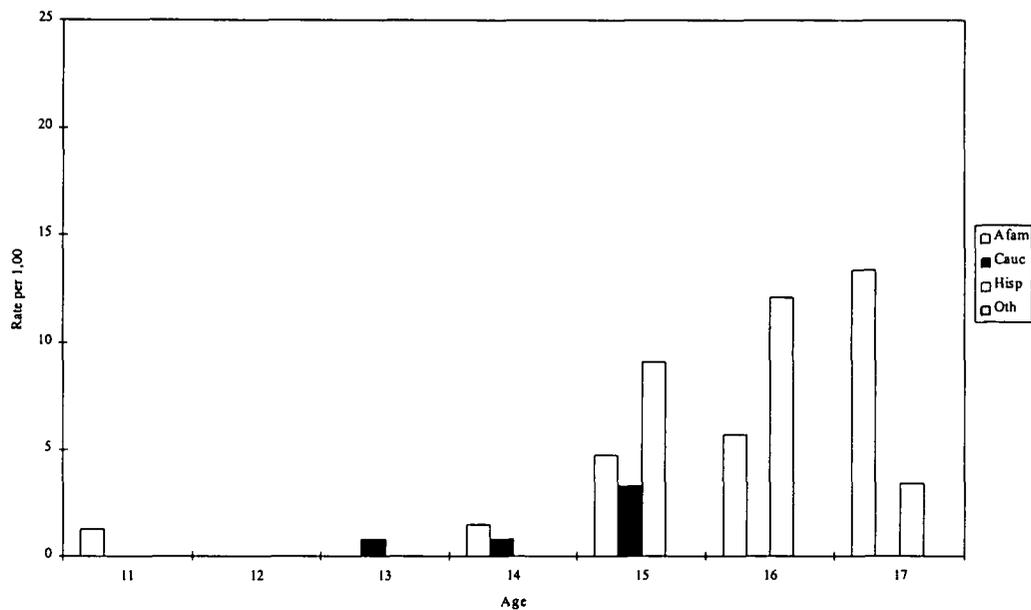
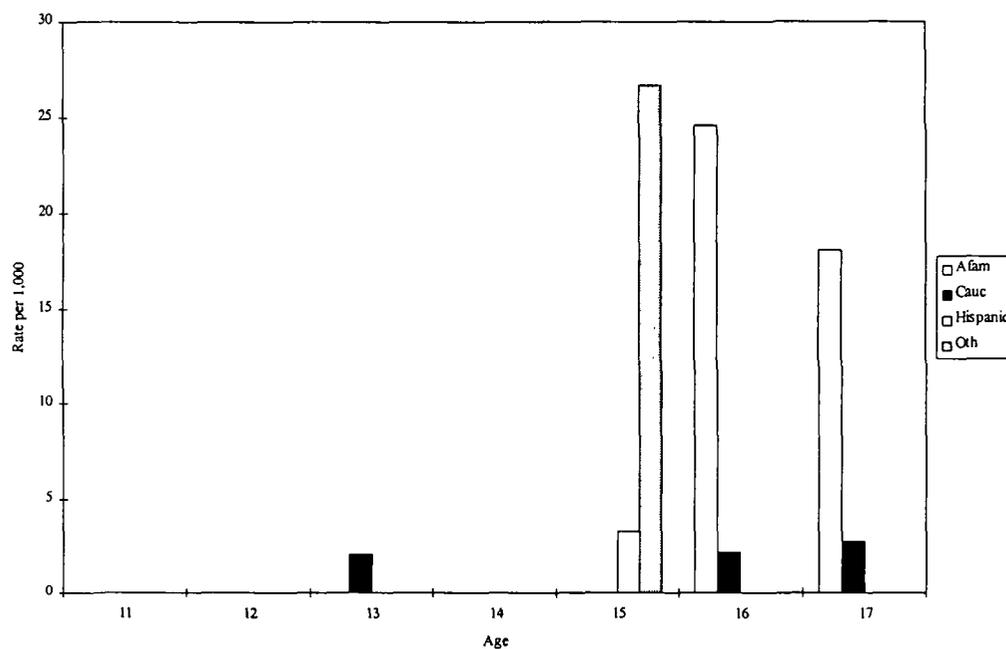


Table 4.7 1994 CYA Entries Among Youth Receiving Services After Investigation

	11 yrs	12 yrs	13 yrs	14 yrs	15 yrs	16 yrs	17 yrs	Total
AFAM	1	0	0	1	3	3	6	14
CAUC	0	0	1	1	4	0	0	6
HISP	0	0	0	0	9	10	3	22
OTH	0	0	0	0	0	0	0	0
Total	1	0	1	2	16	13	9	42

Rates per 1,000

	11 yrs	12 yrs	13 yrs	14 yrs	15 yrs	16 yrs	17 yrs	Total
AFAM	1.2	0	0.0	1.4	4.5	5.5	13.1	3.0
CAUC	0.0	0	0.7	0.7	3.2	0.0	0.0	0.1
HISP	0.0	0	0.0	0.0	9.1	12.3	4.6	3.2
OTH	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.3	0	0.3	0.6	5.0	4.7	4.1	2.0

Figure 4.8 Rate of Entry per 1,000 Children Placed into Foster Care:Age by EthnicityTable 4.8 1994 CYA Entries Following Foster Placement

	11 yrs	12 yrs	13 yrs	14 yrs	15 yrs	16 yrs	17 yrs	Total
AFAM	0	0	0	0	0	5	3	8
CAUC	0	0	1	0	0	1	1	3
HISP	0	0	0	0	1	0	0	1
OTH	0	0	0	0	2	0	0	2
Total	0	0	1	0	3	6	4	14

Rate per 1,000

	11 yrs	12 yrs	13 yrs	14 yrs	15 yrs	16 yrs	17 yrs	Total
AFAM	0	0	0.0	0	0.0	25.1	18.3	5.2
CAUC	0	0	2.1	0	0.0	2.2	2.8	1.0
HISP	0	0	0.0	0	3.3	0.0	0.0	0.5
OTH	0	0	0.0	0	26.7	0.0	0.0	3.9
Total	0	0	1.0	0	3.0	6.1	5.0	2.0

number (from 1990 through 1996) of entries to CYA with foster care histories after age seven was quite small ($n=72$), making the rate of entry for 1994 by ethnicity difficult to interpret. Among former foster youth, African American youth were more likely to enter CYA (Figure 4.8).

The proportion of females entering CYA with child welfare histories was almost three times higher than that from the general county wide population of females of that age range as compared to the proportion of males entering CYA with child welfare histories-- two times higher than that of the general male population (see Figure 4.9). The rate of entry for males with services beyond investigation declines after age 15, but the rate of entry for females increases steadily with each increase in service intensity (Figure 4.9).

Figure 4.9 Rate of Entry into CYA per 1,000 Children: Child Welfare Services by Gender

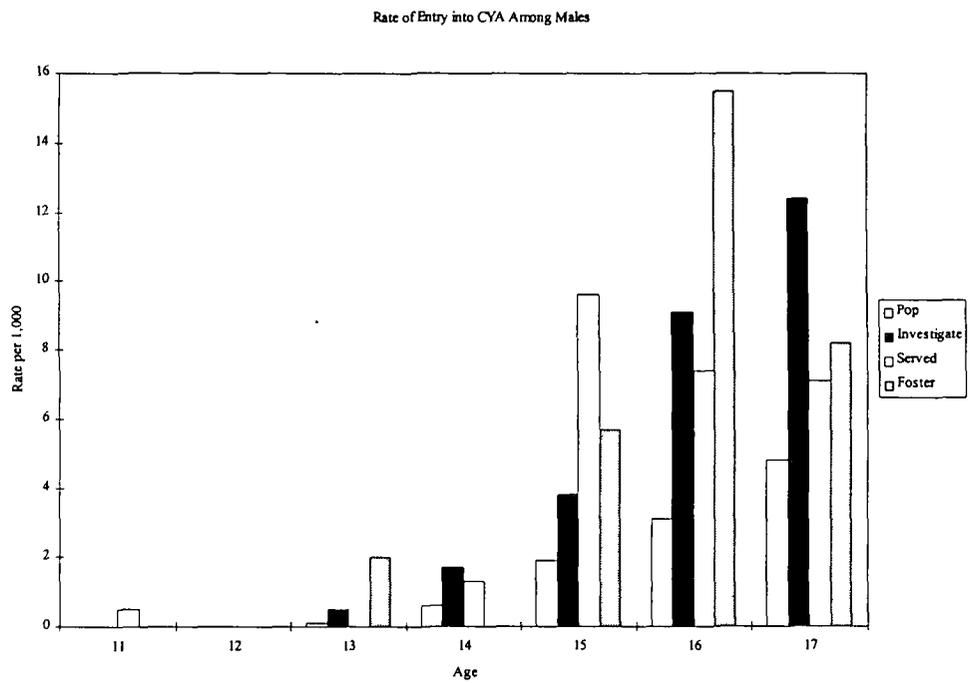
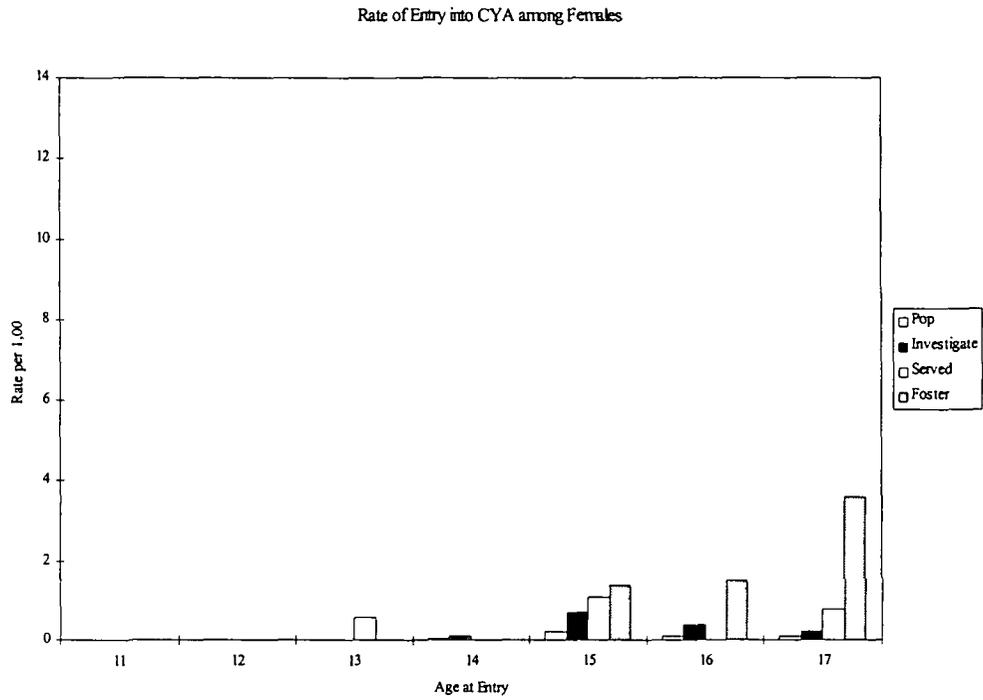


Table 4.9 1994 CYA Entries: Service Levels by Gender

Females

	11 yrs	12 yrs	13 yrs	14 yrs	15 yrs	16 yrs	17 yrs	Total
Population	0.01	0	0.01	0.04	0.2	0.1	0.1	0.07
Investigated Only	0	0	0	0.1	0.7	0.4	0.2	0.2
Served / No Foster	0	0	0.6	0	1.1	0	0.8	0.3
Foster Care	0	0	0	0	1.4	1.5	3.6	1.0

Males

	11 yrs	12 yrs	13 yrs	14 yrs	15 yrs	16 yrs	17 yrs	Total
Population	0	0	0.1	0.6	1.9	3.1	4.8	1.4
Investigated Only	0	0	0.5	1.7	3.8	9.1	12.4	2.9
Served / No Foster	0.5	0	0	1.3	9.6	7.4	7.1	2.9
Foster Care	0	0	2	0	5.7	15.5	8.2	3.4

The proportions moving through the various service levels are presented by ethnicity, age at first report, gender and type of maltreatment. While African American children have the highest rate of entry into CYA among the investigated population, their rate of entry declines as they move to a higher level of child welfare services. Among Hispanic children there is no significant difference in entry by service level, while both Caucasian and children of Other ethnic groups have higher rates of CYA entry following foster care (Figure 4.10). Males are somewhat less likely to receive services or be placed into foster care than females and males have an almost equal likelihood of entry into CYA across service levels. As seen in the incidence figures above, the risk of entry into CYA for females increases steadily with higher levels of service; females placed into foster care are most likely to enter CYA.

In Figure 4.11 one can see that children initially reported for neglect--particularly those cases which move beyond investigation are more likely to enter CYA. Children between the ages of 7 and 11 years were more frequently served and placed into foster care, but had the lowest rate of entry into CYA. Children reported between the ages of 12 and 14 had higher rates of entry into CYA among those served and placed into foster care.

Similar to children who are reported but not incarcerated, about 20 percent of the incarcerated youth received services after their first report. African American and Caucasian children who became incarcerated had similar proportions of youth served, while a smaller number of Hispanic incarcerated youth had previous child welfare services.

Recurrent reports. Among those who enter following a third report only 38 percent were consistently reported for the same type of maltreatment. Children reported prior to age 12 were more likely to have three or more reports prior to entry (Table 4.10). CYA entries were heavily concentrated among children with multiple reports. Among CYA entries 41 percent had at least three reports compared to only 28 percent of non-incarcerated youth. Among youth who entered CYA following contact with the child welfare system, 35 percent entered after their first report; 42 percent had between two and four reports, and 23 percent entered following five or more reports (See figure 4.12).

Figure 4.10 Investigation to CYA Entry: Percentage of Prior Case Decision by Ethnicity & Gender

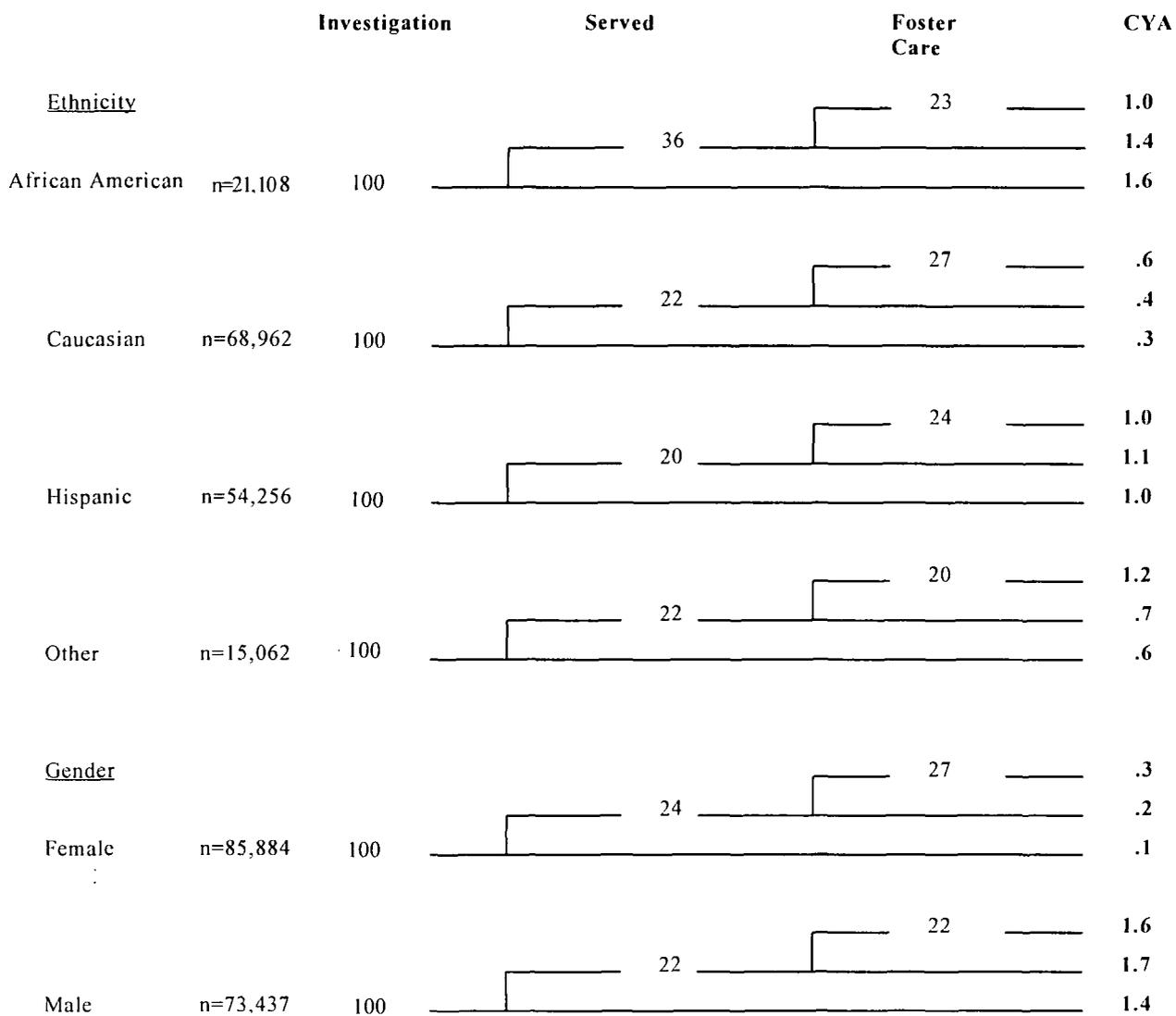


Figure 4.11 Investigation to CYA Entry: Percentage of Prior Case Decision by Age & Maltreatment Type

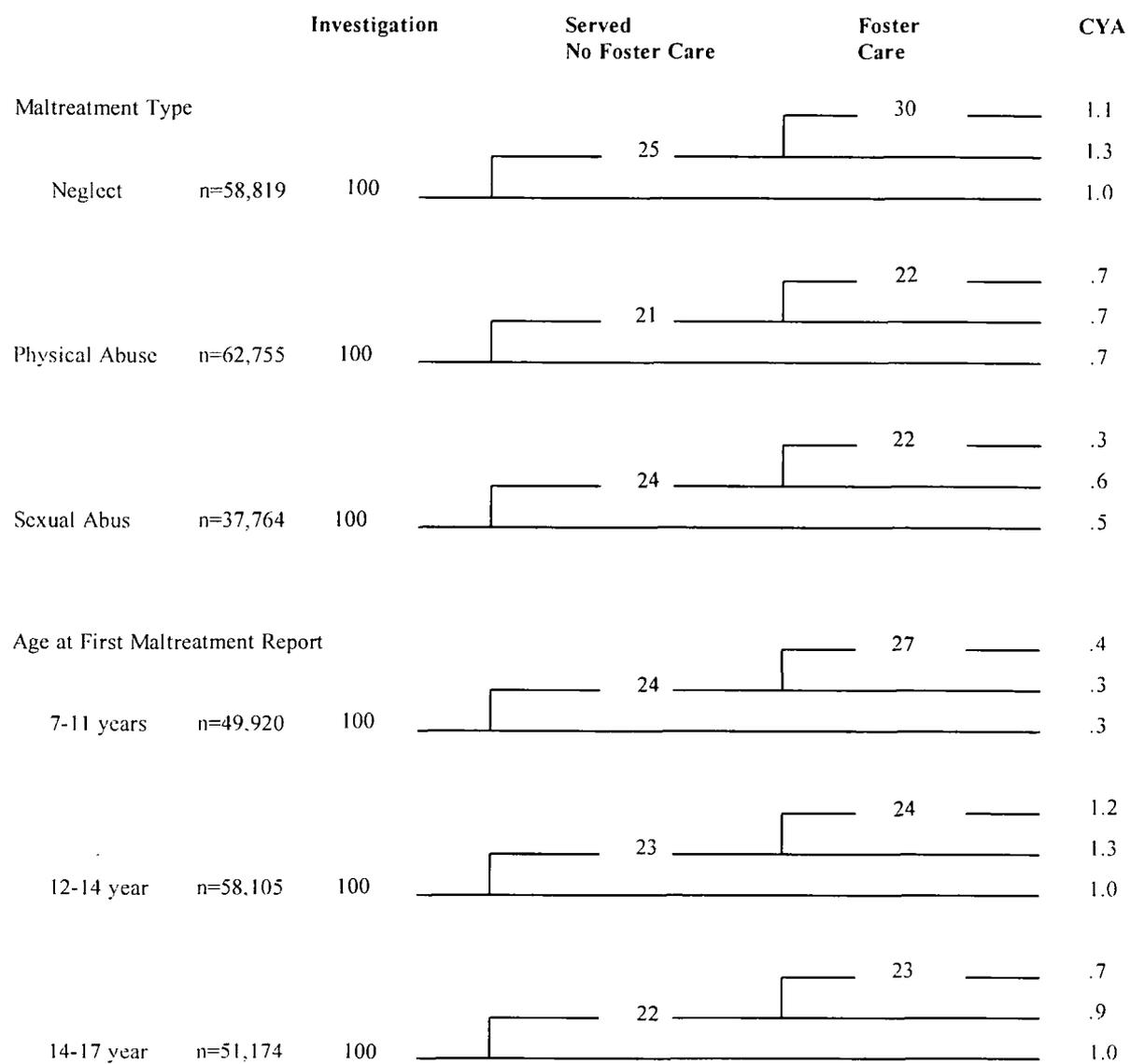


Table 4.10 CYA Entries by Number of Prior Reports: Up to Three Reports

	1 Report	2 Reports	3 Reports
Types of Abuse			
Neglect	50.0	52.2	46.0
Physical Abuse	34.3	35.7	27.0
Sexual Abuse	15.2	12.1	27.0
Same Type	n/a	49.3	37.8
Age at Entry			
<14 yrs	2.2	1.5	4.6
14-18 yrs	97.8	98.5	95.4
Age at Report			
7-11 yrs	10.0	20.1	32.2
12-15 yrs	49.6	55.8	51.3
15-17 yrs	40.4	24.1	16.4
Ethnicity			
AFAM	30.0	25.9	36.3
CAUC	16.4	19.0	20.4
HISP	43.1	47.1	45.4
OTH	10.5	8.0	7.9
Total*	408	274	152

* An additional 387 youth entered CYA after 4 or more reports

The rate of entry into CYA for youth with foster care histories was 9.0 per 1,000 youth in foster or group home placement. Approximately half of all foster care entries into CYA within the 10 county sample were in care less than 6 months during the spell preceding incarceration. Given the inability to examine placements prior to age seven, it is not possible to know if this was the sum total of their foster care experience. However, the time in care for non-incarcerated children was approximately twice the length of those who became incarcerated. Entry rates were highest for youth placed in group homes, shelter stays or other facilities (12 per 1,000) as compared to 7 per 1,000 in foster or kinship homes. The majority of CYA entries following at least one spell in foster care were reunified prior to incarceration (51%); the second largest

proportion ran away from their placement (19.4%). The median time to incarceration following exit from foster care for children who were reunified or ran away was over 24 months.

Additionally, 24 of the 72 youth who later entered CYA had child abuse and neglect reports following placement.

Table 4.11 Rate of Entry to CYA by Placement Type and Exit Reason from First Spell

Placement Type	Total Foster Care to CYA	Total Exits 1st Placement/1st Spell	Proportion CYA/Ttl Exits
Family Foster Care	21	3,167	0.7
Guardianship	2	382	0.5
Kinship Care	10	2,155	0.5
Group Home	25	2,299	1.2
Shelter Care	9	778	1.2
Other	5	421	1.2
Exit Reason			
Incarcerated	13	103	11.2
Reunified	37	4,732	0.8
Runaway	14	659	2.1

Restricting the sample to 1 child per family who were all at least 16 at the close of the study period ($n = 1,166$), approximately 13 per 1,000 investigated but not served children entered CYA; 14.5 per 1,000 served but not removed from their homes entered CYA; and 11.4 per 1,000 foster children entered CYA. A few descriptive statistics are provided for the entire study period prior to comparing the incarcerated and non-incarcerated groups through three report cycles. Approximately the same proportion (74%) of entries into CYA as child welfare cases that did not

enter CYA received some form of service during the seven year study period. However, there were differences in the timing of service delivery. While 77 percent of the incarcerated group who eventually received services were served following the first report, over 84 percent of the non-incarcerated group who received services at some point during the study period did so after the first report. Twenty-eight percent of the incarcerated sample had four or more reports compared to less than 6 percent of the non-incarcerated population.

Pathways and time periods. Comparing Figure 4.12 to Figure 4.13 demonstrates that the incarcerated group was more likely to have a second report than the non-incarcerated group. Median times from first to second and first to third reports are given along the bottom of the chart in Figure 4.12. Median length of time from first report to incarceration is presented along the line below the flow chart in Figure 4.13. Figure 4.14 breaks down median time to entry by service level. Those youth who entered after their first report are represented with the median time from the 1st report to first admission to CYA in the first shaded area within each service level bar; those who entered after their second report and the time it took from the first report to entry is shown in the second bar and so on according to the number of reports prior to entry into CYA. Overall there were not significant differences between service levels in the amount of time between child welfare service contact and eventual incarceration.

Figure 4.12 Child Welfare Pathways of Non-CYA Entries: 3 Report Cycles

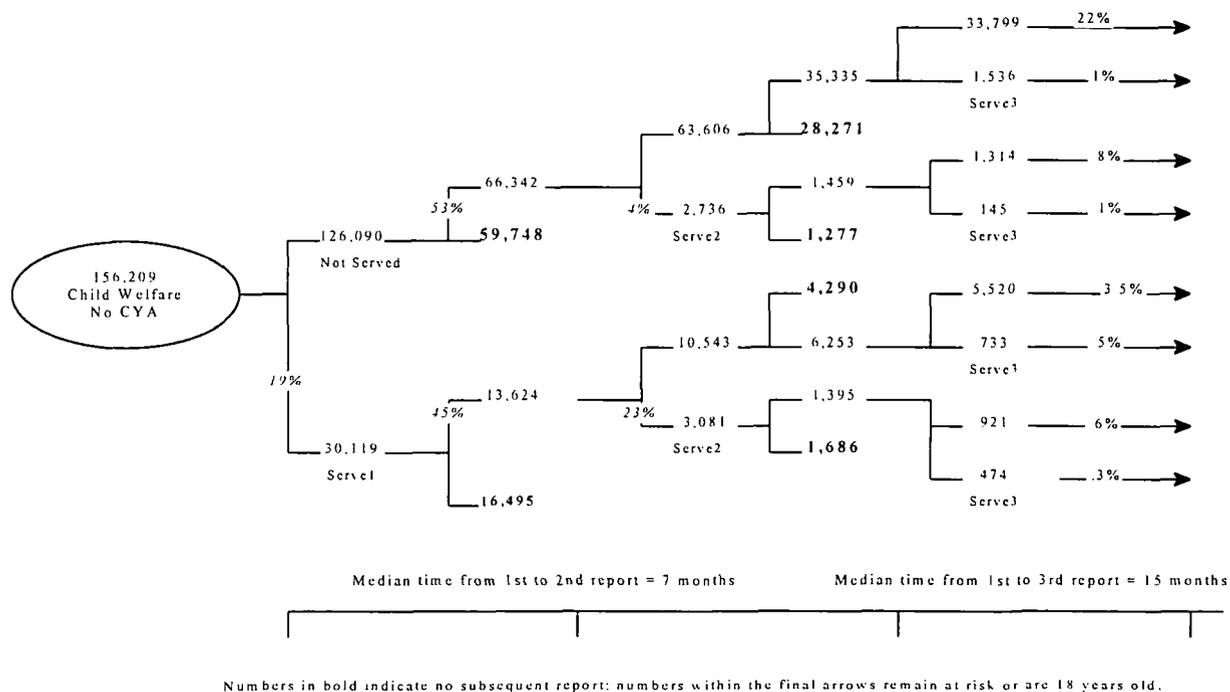


Figure 4.13 Child Welfare Pathways of CYA Entries: 3 Report Cycles

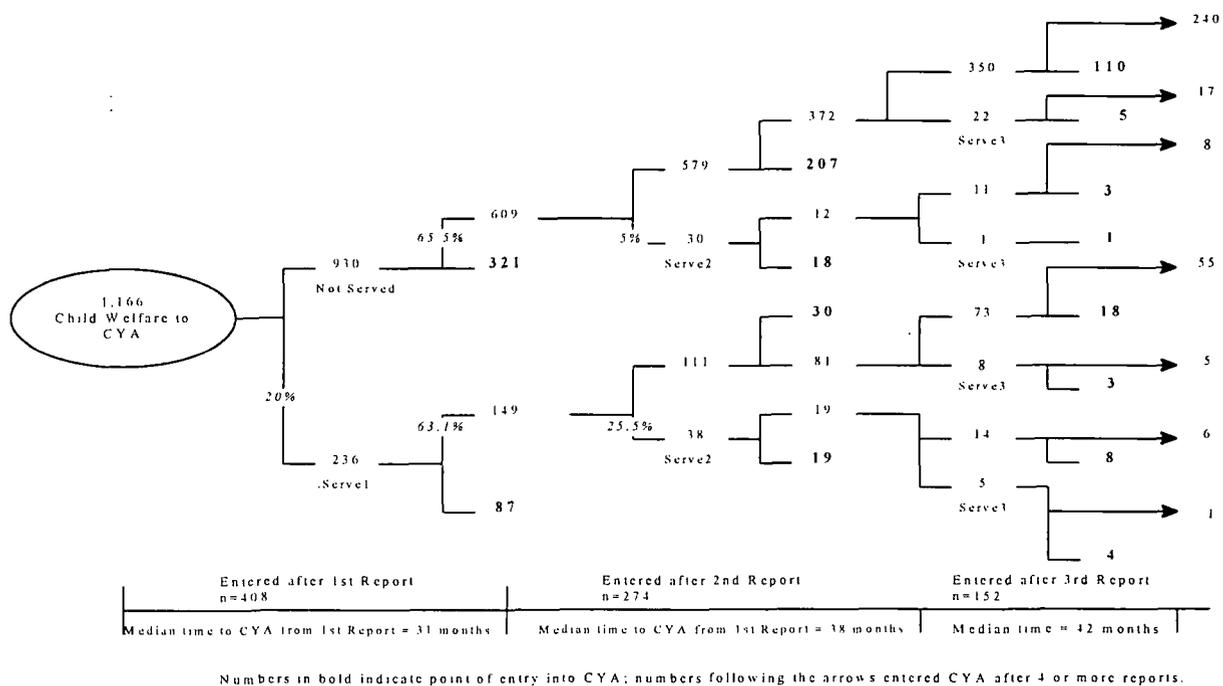
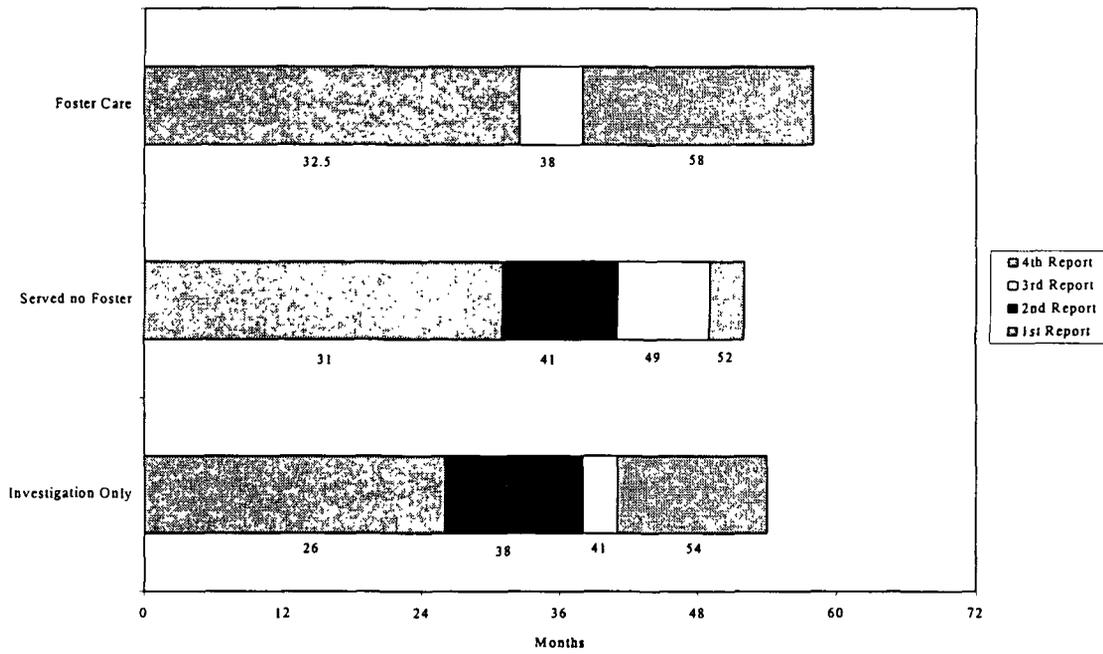


Figure 4.14 Time from First Report to CYA Entry by Prior Reports and Service Levels



* The foster placement cases in this figure entered care after the report indicated (e.g. those youth who entered CYA after their 3rd Report who were also entered foster placement after their 3rd Report).

Figure 4.15 Median Time Periods: Entry into CYA by Number of Maltreatment Reports

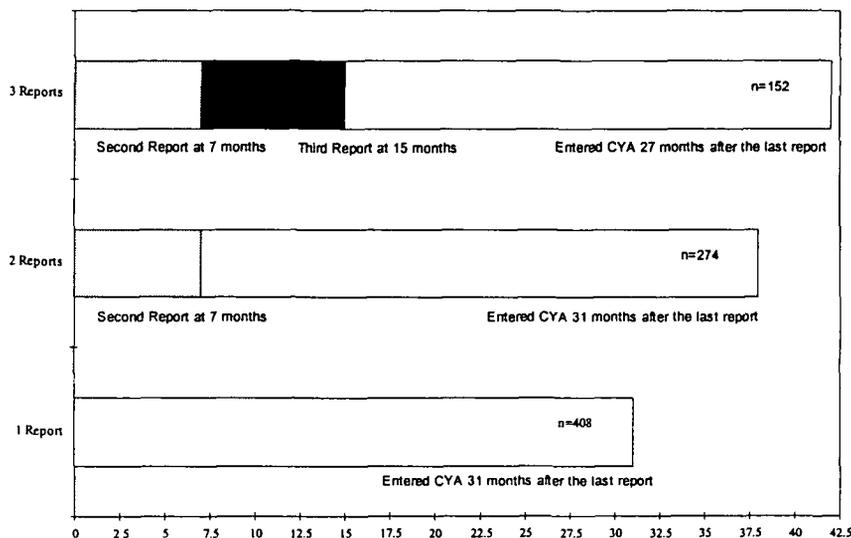


Figure 4.15 presents time to incarceration by number of reports prior to CYA entry and time between reports for three reporting cycles. Among entries into CYA who experienced more than one report there was little difference in the time periods from the last maltreatment report to entry into CYA.

Risk of entry. Those case characteristics with significant bivariate differences in CYA entry over time are presented in the following figures. Figures 4.16,4.17,4.18, & 4.19 show the failure rate (incarceration rate) by age, ethnicity, gender and maltreatment type for all investigated maltreatment children in the sample. Children over age 14 at the first report entered CYA more rapidly following the report but children aged 12 to 14 had the highest overall rate of entry--just exceeding two percent. Among children less than 14 years of age at the time of their first maltreatment report the probability of entry increases most dramatically three years after the report (Figure 4.16). Over time about 5 percent more African American youth entered CYA than Hispanic youth. Both African American and Hispanic youth were significantly more likely to enter CYA than Caucasian children (Figure 4.17). Males were substantially more likely to be incarcerated than females (Figure 4.18). Children initially reported for neglect were more likely to enter CYA than children reported for physical (about 5 percent less than neglect over time) or sexual abuse (about 10 percent less than neglect over time) (Figure 4.19).

Figure 4.16 Probability of Entry into CYA by Age in years since First Maltreatment Report

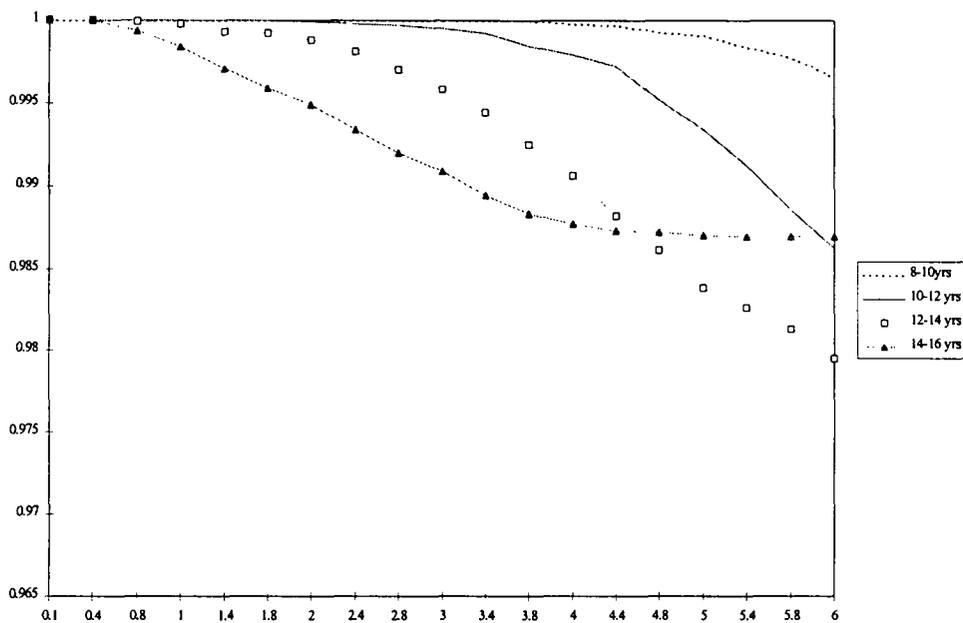


Figure 4.17 Probability of Entry into CYA in years by Ethnicity

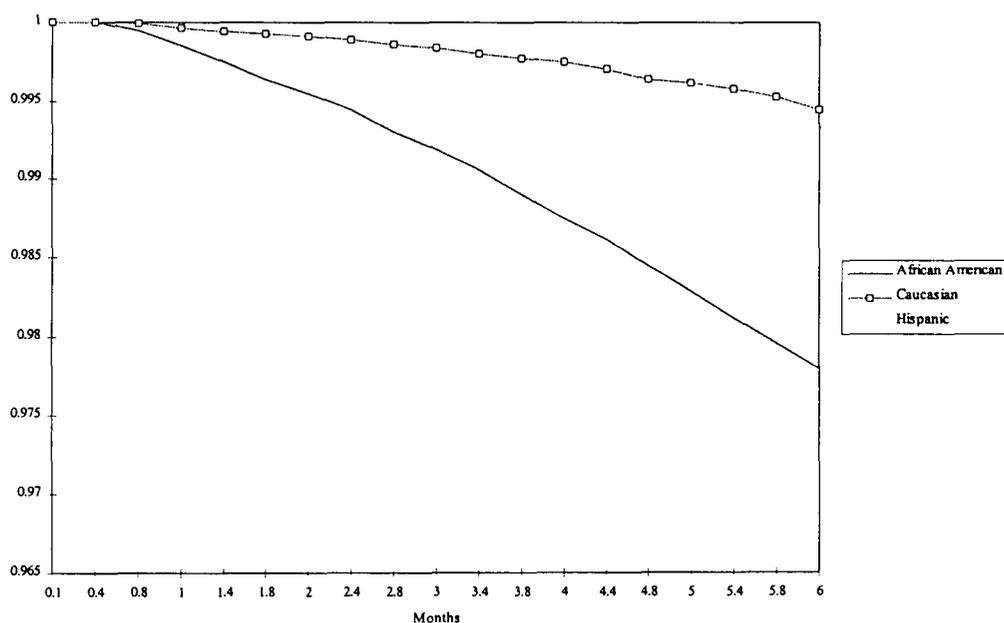


Figure 4.18 Probability of Entry into CYA in years by Gender

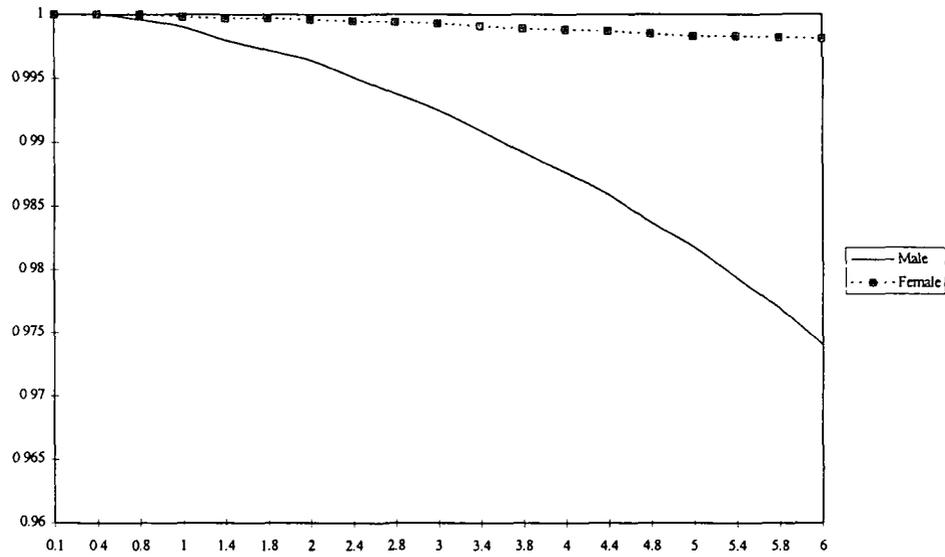


Figure 4.19 Probability of Entry into CYA in years by Maltreatment Report Type

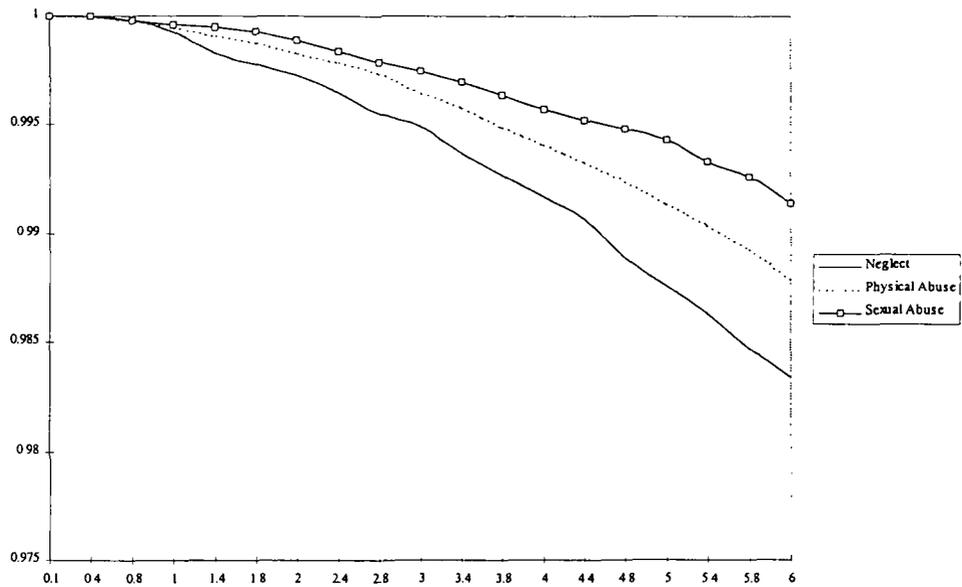


Table 4.12 Cumulative Probabilities of Failure (Incarceration) at 2,3,4,5 and 6 years

	<u>Months to CYA Entry</u>					Total	Failed	Censored
	24	36	48	60	72			
Age at 1st Report								
Under 14	.0002	.001	.003	.01	.014	24,726	250	98.99
14 to 17	.001	.004	.007	.01	.014	39,113	363	99.1
Ethnicity								
African American	.007	.01	.02	.02	.03	9,540	202	97.88
Caucasian	.001	.002	.003	.003	.01	32,407	143	99.56
Hispanic	.003	.006	.01	.015	.02	21,792	268	98.77
Gender								
Female	.001	.001	.002	.002	.003	36,356	64	99.82
Male	.005	.01	.02	.02	.03	27,312	549	97.99
Report Reason								
Neglect	.004	.007	.01	.015	.02	23,638	302	98.72
Phys/Sex Abuse	.002	.004	.006	.01	.01	40,101	311	99.22
Over 3 Rpts								
Yes	.002	.004	.008	.01	.02	17,309	240	98.61
No	.003	.005	.008	.01	.01	46,430	373	99.2
Change in Report Reason								
Yes	.002	.005	.008	.01	.02	15,042	182	98.79
No	.003	.005	.008	.01	.01	48,697	431	99.11
Services Beyond Investigation								
Yes	.002	.004	.007	.01	.02	48,077	447	99.1
No	.003	.005	.008	.01	.015	15,662	166	98.9

To further examine the risk of entry into CYA for children with an investigated abuse or neglect report, a proportional hazards analysis was conducted. To satisfy the regression requirement of independence, the sample was restricted to one child per family with an investigated abuse report (see Table 4.13 for bivariate sample characteristics). The final model had a -2 Log Likelihood of 879.42, 17 DF ($p=.0001$) which indicated that the variables were important in understanding the risk of incarceration controlling for time of entry and time at risk. The variance explained or predictive usefulness of the variables, however, was quite low. Although the SAS program does not provide a measure of the model fit, Allison (1996) provides a formula to estimate this for proportional hazards analysis: $R^2 = 1 - \exp[-L/N]$. According to this estimate, the model explains less than 3 percent of the incarceration event.

As anticipated from the survival curves, age at first report (older more at risk) and being male were the strongest contributors to incarceration in the present sample. Hispanic children had a slightly higher risk of incarceration than African American or Caucasian children. A change in report type for children with only two referrals resulted in a greater likelihood of incarceration--particularly when the first report was for reasons of neglect. The provision of child welfare services, including foster placement, did not change the risk of incarceration for Caucasian children, but among African American or Hispanic children receipt of services beyond investigation somewhat decreased the risk of entry into CYA.

Table 4.13 Frequencies for Restricted Sample (1 child per family)

Variables	<u>n</u>	%	Odds of Incarceration
African American	9,520	14.97	2.83 [2.39-3.35]
Hispanic	21,792	34.2	1.50 [1.28-1.76]
Female	36,420	57.1	0.9 [.07-.11]
Services/Foster Care	15,662	24.6	1.14 [.95-1.36]
Neglect	23,638	37.1	1.66 [1.41-1.94]
3+ Reports	17,309	27.2	1.74 [1.47-2.04]
Total	63,739		

Table 4.14 Proportional Hazards Model: Risk of Incarceration

n = 61,705 542 incarcerated (1 child per family born 1974-1981)
Analysis of Maximum Likelihood Estimate

Variable	DF	Parameter Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square	Risk Ratio
Age at 1st Report						
14 or older	1	.85	.18	21.66	.0001	2.35
Ethnicity						
African Amer	1	.69	.43	2.65	.10	2.00
Hispanic	1	.89	.37	5.78	.02	2.45
Caucasian						
Gender						
Male	1	2.20	.27	67.40	.0001	9.07
Female						
Report Type						
Neglect	1	.26	.09	8.95	.003	1.30
Physical/ Sexual						
Change in Report Type (Change)						
Yes	1	.33	.14	5.64	.02	1.40
No						
Number of Reports (Num.)						
3+ reports	1	-.10	.28	0.13	.72	.91
< 3 reports						
Child Welfare Services (CWS)						
Foster/ Other	1	-.04	.33	.02	.91	.96
Investigation only						
Interactions						
Male/AFAM	1	.62	.40	2.39	.12	1.86
Male/HISP	1	.58	.36	2.62	.11	1.78
Age/AFAM	1	.62	.24	6.41	.01	1.85
Age/HISP	1	-.11	.22	0.24	.62	0.89
CWS/AFAM	1	-.65	.25	6.67	.009	.52
CWS/HISP	1	-.55	.25	4.99	.03	.58
Change/Num.	1	-.20	.19	1.11	.29	.82
Time Varying						
Hispanic	1	.01	.01	3.46	.06	1.01
Number	1	.01	.01	2.51	.11	1.01
-2 Log Likelihood χ^2 879.42, 17df, p=.0001						

Trends Among First Admissions to CYA: Statewide & 10 County

To place entries into CYA from Child Welfare Services within the 10 counties into context, a brief overview of the statewide CYA population and recent trends is provided. Figure 4.10 displays the rate of entry into CYA by age and ethnicity for 1994. The trends are similar to those in the rate of entry per investigated maltreatment report in the previous section with the exception that the rate for Caucasian youth is even lower in comparison to all other children of color. Across age groups African American children have the highest entry rates, peaking at almost 10 per 1,000 seventeen year olds. Similar to child maltreatment reporting trends, Hispanic youth have the second highest rate of incarceration. Children of Other ethnic group, however, have higher rates of incarceration than reporting for child abuse or neglect.

Trends in admissions to CYA were examined for the past seven years. On average 4,200 youth enter CYA each year with a dip in 1996 which corresponds to a change in how counties were billed for CYA inmates. Despite having the highest incidence rates, African American youth are declining as a percentage of CYA entries while Hispanics have comprised the majority of entries since 1991. African American youth comprise a larger proportion of entries under age 15. The proportion of female entries has remained relatively stable at about 3.5 percent (see Table 4.16 and Figures 4.22, 4.23, 4.24). Statewide entries into CYA were compared with the 10 county sample by child welfare history (Table 4.17). Incarcerated youth with child welfare histories tended to enter at a younger age than either the 10 county sample without child welfare histories or the statewide entries. There was a significantly higher proportion of females among CYA entries with child welfare histories.

Figure 4.20 1994 Statewide Entries into CYA per 1,000 Youth in Populations: Age by Ethnicity

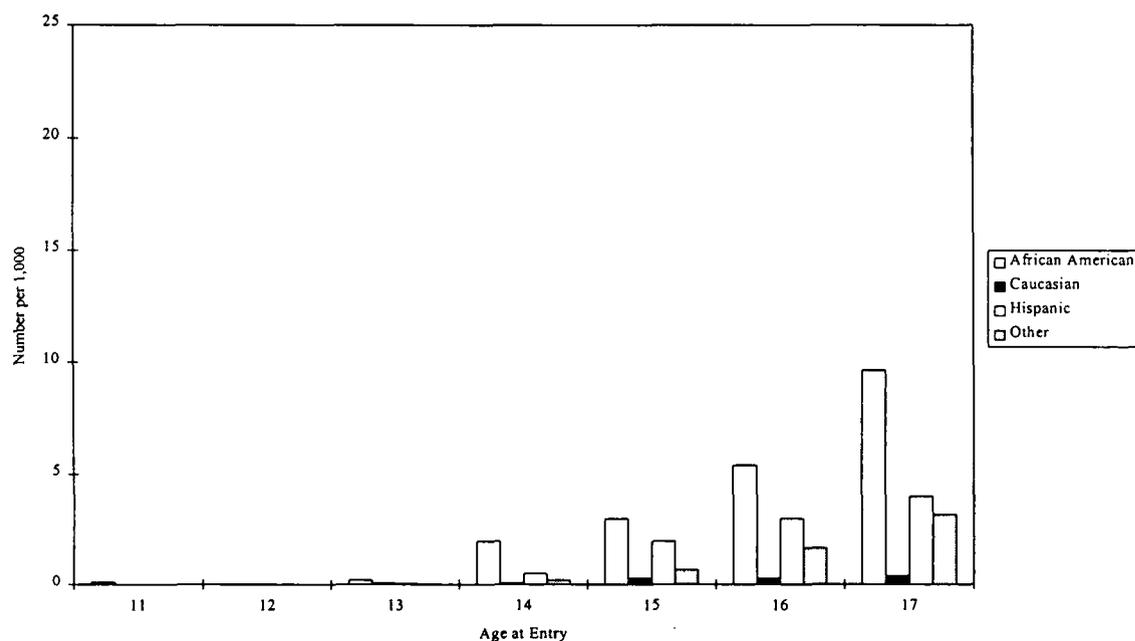


Table 4.15 1994 Statewide Admissions to CYA by Age and Ethnicity

	11 yrs	12 yrs	13 yrs	14 yrs	15 yrs	16 yrs	17 yrs	Total
AFAM	1	1	11	54	143	247	431	888
CAUC	0	0	7	29	88	131	210	465
HISP	0	4	12	71	206	351	633	1,277
OTH	0	0	1	18	51	79	159	308
Total	1	5	31	172	488	808	1,433	2,958

Rate per 1,000

	11 yrs	12 yrs	13 yrs	14 yrs	15 yrs	16 yrs	17 yrs	Total
AFAM	0.02	0.03	0.3	2.0	4.3	7.6	13.6	3.7
CAUC	0.0	0.0	0.03	0.2	0.5	1.0	1.2	0.3
HISP	0.0	0.03	0.1	0.5	1.4	2.4	4.3	1.2
OTH	0.0	0.0	0.02	0.3	1.1	1.6	3.3	1.0
Total	0.002	0.01	0.1	0.4	1.2	2.0	3.6	1.0

Figure 4.21 First Admissions to CYA: Percent Ethnicity by Year of Entry

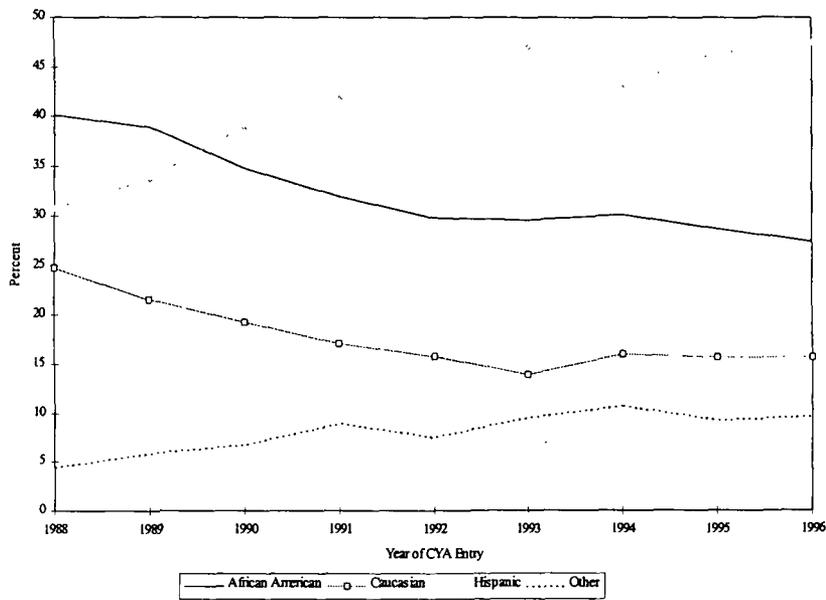


Figure 4.22 First Admissions to CYA: Gender by Year of Entry

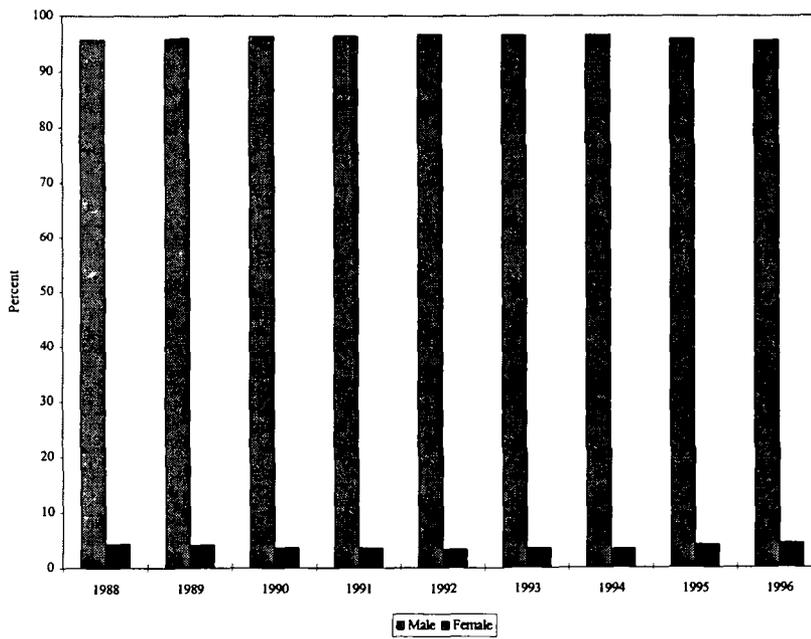
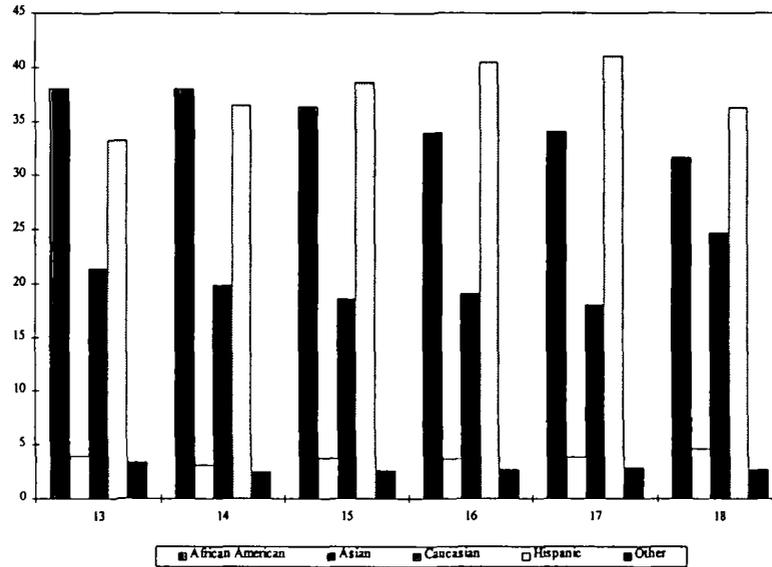


Figure 4.23 First Admissions to CYA by Age and EthnicityTable 4.16 Percent of Statewide Entries into CYA by Age, Ethnicity, and Gender

	1988	1989	1990	1991	1992	1993	1994	1995	1996
<u>Age at Entry</u>									
<=14	3.8	3.8	3.8	4.5	3.6	4.5	4.5	4.6	4.6
15-16	27.5	27.3	25.1	31.0	28.9	29.4	28.4	28.7	34.7
17-18	68.5	68.8	67.9	54.3	67.3	66.0	67.0	66.0	60.7
<u>Ethnicity</u>									
AFAM	40.1	38.9	34.8	31.9	29.8	29.5	30.1	28.7	27.3
CAUC	24.7	21.5	19.3	17.1	15.8	13.9	16.0	15.6	15.6
HISP	30.7	33.7	39.1	42.0	46.8	47.1	43.2	46.4	47.5
OTH	4.5	5.9	6.8	9.0	7.6	9.5	10.7	9.3	9.6
<u>Gender</u>									
FEM	4.3	4.1	3.6	3.6	3.3	3.5	3.4	4.1	4.4
MALE	95.7	95.9	96.4	96.4	96.7	96.5	96.6	95.9	95.6
Total	4,287	4,198	4,25	4,186	4,760	4,537	4,57	4,53	3,907

Table 4.17 Percent CYA Entries: 10 County No CWS and 10 County with CWS
Compared to Statewide Entries (1990 - 1996)

	10 County Child Welfare (n = 1,211)	10 County No Child welfare (n = 5,123)	Statewide (n=29,654)
Age at Entry			
< 13 yrs	.2	0	1.0
13-15 yrs	28.7	18.9	13.5
16-18 yrs	71.0	81.1*	85.5
Prior Non-CYA Incarceration			
Yes	50.6	44.4	55.0
3+ Sustained Petitions			
Yes	49.2	10.5*	47.8
Ethnicity			
African American	27.8	23.9*	31.0
Caucasian	19.6	12.1*	16.3
Hispanic	45.0	49.0*	44.1
Other	7.7	15.1*	8.6
Gender			
Female	9.1	3.1*	3.6
Male	90.9	96.9	96.4
Single Parent Home	30	22.0*	19.0
Dead/ Divorced Parents	52	49	54.0
Own Child	14.4	14.1	12.4
Less than 6th Grade Reading	61	60	66.0
Weapon Use	37.8	48.9*	44.0
Violent Offense	50	60*	54.7

* Significant at $p \geq .05$.

Birth records. Birth records for the incarcerated sample were compared to all children born in the 10 study counties (see Table 4.18). No significant differences were found between incarcerated child welfare and the general population by birth weight or gestation. Nor were there significant differences for those incarcerated for violent versus non-violent offenses. Children with child welfare histories who were later incarcerated from within the 10 county sample were more frequently born to teen mothers (21%) than all other incarcerated youth (14%), other non-incarcerated child welfare cases (10.4%) or all children (9%). The percentages of child welfare cases born to teen mothers in the urban sample were slightly higher than in the larger 10 county group.

Table 4.18 Percent Birth Characteristics: Birth Data Matched to CYA Entries by Offense Type and Child Welfare History Compared to All Births in 10 the 10 Study Counties (1974-1983)

	Urban CWS			10 County CWS & CYA			10 County
	CYA VIOL n=129	CYA PROP n=149	CWS Only n=34,596	CWS Only n=88,168	CWS & CYA n=563	CYA Only n=1,981	All Children n=3,533,611
<u>Birthweight</u> < 6lbs*	11.0	11.0	13.0	12.0	12.0	10.0	7.4
<u>Gestation</u> < 9 months	5.0	9.0	11.0	10.0	8.0	9.0	7.6
<u>Mother's Age</u> < 18 years	23.0	22.0	12.5	10.4	21.0	14.0	9.0

*A large percentage of the CYA cases had missing values for birthweight.

Violent versus non-violent offenders. Table 4.19 presents violent and non-violent offenses broken down by offense category. The type of primary offense did not vary much between state and county No CWS first admissions. There were, however, differences between CWS and non-CWS offenders by crime type. Youth with child welfare records were less likely

to be incarcerated for homicide and manslaughter, about equally likely to have committed robbery, and more likely to have committed burglary than either county or statewide inmates. Of note, though the category of “other” crimes is relatively small, CWS entries had three times the number of arson cases as non-CWS cases.

Table 4.19 Percent Primary Offense: County No CWS, County CWS and Statewide Admissions

	10 County No CWS (n=5,123)	10 County CWS (n=1,211)	Statewide (n=29,654)
Violent Crimes			
Homicide	5.7	2.5	5.4
Manslaughter	2.3	1.5	2.6
Robbery	21.4	21.8	21.5
Assault	26.8	20.9	20.2
Rape/ Sex crimes	4.6	5.1	5.2
Property or Non- person Crimes			
Burglary	25.6	34.6	30.1
Drug Offenses	7.8	6.8	9.7
Other	5.8	6.8	5.3

Children entering CYA with child welfare histories were compared according to violent offending (see Table 4.20). There were few significant differences between violent and non-violent offenders at the 10 county level.

To attempt to further understand variation between CYA entries with and without Child Welfare Services, a logit model was constructed to explore the likelihood of incarceration for a

violent offense (Table 4.21). The final model included 6,334 first admissions to CYA; 3,675 (58%) for a violent primary offense. Interactions between ethnicity and child welfare services: age at first sustained court petition and substance abuse and, male and substance abuse were included in the model. Odds over one indicate an increase in the likelihood of services and odds less than one suggest a lower likelihood of receiving services. The model Likelihood Ratio Chi-Square=140.4, DF=125, ($p=.16$) although non-significant did not fit the data particularly well. An age approximation of the r-square for a regression analysis, called a max-rescaled r-square, is provided by the SAS 6.11 output. This measure indicates that about 14 percent of the variance was explained.

Children of African American, Hispanic or Other ethnic groups were approximately 60 percent more likely to be incarcerated for a violent offense than Caucasian children. Males and

Table 4.20 CYA Entries with Child Welfare Histories: Violent versus Property Offenders

Variables	Violent $n=607$	Not Violent $n=604$	Percent of Total CWS/ CYA $n=1,211$
African American/Hispanic	77.7*	66.7	72.3
Single Parent	24.7	25.6	25.2
3 or more Siblings	51.6	51.6	51.6
Had Own Child	12.3	12.5	12.4
1st Report: Neglect	49.3	47.9	48.6
Services Beyond Invest.	26.6	26.3	26.5
Change in Report Reason	30.1	32.2	34.5
Report before Petition	31.7*	37.7	34.7
1st Petition: < 13yrs	15.0	26.0	20.3
More than 3 Petitions	36.8*	61.9	49.2
Prior Incarceration	38.1*	63.4	50.6

* Indicates there was a significant difference between the proportion of that variable among violent and non-violent offenders.

youth with a first sustained court petition prior to age 13 were about two times more likely to be violent offenders. Substance abuse problems mediated the odds for both males and early onset offenders. Among family characteristics, having a single (never married) parent increased the odds of violent offending very slightly but decreased the odds among those with substance abuse problems.

A data match between the CYA and Special Education Severely Emotionally Disturbed database revealed that 85 of the incarcerated youth in the 10 sample counties had been identified as severely emotionally disturbed (SED) by the public education system. To assess the relative impact of SED status on the likelihood of being incarcerated for a violent offense, an additional logistic regression model was constructed (Table 4.22). Because information required for matching the SED data to CYA cases was only available for those cases still active in 1996, the sample was restricted to those who were less than or equal to 18 years of age in 1996 to insure that all youth in the model remained eligible for SED services. The final model included 3,175 first admissions to CYA; 1,789 (56 %) for a violent primary offense. Several interactions were included in the final model. Odds over one indicate an increase in the likelihood of services and odds less than one suggest a lower likelihood of incarceration for a violent offense. The model Likelihood Ratio Chi-Square=172.8, DF=159,(p=.22) indicated that the model fit the data relatively well. The max rescaled r-square indicates that about 15 percent of the variance was explained.

Youth of color who had prior investigations of child abuse and neglect or were identified as severely emotionally disturbed (SED) were more likely to be incarcerated for a violent offense. While the main effect of identification as SED decreased the likelihood of having had a

Table 4.21 Logistic Regression Model: Violent Primary Offense

Variable	n	Odds Ratio
Age at First Sustained Petition		
Not less than 13 years old	3,987	1.00
Less than 13	817	1.75 (p=.15)
Missing	1,530	6.40
Ethnicity		
Caucasian	856	1.00
African American/ Hispanic/Oth	5,478	1.60
Gender		
Female	270	1.00
Male	6,064	5.30
Single Parent		
No	5,073	1.00
Yes	1,261	1.18
Child Maltreatment Investigation		
No	5,123	1.00
Yes	1,211	.54
Substance Abuse Problem		
No	4,308	1.00
Yes	2,026	3.90
Prior Incarceration		
No	3,445	1.00
Yes	2,889	.37
Interactions		
Age/ Substance Abuse	181	.79
Age/ Male	763	.42
Agemiss/Male	1,438	.26
Age/ Incarceration	505	.61
Agemiss/Incarceration	46	2.11
Child Welfare/ Ethnicity	987	1.40
Single Parent/ Substance Abuse	1,830	.68
Male / Substance Abuse	1,831	.27

n=6,334

--3,675 violent

Likelihood Ratio Chi-Square 140.4, 125DF, (p=.16) Max-rescaled R²=.14

violent primary offense, SED status generally increased the likelihood of violent offending among interaction terms. Youth who were identified as SED and were under age 13 at age of a first sustained petition or were previously incarcerated were over 3 times more likely to be among the violent offender population. In this more restricted sample (according to age) the influence of substance abuse was altered by the introduction of the SED variable and the deletion of gender. [Due to the very small numbers of females and the very small numbers of SED cases, gender could not be included in this logit model; eighty-eight percent of the SED group was male.] Number of petitions (three or more) was included in this model creating an interaction between number of petitions and previous incarceration that doubled the likelihood of being a violent offender. Previous investigation for child abuse and neglect either had no impact or slightly reduced the likelihood of being among the violent offenders in the sample.

Community Variations

Table 4.23 and Figure 4.24 provides a comparison of community indicators at the county and urban area level. The last two columns compare the neighborhoods of children reported for maltreatment but not incarcerated with children reported who entered CYA. Generally, socioeconomic conditions and educational attainment decline from left (county-wide) to right (incarcerated-urban). There were dramatic changes in the socioeconomic and education indicators between county and even citywide levels and those census tracts of children with investigated maltreatment reports. There were fewer differences, however, between census tracts of children with investigated maltreatment reports and those who later entered CYA. Rather surprisingly, the proportion of married versus single parents did not change significantly across neighborhood categories. The rate of movement from one home to another actually declined as

Table 4.22 Logistic Regression Model: Violent Primary Offense and SED

Variable	n	Odds Ratio
Age at First Sustained Petition		
Not less than 13	1,926	1.00
Less than 13	528	.78
Missing	721	.88
Ethnicity		
Caucasian	456	1.00
African American/ Hispanic/Oth	2,719	1.80*
SED		
No	3,099	1.00
Yes	76	.49
Single Parent		
No	2,492	1.00
Yes	683	1.22
Child Maltreatment Investigation		
No	2,335	1.00
Yes	840	.67 (p=.07)
Substance Abuse Problem		
No	2,788	1.00
Yes	387	.94
Prior Incarceration		
No	1,742	1.00
Yes	1,433	.29*
Number of Sustained Petitions		
Less than 3	2,288	1.00
More than 3	887	.35*
Interactions		
Age/ Substance Abuse	91	1.40 (p=.07)
Age/ SED	16	4.10*
Age/ Single	154	1.41 (p=.09)
Age/ Child Welfare	209	.78*
Agemiss/Incarceration	21	2.84*
Agemiss/Substance	46	2.40*
Agemiss/Single	58	1.80
Child Welfare/ Ethnicity	672	1.31
Child Welfare/ Substance Abuse	142	1.46
Child Welfare/ SED	38	.54
Single Parent/ Substance Abuse	110	.55*
Single Parent/ Incarceration	352	1.46*
Single Parent/ Ethnicity	608	.69
SED/ Ethnicity	48	1.40
SED/ Incarceration	36	2.90*
Incarceration/ Petitions	684	1.86*

n=3,175 , -1,789 violent

Likelihood Ratio Chi-Square 172.8, 159DF, (p=.22) Max-rescaled R²=.15

* indicates p<.05; near significance (e.g. .05 <p<.10) is indicated in parentheses

poverty increased. The neighborhoods of children with investigated maltreatment reports and later entry into CYA had higher rates of violent and property crimes.

Correlations among community indicator variables revealed expected high correlations (above $r = .4$, $p = .0001$) between proportion of households receiving AFDC, proportion of families headed by single mothers, child poverty, ratio of children to adults, labor force status and proportion of adults without high school diplomas. Higher proportions of English speaking, U.S. citizens in a census tract were negatively correlated with indicators of lower socioeconomic status. Remaining in the same home within the last five years was positively correlated (though less than $r = .25$, $p = .0001$) with AFDC households and child poverty. Higher proportion of African Americans was correlated with single mother families ($r = .46$, $p = .0001$) and AFDC ($r = .58$, $p = .0001$), while Hispanic neighborhoods correlated highly with child poverty ($r = .82$, $p = .0001$) and to a lesser extent with AFDC households ($r = .38$, $p = .0001$). The correlation between higher proportions of Hispanic residents with single mother families was significant, but very small ($r = .09$). Rate of violent crime in a neighborhood ($r = .46$, $p = .0001$) and property crime ($r = .34$, $p = .0001$) had a high correlation with the proportion of heads of household not in the labor force.

Table 4.22 Logistic Regression Model: Violent Primary Offense and SED

Variable	n	Odds Ratio
Age at First Sustained Petition		
Not less than 13	2,647	1.00
Less than 13	528	.78
Not missing	2,454	1.00
Missing	721	.88
Ethnicity		
Caucasian	456	1.00
African American/ Hispanic/Oth	2,719	1.80*
SED		
No	3,099	1.00
Yes	76	.49
Single Parent		
No	2,492	1.00
Yes	683	1.22
Child Maltreatment Investigation		
No	2,335	1.00
Yes	840	.67 (p=.07)
Substance Abuse Problem		
No	2,788	1.00
Yes	387	.94
Prior Incarceration		
No	1,742	1.00
Yes	1,433	.29*
Number of Sustained Petitions		
Less than 3	2,288	1.00
More than 3	887	.35*
Interactions		
Age/ Substance Abuse	91	1.40 (p=.07)
Age/ SED	16	4.10*
Age/ Single	154	1.41 (p=.09)
Age/ Child Welfare	209	.78*
Agemiss/Incarceration	21	2.84*
Agemiss/Substance	46	2.40*
Agemiss/Single	58	1.80
Child Welfare/ Ethnicity	672	1.31
Child Welfare/ Substance Abuse	142	1.46
Child Welfare/ SED	38	.54
Single Parent/ Substance Abuse	110	.55*
Single Parent/ Incarceration	352	1.46*
Single Parent/ Ethnicity	608	.69
SED/ Ethnicity	48	1.40
SED/ Incarceration	36	2.90*
Incarceration/ Petitions	684	1.86*

n=3,175 , -1,789 violent

Likelihood Ratio Chi-Square 172.8, 159DF, (p=.22) Max-rescaled R²=.15

* indicates p<.05; near significance (e.g. .05 <p<.10) is indicated in parentheses

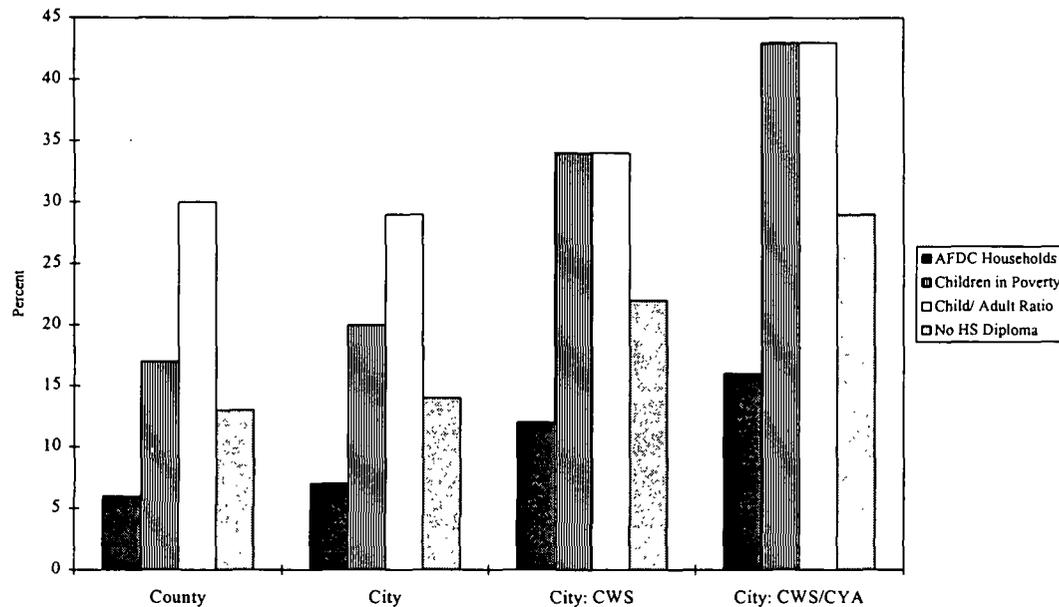
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Correlations among community indicator variables revealed expected high correlations (above $r = .4$, $p = .0001$) between proportion of households receiving AFDC, proportion of families headed by single mothers, child poverty, ratio of children to adults, labor force status and proportion of adults without high school diplomas. Higher proportions of English speaking, U.S. citizens in a census tract were negatively correlated with indicators of lower socioeconomic status. Remaining in the same home within the last five years was positively correlated (though less than $r = .25$, $p = .0001$) with AFDC households and child poverty. Higher proportion of African Americans was correlated with single mother families ($r = .46$, $p = .0001$) and AFDC ($r = .58$, $p = .0001$), while Hispanic neighborhoods correlated highly with child poverty ($r = .82$, $p = .0001$) and to a lesser extent with AFDC households ($r = .38$, $p = .0001$). The correlation between higher proportions of Hispanic residents with single mother families was significant, but very small ($r = .09$). Rate of violent crime in a neighborhood ($r = .46$, $p = .0001$) and property crime ($r = .34$, $p = .0001$) had a high correlation with the proportion of heads of household not in the labor force.

Table 4.23 Community Indicator Comparison: Median and Quartiles by Geographic Area, Address of Child Maltreatment Reports, and Address of CYA Entries

<u>Proportion or Rate</u>	<u>10 County</u>	<u>City</u>	<u>City:CWS</u>	<u>City:CYA/CWS</u>
Ethnicity				
African American	.01 .02 .05	.02 .05 .13	.02 .06 .14	.03 .06 .18
Caucasian	.65 .80 .89	.44 .73 .86	.37 .65 .80	.33 .54 .72
Hispanic	.07 .12 .24	.07 .13 .25	.12 .22 .41	.17 .27 .50
Economic				
AFDC	.03 .06 .10	.04 .07 .16	.06 .12 .21	.11 .16 .23
Child Poverty	.08 .17 .32	.10 .20 .39	.19 .34 .51	.31 .43 .56
Family Income	\$43,407	\$40,167	\$32,354	\$29,623
Structure				
Child/Adult Ratio	.22 .30 .39	.20 .29 .40	.19 .34 .51	.31 .43 .56
Single Mother Families	.19 .27 .36	.22 .32 .44	.24 .32 .43	.27 .34 .45
Two-parent Families	.54 .66 .75	.46 .61 .71	.48 .60 .70	.46 .59 .66
Immigrant				
U.S. Citizens	.76 .85 .90	.74 .85 .89	.69 .82 .89	.67 .82 .89
English Spoken Well	.92 .97 .99	.90 .96 .98	.85 .93 .97	.82 .92 .96
Mobility				
Same Home in 1985	.76 .83 .88	.77 .85 .89	.78 .86 .90	.81 .87 .91
Education				
No High School	.07 .13 .22	.08 .14 .27	.13 .22 .35	.18 .29 .40
Crime				
Property Crime Rate	4	9.4 27 64	8 25 63	12 31 72
Violent Crime Rate	.6	2 4.7 15	2 6 16	3 9 20

Figure 4.24 Community Indicators by Geographic Area, Addresses of Child Maltreatment Reports, and Addresses of CYA Entries



The risk of entry into CYA was examined using Proportional hazards analyses with individual and community level variables in the 11 city area for which crime data could be obtained. A description of the 11 city sample restricted to 1 child per family can be found in Table 4.24.

Table 4.24 Frequencies and Odds Ratios for Restricted 11 City Sample (1 child per family)

	n	%	Odds Ratios for Incarceration
African American	8,523	22	2.73 [2.72 - 3.34]
Hispanic	12,343	32	1.10 [1.06 - 1.31]
Female	20,795	54	.09 [.07 - .13]
Services	9,396	25	1.46 [1.17 - 1.81]
Neglect	15,645	42	1.49 [1.22 - 1.82]
3+ Reports	11,636	30	1.77 [1.44 - 2.17]
Change Report Type	9,575	25	1.34 [1.07 - 1.66]*

* 95 % confidence intervals

Community variables and risk of entry: 11 cities. Census tract variables utilized in the following multivariate model with significant bivariate differences in CYA entry over time are presented in the following figures. Figures 4.25 and 4.26 show the failure rate (incarceration rate) by proportion of single mother families above 40 percent, and rate of violent crimes above 12 per 1,000 residents for all investigated maltreatment cases within the 11 city areas. A higher proportion of single mother families in a given census tract decreased the risk of entry slightly over time (Figure 4.25). Higher rates of violent crime in a given census tract increased the risk of entry into CYA (Figure 4.26).

Figure 4.25 Probability of Entry into CYA by Proportion Single Mother Families

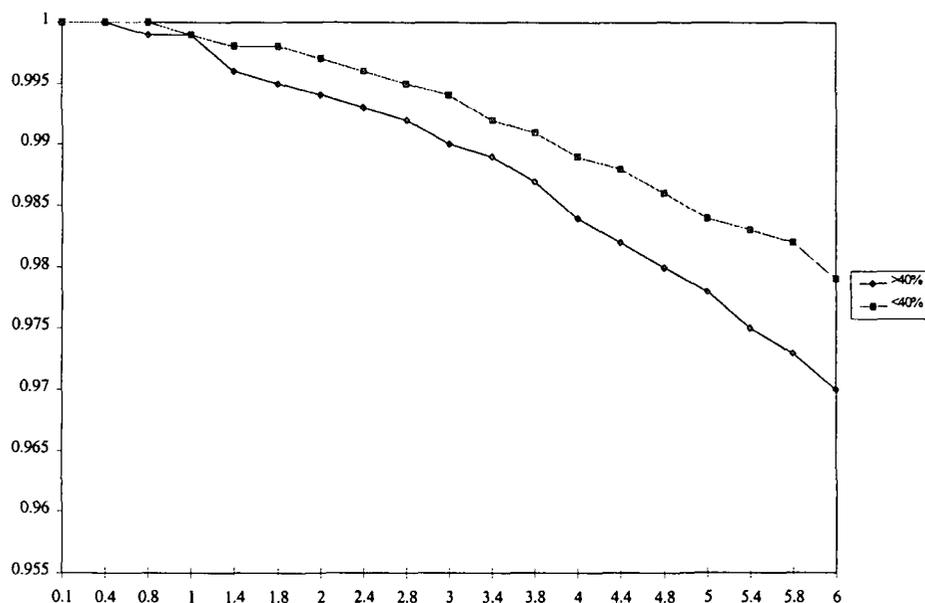
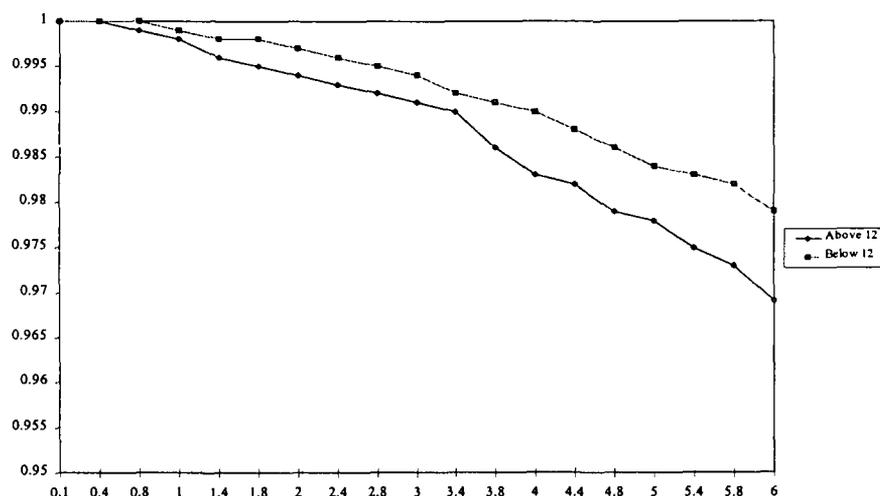


Figure 4.26 Probability of Entry into CYA by Violent Crime RateTable 4.25 Cumulative Probabilities of Failure (Incarceration) at 2,3,4,5, and 6 years: Community Variables

	<u>Months to CYA Entry</u>					Total	Failed	Censored
	24	36	48	60	72			
AFDC Households								
Under 20%	.003	.007	.01	.01	.02	19,018	235	98.76
Over 20 %	.006	.009	.017	.026	.03	5,064	106	97.91
Proportion Single Mother Families								
Under 40%	.003	.006	.01	.016	.02	18,287	236	98.73
Above 40%	.001	.002	.003	.003	.01	5,559	105	98.11
Proportion High School Drop Outs								
Under 30%	.004	.006	.01	.016	.02	19,229	247	98.72
Above 30%	.004	.009	.016	.02	.03	4,853	94	98.06
Violent Crime Rate								
Under 12 per 1,000	.003	.006	.01	.016	.02	18,469	233	98.74
Above 12 per 1,000	.006	.009	.017	.025	.03	5,613	108	98.08
Low Median Family Income								
Above \$20,000	.003	.007	.01	.017	.02	14,595	211	98.55
Below \$20,000	.004	.007	.01	.02	.022	9,357	130	98.63
Proportion Residents Still Living in Same Home after 5 Years (Mobility)								
Above 80 %	.004	.008	.01	.02	.025	12,681	204	98.42
Below 80 %	.004	.006	.009	.016	.02	11,060	137	98.78

The final urban model of incarceration after an investigated maltreatment report was additionally restricted to include only children born prior to 1982 and included 23,590 children; 312 of whom were incarcerated (Table 4.26). The model was almost identical to the county-wide model presented earlier with two important exceptions. In the urban model, children referred to services after the report investigation had a greater risk of entry into CYA but this was mediated by ethnicity. In other words, for Caucasian children who received Child Welfare Services their risk of entry to CYA was almost 30 percent higher than those without services, but for African American and Hispanic children services reduced the risk of entry into CYA. Taking into account the various interaction terms, Hispanic children investigated for maltreatment had the highest risk of incarceration. Using the same formula to estimate explained variance, this model also explains less than 3 percent of the risk of entry into CYA following a maltreatment report.

The same model was re-run adding significant community level variables. Four variables--violence rate above the median, high proportion of single mother families, lower median family income, and higher mobility were added. In addition, two interaction terms were significant and increased the risk of CYA entry: single motherhood and greater mobility; and lower income and mobility. Two interaction terms were significant and decreased the risk of incarceration: youth reported for maltreatment at an older age and living in a high violent crime region; and more than three reports and living in a neighborhood with greater mobility. A higher level of violent crime in a census tract increased the risk of incarceration by about 30 percent after adjusting for the interaction with age at time of report. The variance explained by adding the community variables increased by about 1 percent.

Table 4.26 Proportional Hazards Model-Incarceration in 11 Cities

Analysis of Maximum Likelihood Estimates $n = 23,590$
 312 incarcerated (1 child per family born 1974-1981)

Variable	Individual Model			Ecological Model			
	DF	Parameter Estimate	Pr> Chi-square	Risk Ratio	Parameter Estimate	Pr> Chi-square	Risk Ratio
Age at 1st Report Over 14	1	0.74	.01	2.11	.59	.05	1.80
Ethnicity							
African Amer.	1	0.42	.49	1.52	.47	.38	1.60
Hispanic	1	0.55	.32	1.74	-.13	.82	.88
Gender							
Male	1	2.01	.0001	7.50	1.79	.0001	6.01
Report Type							
Neglect	1	0.25	.04	1.28	.27	.02	1.31
Report Type Change							
Yes	1	0.55	.003	1.73	.28	.14	1.32
Over 3 Reports							
Yes	1	-0.31	.40	0.73	.02	.97	1.02
Services (CWS)							
Foster/ Other	1	0.29	.57	1.34	.42	.40	1.53
Median Family Income							
Below \$20,000	1				.14	.75	1.16
Mobility							
20% or more moved	1				-1.1	.01	.34
Single Mother Families							
More than 39%	1				-.33	.20	.72
Violent Crime Rate							
Above median	1				.45	.15	1.60
Interactions							
AFAM/ Age	1	0.36	.30	1.43	.96	.006	2.62
HISP/ Age	1	0.08	.83	1.10	.41	.24	1.51
AFAM/ CWS	1	-0.95	.008	.40	-1.33	.0002	0.26
HISP/ CWS	1	-0.94	.20	.39	-0.68	.33	0.50
AFAM/ Male	1	1.20	.04	3.31	1.01	.05	2.74
HISP/ Male	1	0.82	.13	2.28	1.46	.01	4.32
Change/ Number	1	-0.48	.06	0.62	-0.27	.29	0.76
Number/ Move	1				-0.50	.05	0.61
Income/ Move	1				.71	.04	2.04
Mobile/ Single Mom	1				.97	.002	2.68
Violent/ Age	1				-0.50	.05	0.61
Violent/ Income	1				-0.05	.89	0.95
Violent/ Mom	1				.45	.15	1.57

Time Interactions (5): CWS, Hisp/CWS, Number, Mobility, Income-- only mobility was near significance $p=.07$.

Violent versus Non-violent Offending

A total of 643 (55%) of the 1,167 county level cases came from the 11 cities for which violent and non-violent index crimes could be obtained. Table 4.26 displays those descriptive statistics which differed significantly ($p = .05$) by offense type. Caucasian youth were less frequently incarcerated for violent crimes than all other ethnic groups. Among this urban sample, there was no significant difference between gender, family size or single parent homes (not shown) or child welfare service history. A slightly lower percentage of the violent offender group were identified as needing specialized substance abuse counseling.

Table 4.27 Youth Incarcerated for Violent or Non-violent Offenses in 11 Cities

Variables	Violent Offense ($n = 322$)	Non-Violent ($n = 321$)
Age at 1st Petition	%	%
< 13 yrs	19	26
Ethnicity		
African American	43	31
Caucasian	9	20
Hispanic	39	40
Other	9	9
Male	92	93
3+ Siblings	54	50
Maltreatment Type		
Neglect	52	50
Physical Abuse	32	34
Sexual Abuse	15	14
Services	47	51
3 + Maltreatment Reports	44	47
Prior Incarceration	39	64
3+ Prior Petitions	38	61
Substance Abuse	23	28
S.E.D.	3	2

Ninety-two percent (or 595) of the urban maltreatment to CYA sample were successfully geocoded and matched to census tracts. Logistic regression was used to construct both an individual (Table 4.27) and community level model of violent offending. Because of the small numbers of children of Other ethnic groups in this sample and the rather heterogeneous nature of that ethnic category, they were deleted from the multivariate analysis resulting in a sample of 544 cases. Because only 18 children in the urban sample had prior SED identification, these data were not included in the logistic regression models [bivariate chi-square analyses did not indicate significant differences between violent and non-violent offending by SED status]. Table 4.28 compares the results of the two models. The model without community indicators--labeled the individual model -- (Likelihood Ratio Chi-Square = 70.65, 68DF, $p=.39$) fit the data relatively well. African American and Hispanic youth from single parent homes were more than two times more likely to be incarcerated for a violent offense. Caucasian youth who had received services were less likely to be incarcerated for a violent offense while African American and Hispanic youth who had received services were more likely to be incarcerated for a violent offense. Three of more prior sustained petitions or a history of prior incarceration lessened the likelihood of incarceration for a violent offense, but among youth with both these factors the likelihood of being a violent offender increased by over three times. However, a combination of a large number of sustained petitions and prior incarceration increased the likelihood of violent offending by over 3 times. The total model explained almost 17 percent of the variance. The sensitivity or proportion of youth incarcerated for a violent offense correctly classified by the model $Pr(\text{Classified Violent} | \text{Violent Offenders})=.96$ was quite high. The specificity, or

proportion of offenders not committing a violent offense as their primary act, Pr (Classified Not Violent | Non-violent Inmates) was only 17 percent.

Table 4.28 Logistic Regression: Incarceration for a Violent Offense (11 urban areas)

<u>Variable</u>	<u>n</u>	<u>Odds Ratios</u>
Ethnicity		
Caucasian		1.00
African American/ Hispanic	461	1.30
Family Structure		
Married or Other		1.00
Single Parent	381	1.40 n.s.
Report Reason		
Physical/ Sexual Abuse		1.00
Neglect	286	1.50 n.s.
Child Welfare Services		
No		1.00
Yes (includes foster placement)	153	.39 n.s.
Substance Abuse Counseling		
No		1.00
Yes	147	4.89
Number of Sustained Petitions		
Less than 3		1.00
3 or more	274	.32
Prior Incarceration Event		
No		1.00
Yes	284	.17
Interactions		
Ethnicity/ CWS	130	2.80 n.s.
Number Petitions/ Incarceration	201	3.35
Ethnicity/Single Parent	320	2.10 n.s.
Substance Use/ Single Parent	119	.54 n.s.
Substance Use/ Neglect	82	.40
Substance Use/ Incarc.	89	.64 n.s.
Substance Use/ Number Pet.	90	.58 n.s.
Neglect/ Single Parent	197	.50 n.s.
Neglect/ Incarceration	145	1.93 (p=.09)

n = 544; 279 violent

Likelihood Ratio Chi-Square 70.65, 68DF, (p=.39) Max Rescaled R^2 =.17

All variables are significant at .05 or above except those noted in parentheses.

The same variables in the individual model were included in a second model which added census tract level information. Only two census tract level variables added significantly to the model: a larger proportion of immigrants in a tract (as defined by a non-citizen percentage of 25 percent or more); and rates of violent crime above 12 per 1,000 residents. Higher levels of violent crime alone did not increase the likelihood that a youth was identified as a violent offender in the model. However, youth originally reported for neglect and youth receiving services beyond an investigation who also lived in areas with high levels of violent crime were about twice as likely to be identified as violent offenders in the model.

Residence in an immigrant neighborhood decreased the likelihood of having been incarcerated for a violent offense by over 60 percent, unless the youth had more than three sustained petitions, came from a single parent home, or received services beyond investigation. The likelihood ratio test indicates that the inclusion of the census tract variables resulted in a significant decrease in the -2 Log Likelihood ($675.25 - 655.44 = 19.8$, 4DF, $p = .005$). The Max-rescaled R^2 increased by 6 %, indicating the new model explained approximately 23 percent of the variance according to this measure. The sensitivity or proportion of youth incarcerated for a violent offense correctly classified by the model $\Pr(\text{Classified Violent} | \text{Violent Offenders}) = .94$ was quite high. The specificity, or proportion of offenders not committing a violent offense as their primary act, $\Pr(\text{Classified Not Violent} | \text{Non-violent Inmates})$ increased to 28 percent.

Table 4.29 Logistic Regression: Incarceration for a Violent Offense: Individual and Contextual Models

<u>Variable</u>	<u>n</u>	<u>Indiv. Ratios</u>	<u>Eco Ratios</u>
Ethnicity			
Caucasian		1.00	1.00
African American/ Hispanic	461	1.30	1.60
Family Structure			
Married or Other		1.00	1.00
Single Parent	381	1.40 n.s.	1.84
Report Reason			
Physical/ Sexual Abuse		1.00	1.00
Neglect	286	1.50 n.s.	1.14
Child Welfare Services			
No		1.00	1.00
Yes (includes foster placement)	153	.39 n.s.	.27 (p=.10)
Substance Abuse Counseling			
No		1.00	1.00
Yes	147	4.89	5.54
Number of Sustained Petitions			
Less than 3		1.00	1.00
3 or more	274	.32	.21
Prior Incarceration Event			
No		1.00	1.00
Yes	284	.17	.15
Violent Crime			
< 12 per 1,000			1.00
> 12 per 1,000	209		1.10
Proportion U.S. Citizens			
More than Median			1.00
Less than Median			.38
Interactions			
Ethnicity/ CWS	130	2.80 n.s.	2.72 n.s.
Number Petitions/ Incarceration	201	3.35	3.47
Ethnicity/Single Parent	320	2.10 n.s.	1.65 n.s.
Substance Use/ Single Parent	119	.54 n.s.	.60 n.s.
Substance Use/ Neglect	82	.40	.43 (p=.06)
Substance Use/ Incarc.	89	.64 n.s.	.57 n.s.
Substance Use/ Number Pet.	90	.58 n.s.	.60 n.s.
Neglect/ Single Parent	197	.50 n.s.	.49
Neglect/ Incarceration	145	1.93 (p=.09)	2.04 (p=.08)
Substance Use/ Violent Crime			.51 n.s.
CWS/ Violent Crime			2.22 (p=.07)
Neglect/ Violent Crime			1.82 n.s.
Single Parent/ Violent Crime			.42
Citizens / Single Parent			1.53 n.s.
Citizens / Number Pet.			2.20
Citizens/ CWS			1.71 n.s.

n=544; 279 violent

Likelihood Ratio Chi-Square 70.65, 68DF, (p=.39) Max Rescaled R²=.17 206,192 DF,(p=.23) R²=.23

All variables are significant at .05 or above except those noted in parentheses.

Placing the parameter estimates of the dummy variables into the final logit model equation can provide an interesting mock profile of the likelihood of incarceration for a violent offense for various populations. The model equation can be written as follows:

$$\begin{aligned} \text{logit (Pr viol)} = & .50 + .46(\text{Ethnicity}) + .61(\text{Single Parent}) - 1.31 (\text{Services}) - 1.57 (\text{Sustained} \\ & \text{Petitions}) - 1.89 (\text{Incarc.}) + 1.71 (\text{User}) + .13(\text{Neglect}) - .97 (\text{Immigrant}) + .09 (\text{Violent}) + \\ & .91(\text{Eth/CWS}) + 1.24(\text{Incarc./ Petitions}) + .42(\text{Immigrant/ Parent}) - .84(\text{User/} \\ & \text{Neglect}) + .71(\text{Neglect/Incarc.}) - .71(\text{Neglect/Single}) - .51 (\text{User/Parent}) + .50(\text{Ethnicity/ Parent}) \\ & - .57(\text{User/Incarc.}) - .58 (\text{User/ Petitions}) + .60 (\text{Violent/ Neglect}) - .88(\text{Violent/ Parent}) + .80 \\ & (\text{Violent /CWS}) - .66(\text{Violent/ User}) + .54 (\text{Immig./ Petitions}) + .54 (\text{Immig/ CWS}). \end{aligned}$$

Analyses of census variables indicate that a higher proportion of African American residents is positively correlated with higher rates of violent crime and from previous analyses we know that African American youth are more likely to be reported for neglect and likely to receive services. Bivariate analyses revealed that African American incarcerated youth were more likely to be from a single parent home and less likely to have numerous previous sustained petitions. Therefore a profile typical of an African American child with an investigated maltreatment report who entered CYA and did not have a substance abuse problem might look like the following:

$$\begin{aligned} \text{log (Pr viol)} = & .50 + [.46 (\text{Eth}) + -1.31 (\text{CWS}) + .91 (\text{Eth/CWS}) + .13(\text{Neglect}) + .61 \\ & (\text{Parent}) + .50(\text{Eth/Parent}) - .71(\text{Neglect/Parent})] = 1.09 \\ & + [+ .09(\text{violent}) + .60(\text{Violent/Neglect}) + .80 (\text{Violent/CWS}) + 1.86 + (\text{Violent/Parent})] = 4.44. \end{aligned}$$

By exponentiating the results from the above formula without the ecological variables, the results show that an African American child with this profile has an odds ratio of being incarcerated for a violent offense 2.6 times that of youth with a different profile. If one adds in the contribution

of living in a census tract with high violent crime the odds ratio increases by almost 40 times. The effect for an African American youth ever having lived in such a neighborhood is dramatic.

Census tracts with a large proportion of Hispanic residents had lower correlations with family unemployment, AFDC households and single mother families. The correlation with child poverty was $r = .82$, suggesting that although AFDC rates were lower, the poverty level was still quite high. These areas were also negatively correlated with citizenship and English proficiency. Such a profile may suggest areas characterized by “working poor” families with relatively high proportions of more recent immigrants. Bivariate analyses of Hispanic children with maltreatment reports suggest family and contextual environment similar to the profile just described. These youth were slightly more likely to have had three or more sustained petitions, much more likely to be reported for physical abuse, and less likely to have received child welfare services beyond an investigation. An equation modeling a profile of an incarcerated Hispanic youth with an investigated maltreatment report might look like:

$$\text{logit (Pr viol)} = .50 + [.46 (\text{Eth}) - 1.57 (\text{petitions}) - 1.89 (\text{Incarc}) + 1.24 (\text{Pet/Incarc})] = -1.26 + [-.97 (\text{Immig}) + .78 (\text{Immig/ Pet})] = -1.45$$

This formula indicates that for a Hispanic youth not living in a high violence area, the typical profile does not change with the addition of census level variables. This suggests that the impact of community level variables may be dependent upon the combination of individual level risk factors.



Statewide Foster Care to CYA

The statewide foster care data present in the California Children's Services Archive allowed us to examine entries into CYA according to foster care entry cohorts as well as by child welfare and probation supervised foster and group care. The entry cohorts include children still in care in 1988; and children who entered care in 1988 or later. The first group is biased toward children who remain in care for a long time because it excludes those children who exited care prior to 1988. Therefore only descriptive and bivariate statistics are provided for this group. For children over the age of seven who entered in or after 1988, we were able to follow their entries and exits from care as well as potential transitions to probation supervised care prior to entry into CYA.

Similar to the preceding analyses, we cannot rule out the possibility that the cases in the following analyses had prior contact with the child welfare system. Previous prospective analyses of re-entry into foster placement indicate that approximately 20 to 25 percent of children have at least two spells in foster care (Berrick, et al., 1998; Needell et al. 1996). A retrospective analysis of children over age seven in 1995 found that about 20 percent had prior placements as young children (Jonson-Reid, 1997). Analyses of adolescents exiting from care indicate that 70 percent enter after the age of 12 years (Courtney & Barth, 1996). It seems likely, therefore, that the following results include complete placement histories for the majority of the sample.

Movement from Child Welfare Supervised Care to Probation Placement

Almost three percent of the children who began their foster care careers after 1988 within the child welfare system later re-entered out-of-home placement under the

Figure 4.27 Rate of Entry into Probation Supervised Foster Care per 1,000 Children with a Previous Spell in Child Welfare Foster Care: Age by Gender

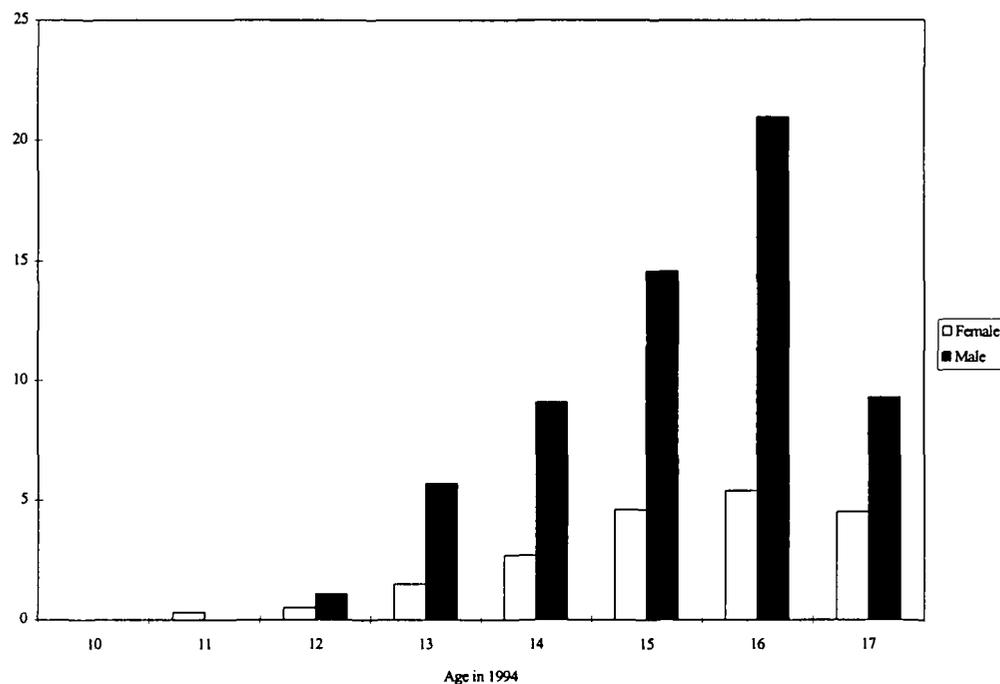


Table 4.30 Youth Entering Probation Foster Care after Child Welfare Foster Care: Age and Gender

	10	11	12	13	14	15	16	17	TTL
Female	0	1	2	7	13	22	24	18	87
Male	0	0	4	21	32	42	52	19	170
Total	0	1	6	28	45	64	76	37	257

Rate of Entry into Probation Foster Care Per 1,000 Youth in Child Welfare Foster Care

	10	11	12	13	14	15	16	17
Female	0	0.3	0.5	1.5	2.7	4.6	5.4	4.5
Male	0	0	1.1	5.7	9.1	14.6	21.0	9.3

Figure 4.28 Rate of Entry into Probation Supervised Foster Care per 1,000 Children with a Previous Spell in Child Welfare Foster Care: Age by Ethnicity

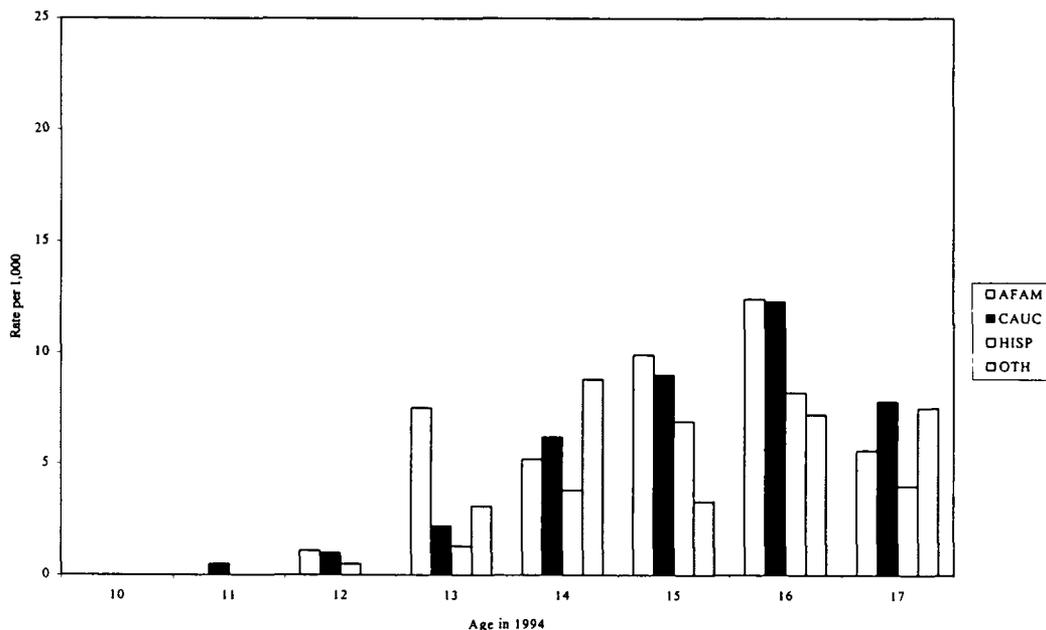


Table 4.31 Youth Entering Probation Foster Care after Child Welfare Foster Care: Age by Ethnicity

	10	11	12	13	14	15	16	17	TTL
AFAM	0	0	2	16	11	19	20	8	76
CAUC	0	1	3	8	22	29	38	20	121
HISP	0	0	1	3	9	15	16	7	51
OTH	0	0	0	1	3	1	2	2	9
TTL	0	1	6	28	45	64	76	37	257

Rate of Entry into Probation Foster Care Per 1,000 Youth in Child Welfare Foster Care

	10	11	12	13	14	15	16	17
AFAM	0	0	1.1	7.5	5.2	9.9	12.4	5.6
CAUC	0	0.5	1	2.2	6.2	9.0	12.3	7.8
HISP	0	0	0.5	1.3	3.8	6.9	8.2	4.0
OTH	0.	0	0	3.1	8.8	3.3	7.2	7.5

supervision of juvenile probation. Figures 4.27 and 4.28 above present the rate of entry into probation care according to ethnicity, gender and age in 1994.

Males re-enter care as probation supervised cases at two to three times the rate of females across age groups, with entry rates peaking at sixteen for both males (2.1%) and females (.54%). African American and Caucasian youth have similar rates of entry into probation supervised care with exceptions among 13 year olds; 13 year old African Americans had more than three times the rate of entry to probation foster care as Caucasian youth. Caucasian youth who were seventeen in 1994 had a slightly higher rate of entry than African American youth although the sample sizes caution against over-interpretation. Hispanic children had rates of entry into probation care about one-third lower than African American or Caucasian youth. Children of Other ethnic groups generally had similar or higher rates of entry to probation care than Hispanic youth except among fifteen year olds.

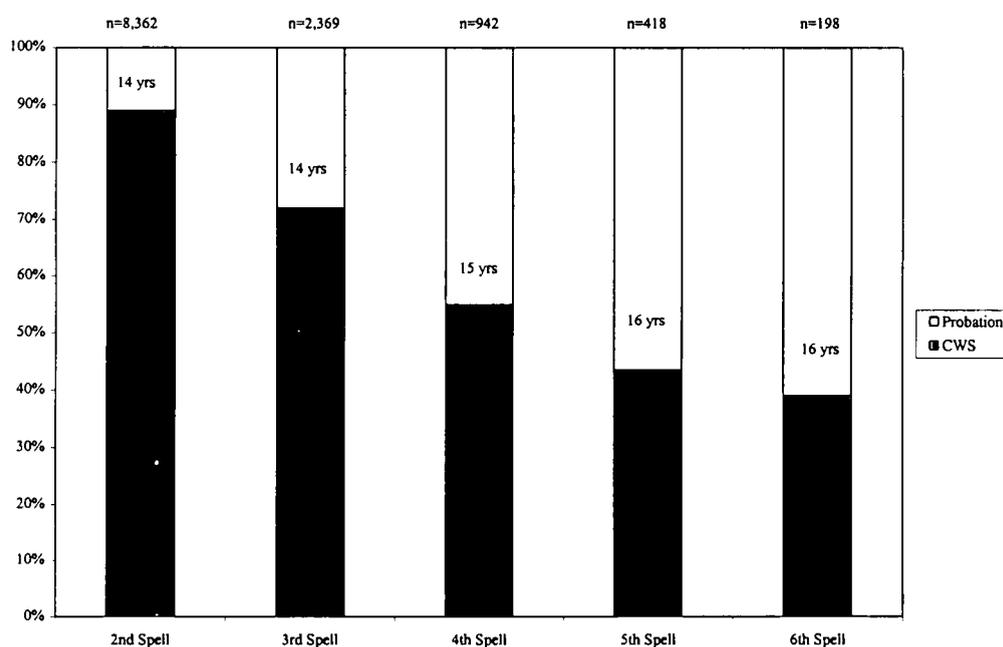
Table 4.32 below shows the percentage of case characteristics among youth who re-enter out of home placement under probation supervision compared to those who have only child welfare supervised foster care experiences. Generally children who re-entered placement as probation cases were older at the time of their initial child welfare supervised placement experience. African Americans were more prevalent among the cases which transitioned to probation as were cases with first placements in group care settings. Probation supervised cases were substantially less likely to have been placed into their first foster setting due to sexual abuse.

Table 4.32 Transition to Probation Foster Care: First Placement Supervised by Child Welfare

	Change to Probation (%) n=1,964	No Change (%) n=75,025
Age at 1st Placement		
7 to 9 yrs	6.9	22.2
10 to 12 yrs	35.7	29.1
13 yrs or older	57.4	48.8
Ethnicity		
AFAM	31	23.5
CAUC	44	43.6
HISP	21	28.7
OTH	4	4.2
Gender		
Female	33.6	60.1
1st Removal Reason		
Neglect	52	56
Physical	19.4	19
Sexual	6.7	15.7
Other	17.4	8.9
Missing	4.5	0.4
Primary Placement		
Foster Home	36	39.3
Group Home	33.8	15.1
Kinship Home	19	35.3

Figure 4.29 demonstrates that the likelihood of having a placement experience supervised by probation increases as the number of re-entries into foster care increase. While probation cases comprise only about ten percent of the children having at least two spells in foster care, over 60 percent of cases with six or more spells were being supervised by probation in the sixth spell. The median age at placement indicates that most of the transition to probation placement occurs during the early high school years.

Figure 4.29 Percent Supervising Agency by Spell Number and Median Age at Placement: Entered Care 1990 to 1995



The following figures examine re-entry into probation foster care by age at first child welfare placement, reason for placement, and primary placement type. Children first placed between the ages of 13 and 15 were more likely to be supervised by probation in later spells (see Figure 4.30, 4.31 & 4.32). Children placed due to sexual abuse were

Figure 4.30 Percent of Foster Placements Supervised by Probation: Age at First Placement by Spell

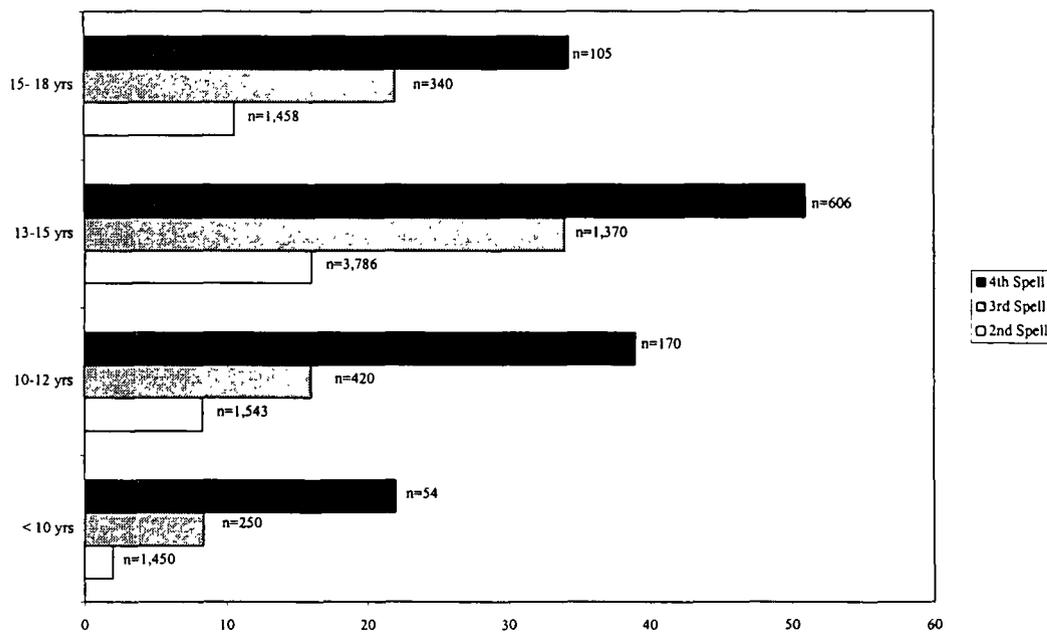


Figure 4.31 Percent of Foster Placements Supervised by Probation: Removal Reason by Spell

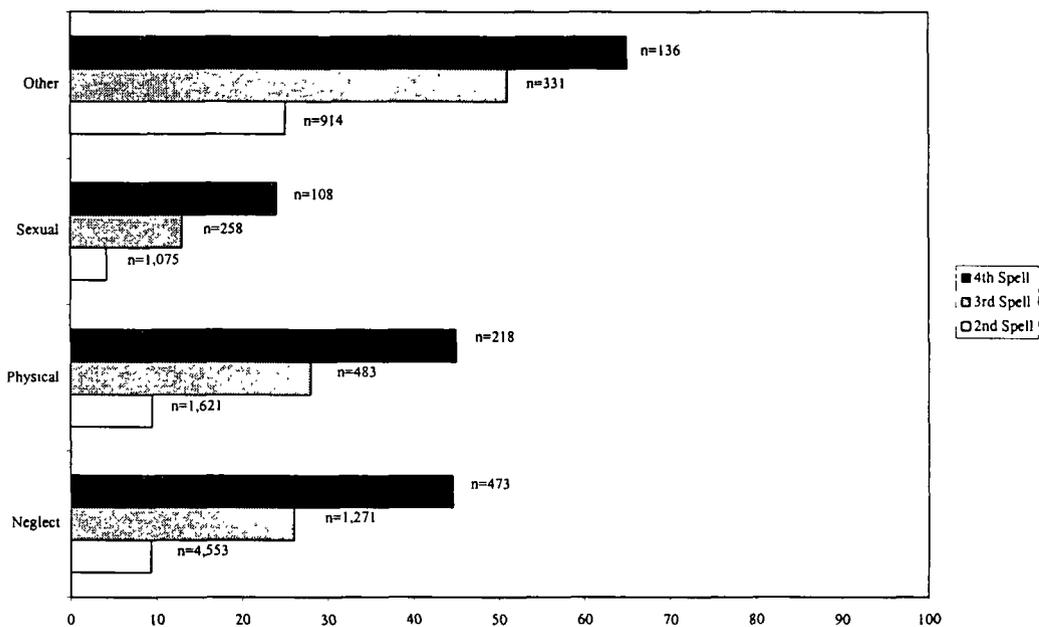
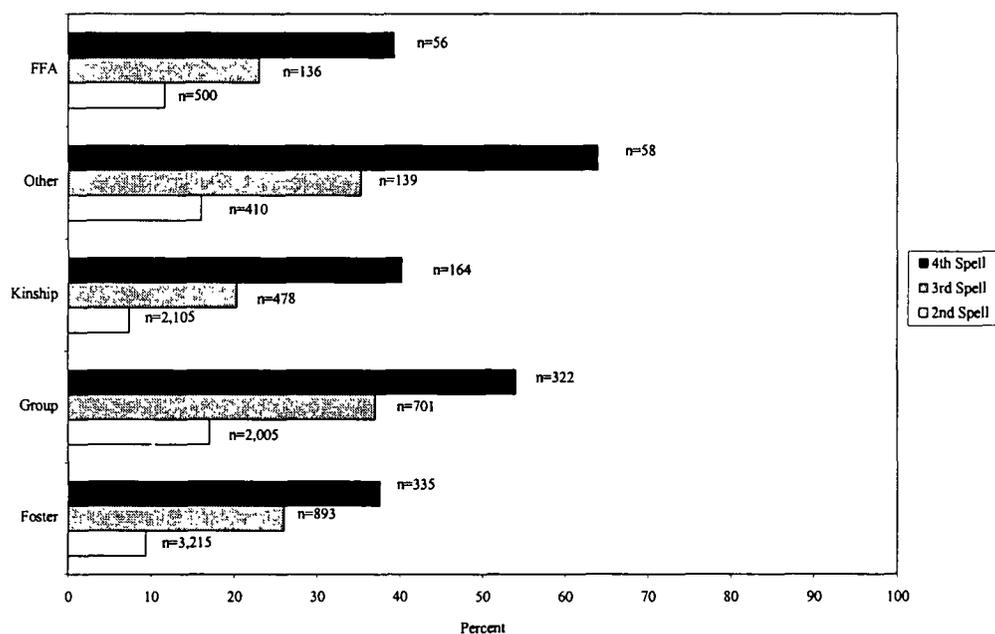


Figure 4.32 Percent of Foster Placements Supervised by Probation: Placement Type by Spell



least likely to later re-enter care as a probation case, while the proportions of youth placed for physical abuse and neglect who later became probation cases were very similar. The proportion of children placed for other reasons who were later probation cases was much higher. This group, however, is relatively small and includes voluntary relinquishments and other reasons which may be more indicative of behavior problems prior to placement (see Figure 4.31). The proportion of youth supervised by probation in later spells is similar among children first placed in foster homes, with Kin or in FFAs. Children placed first in group homes or other placements were much more likely to be supervised by probation in subsequent spells (see Figure 4.32).

Risk of probation supervision. The simple relationships child and placement characteristics have to the timing of the transition to probation supervision are considered

next. Characteristics significantly associated with re-entry under probation supervision following an exit from a first spell in child welfare foster care are presented in the following figures. Figures 4.33-4.40 show the failure rate (probation entry) by age, ethnicity, gender, removal reason, primary placement type, number of moves in first placement, first exit reason, and number of spells. Similar to the analyses of children with maltreatment reports, children aged 12 to 14 at the time of first placement had the highest overall rate of probation placement—just exceeding six percent (see Figure 4.33). African American and children of Other ethnic groups had the highest rate of probation supervision over time (see Figure 4.34). Children placed for Other reasons had the highest rate of later probation placement, but this group includes a diverse range of placement reasons including voluntary relinquishment that are probably indicative of prior behavioral problems. Children reported for neglect and physical abuse had similar rates of transition to probation (see Figure 4.35). Not surprisingly males had higher rates of re-entry to probation foster care than females (see Figure 4.36). Children initially placed in group or other placements had the highest failure rates, while children placed in kinship care had the lowest rate of transition to probation (see Figure 4.37).

Once placed there was an increase in the likelihood of later probation placement among children who moved four or more times during their first spell—about five percent higher over time than children who had fewer moves (see Figure 4.38). Among exit reasons from a first spell in child welfare supervised placement, nearly half of the incarcerated group transitioned to probation foster care. The second most likely group to enter probation care was classified as runaway at the end of the first spell. The line for

emancipating youth cannot be seen because there was only one entry from this group. This latter group, however, is also older at exit and therefore had little opportunity to enter out-of-home care again (see Figure 4.39). Similar to those children who experienced several placements in the first spell, those children who experienced three or more spells in foster care were much more likely to enter probation care—a difference of approximately thirty percent (see Figure 4.40).

Figure 4.33 Probability of Re-entry to Probation Supervised Foster Care by Age at First CWS Placement

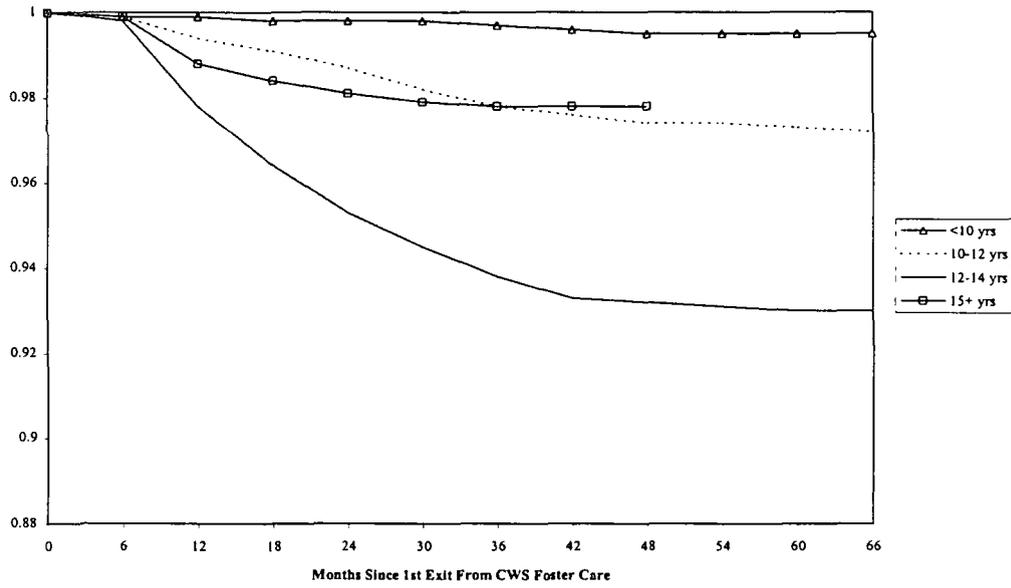


Figure 4.34 Probability of Re-entry to Probation Supervised Foster Care by Ethnicity

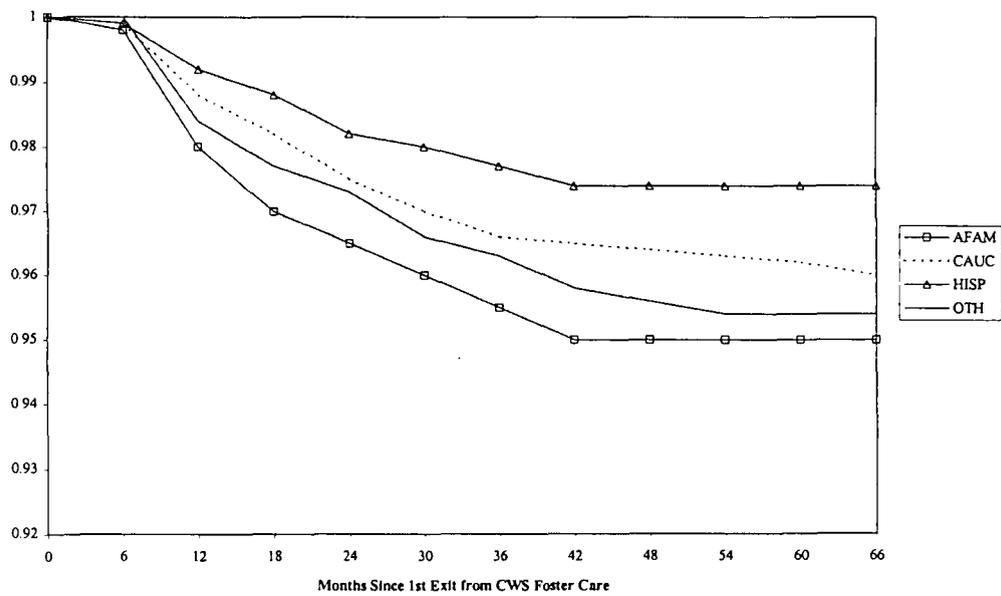


Figure 4.35 Probability of Re-entry to Probation Supervised Foster Care by First Removal Reason

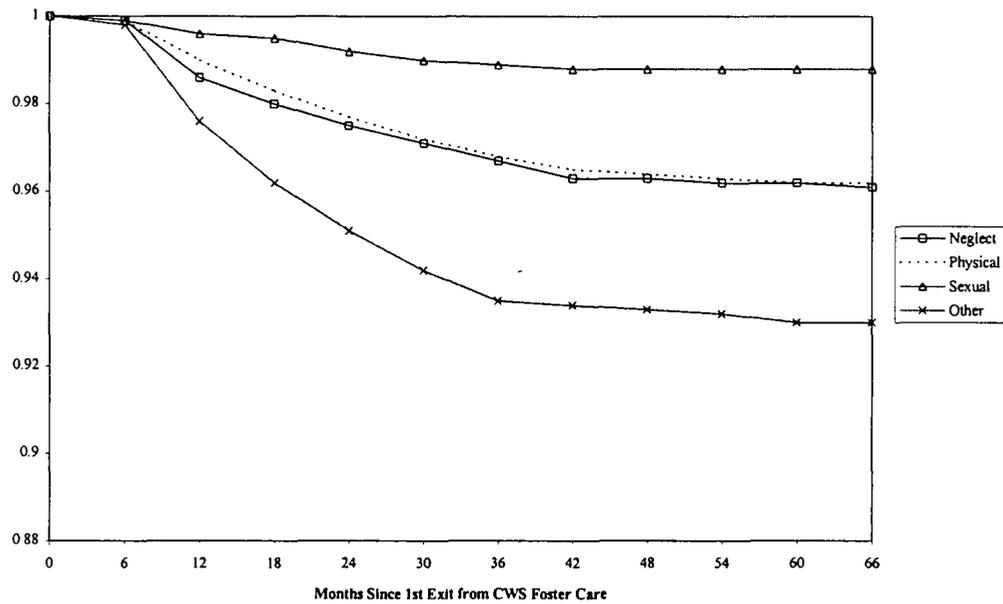


Figure 4.36 Probability of Re-entry to Probation Supervised Foster Care by Gender

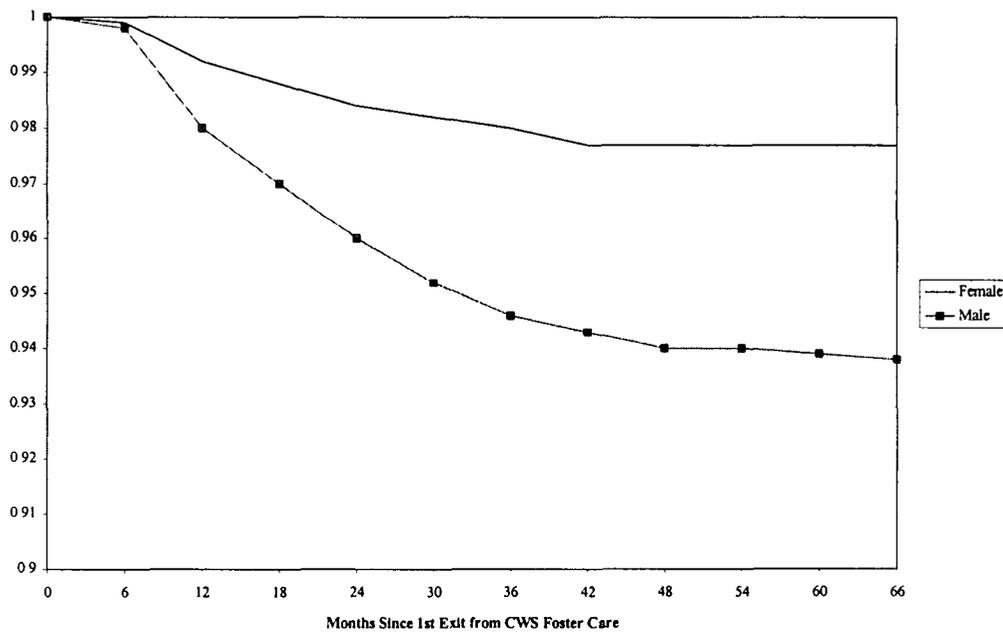


Figure 4.37 Probability of Re-entry to Probation Supervised Foster Care by Placement Type

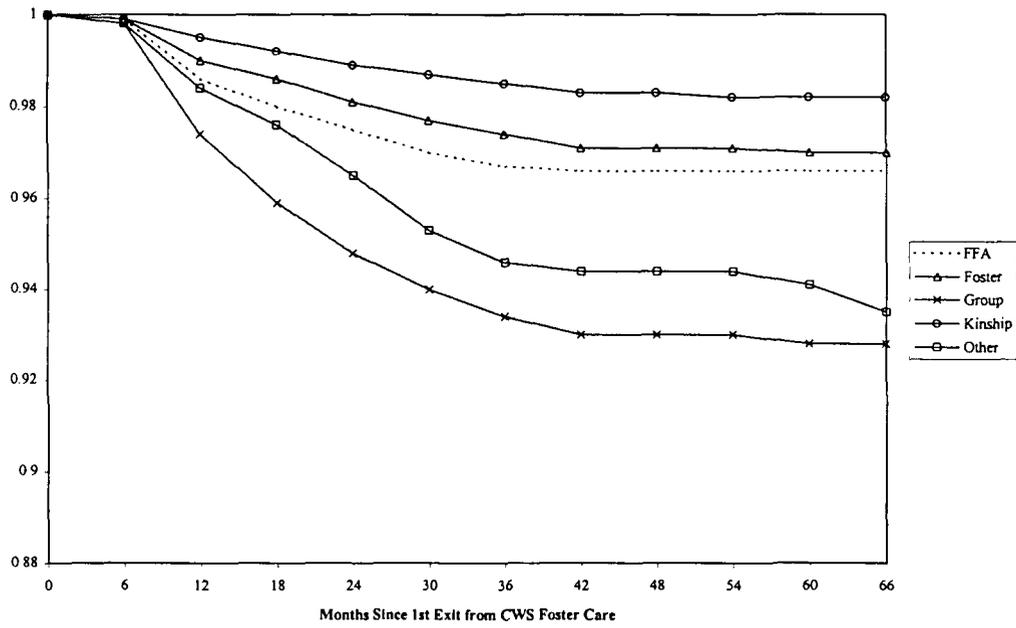


Figure 4.38 Probability of Re-entry to Probation Supervised Foster Care by Number of Homes in the First Spell in CWS Foster Care

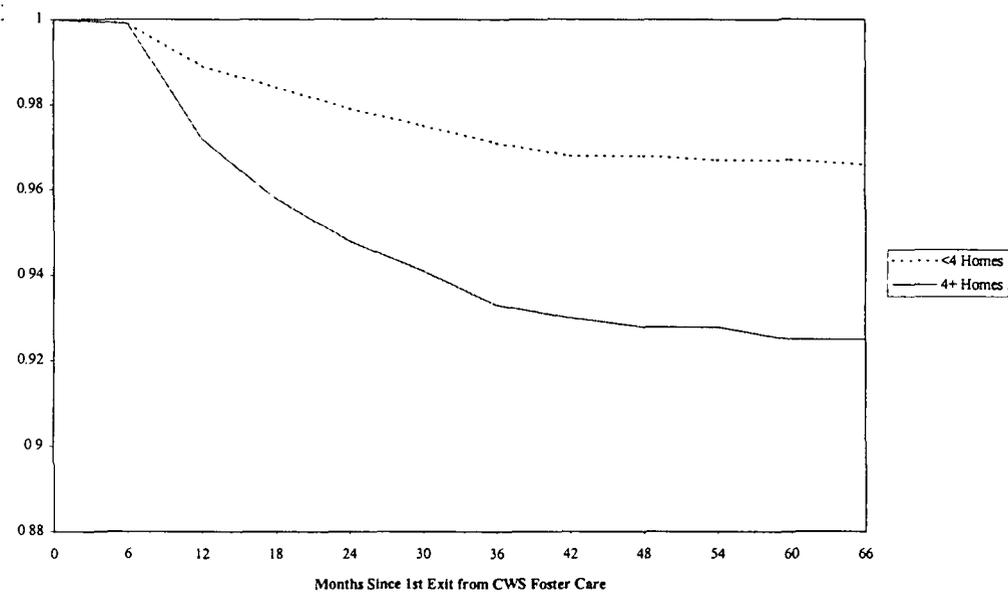


Figure 4.39 Probability of Re-entry to Probation Supervised Foster Care by Exit Reason from CWS Foster Care

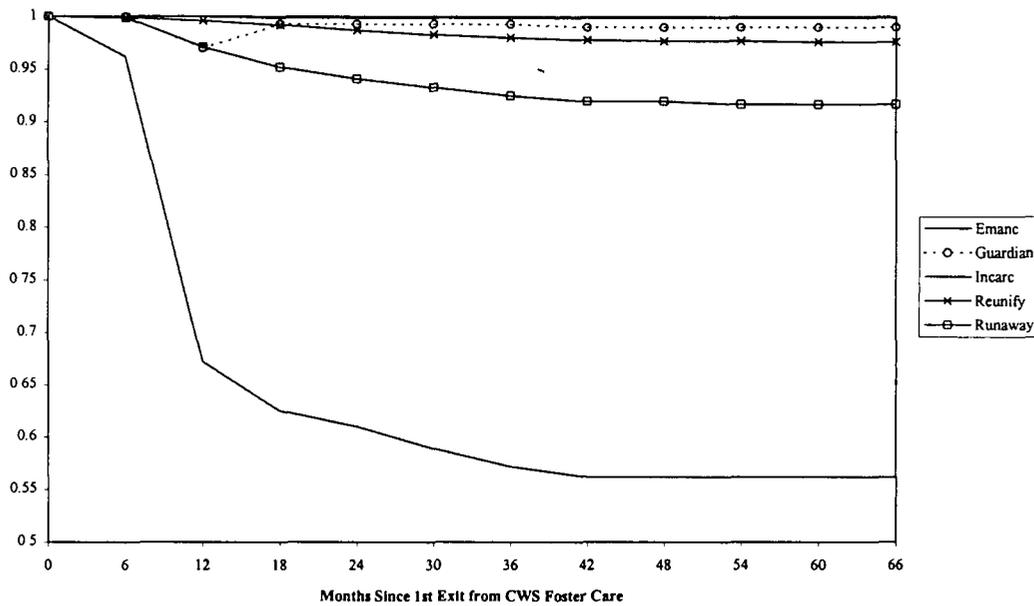


Figure 4.40 Probability of Re-entry to Probation Supervised Foster Care by Number of Spells

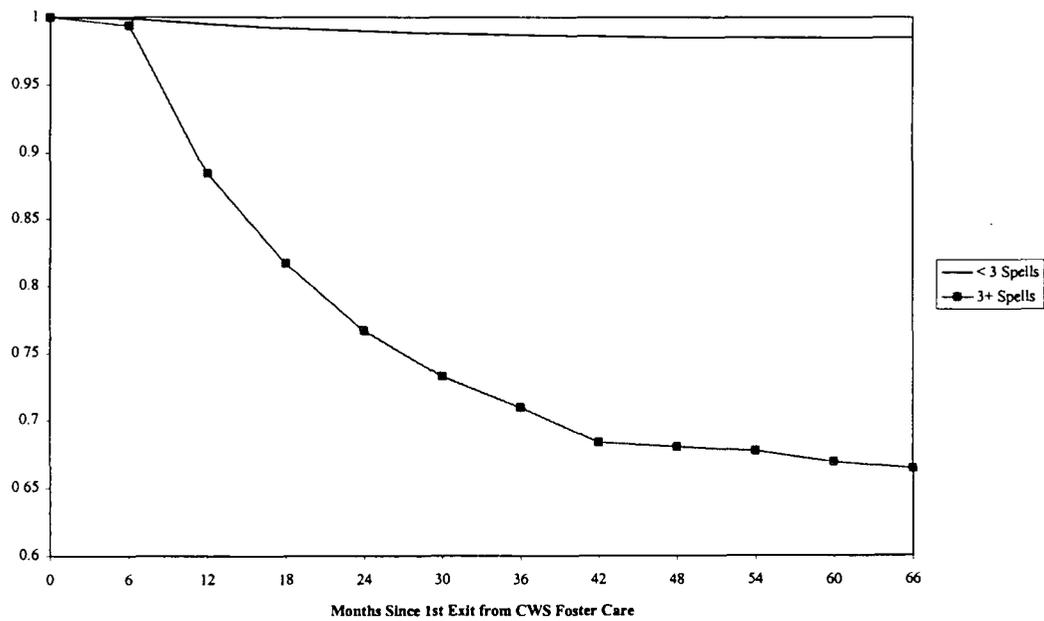


Table 4.33 Cumulative Probabilites of Failure (Probation) at 2,3,4, and 5 years

	Months to CYA Entry				Total	Failed	Censored
	24	36	48	60			
Age at First Entry							
7-10 years	.002	.003	.005	.005	7,282	32	99.6
10-12 years	.014	.023	.026	.028	6,146	150	97.6
12-14 years	.043	.057	.063	.064	11,903	689	94.2
15+ years	.017	.021	.021	n.a.	8,598	158	98.2
Ethnicity							
African Am	.032	.043	.048	.048	6,469	285	95.8
Caucasian	.022	.031	.034	.035	14,489	457	96.9
Hispanic	.016	.022	.025	.025	10,457	235	97.8
Other	.023	.032	.038	.041	1,485	52	96.6
Gender							
Female	.014	.018	.020	.021	20,931	374	98.2
Male	.036	.050	.056	.057	12,998	655	95.0
Removal reason							
Neglect	.023	.031	.035	.036	17,565	548	96.9
Physical	.021	.029	.033	.034	3,408	200	94.1
Sexual	.008	.011	.012	.013	7,275	218	97.0
Other	.045	.061	.064	.066	5,657	63	98.9
Placement Type							
FFA	.025	.033	.036	.036	1,946	61	96.9
Foster	.019	.026	.029	.030	13,478	352	97.4
Group	.052	.066	.072	.075	5,887	382	93.5
Kin	.010	.014	.017	.018	11,368	170	98.5
Other	.033	.050	.053	.061	1,249	63	94.9

Table 4.33 Cumulative Probabilites of Failure (Probation) at 2,3,4, and 5 years (Cont'd)

	24	36	48	60	Total	Failed	Censored
Number of Moves in First Spell							
< 4 Homes	.020	.027	.030	.031	30,215	819	97.3
4+ Homes	.048	.064	.068	.072	3,714	210	94.3
Exit Reason from First Spell							
Emancipation	.0005	.0005	.0005	n.a.	2,700	1	99.9
Guardianship	.005	.005	.007	.007	808	5	99.4
Incarceration	.40	.42	.43	.43	496	206	58.5
Reunified	.012	.018	.022	.023	25,550	509	98.0
Runaway	.057	.074	.079	.081	4,347	308	92.9
Number of Spells							
< 3 Spells	.008	.012	.013	.013	31,773	366	98.8
3+ Spells	.22	.28	.31	.32	2,156	663	69.2

A proportional hazards model was conducted to further examine risk of re-entry into care as a probation supervised placement. The final model had a $-2 \log$ Likelihood of 665.06, 21 DF ($p=.0001$) which indicated that the variables were important in understanding the risk of incarceration controlling for time of exit from first spell and time at risk. Although the predictive nature of the model improved over models of incarceration, it still explained little of the event (see Table 4.34).

Children between the ages of 12 and 14 at time of first placement, males, children with more than 4 placements in their first spell and children with three or more spells in care were all at greater risk of re-entering care under the supervision of probation.

Table 4.34 Proportional Hazards Model: Risk of Re-Entry to Probation Supervision

$n = 15,384$ 209 probation cases (1 child per family who exited from a 1st CWS Spell)
Analysis of Maximum Likelihood Estimates

Variable	DF	Parameter Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square	Risk Ratio
Age at 1st Report						
12 to 14	1	.95	.18	29.11	.0001	2.58
<12 or >14						
Ethnicity						
African Amer	1	.10	.17	.32	.57	1.10
Hispanic	1	.07	.17	.13	.72	1.10
Caucasian						
Gender						
Male	1	1.11	.16	48.26	.0001	3.06
Female						
Report Type						
Sexual Abuse	1	.22	.85	.06	.80	1.24
Physical Abuse	1	-.41	.53	.59	.44	.66
Neglect						
Reunified After 1st Spell						
Yes	1	-.18	.34	.28	.60	.84
Other exit						
Number of Placements in 1st Spell (Spells)						
4+ homes	1	2.30	.79	8.50	.004	9.99
< 4 homes						
Primary Placement in 1st Spell						
Kin/Foster	1	-.30	.15	3.68	.05	.74
Group Care						
Number of Spells (Num)						
3+ Spells	1	2.56	.35	53.09	.0001	12.94
< 3 Spells						
Time in 1st Spell (Time)						
18 + Months	1	-1.13	.45	6.24	.01	.32
< 18 months						
Interactions						
Male/Time	1	.77	.43	3.19	.07	2.16
Age/Num.	1	-.38	.38	.99	.32	0.68
Reun/Time	1	.38	.40	.88	.35	1.45
Plcd/Num	1	.45	.48	.87	.35	1.56
Phys/Spells	1	.63	.35	3.37	.07	1.88
Sex/Spells	1	.72	.52	1.88	.17	2.05
Reun/Spells	1	.53	.37	2.08	.15	1.71
Time Varying						
Physical Ab	1	.006	.02	.12	.73	1.01
Sexual Ab	1	-.036	.03	1.25	.26	.96
Number	1	-.09	.03	9.42	.002	.90

-2 Log Likelihood χ^2 665.06, 21DF, p =.0001

Despite the relatively low predictive power of the overall model, the risk ratios for having four or more placements in the first spell ($rr=9.99$) and three or more spells in care ($rr=12.94$) are sufficiently high to suggest these factors would remain significant even with the addition of other more powerful predictive variables. Ethnicity was not significant in the multivariate model and the significance of removal reason varied according to the number of spells in care a given child experienced. Placement in a foster or kinship care home during the first spell was associated with a lower risk of entry to probation care as compared to those placed in group homes during their first spell in care.

From Foster and Group Care to CYA

As shown in Chapter 3, the pathway from foster placement to CYA in the California Children's Services Archive (CCSA) entails five distinct sample groups and two entry cohorts. Among cases who entered care prior to 1988 there were two groups: children with child welfare placements only and children with child welfare and probation supervised foster care experiences. Among children entering care in 1988 or later there are three groups present in the CCSA: children experiencing only child welfare supervised foster care, children with both CWS and probation placements and youth with probation placements only. The birth data are the only statistics presented which include all the sample groups.

Birth data. The age of the child's mother at time of birth and gestational period were compared across all placement sample groups. There was little difference in gestational age across placement configurations by CYA status. The age of the birth mother, however, differed substantially between CYA and non-CYA cases. The

proportion of youth born to teen mothers was between five and thirteen percent higher among CYA cases depending upon the placing agency configuration (see Table 4.34).

Table 4.35 Percent Birth Characteristics by Supervising Agency and CYA Status

	CWS Only No CYA n=52,016	CWS Only CYA n=240	Prob Only No CYA n=11,683	Prob Only CYA n=1,508	CWS/Prob No CYA n=1,146	CWS/Prob CYA n=156
Teen Mother						
< 18 yrs	15	28	12.3	17.2	27	38.5
Gestat						
<9 mo	12.1	10.7	9.1	8.7	9	7.8

Entry Cohort Prior to 1988

Figures 4.42 and 4.43 compare the percentage of case characteristics of children still in care in 1988 among those who entered CYA as opposed to those children with no CYA entry. The child welfare only and the child welfare/probation cases are dominated by children who entered care prior to age 11 regardless of CYA status. Over time, however, children entering between the ages of 10 and 14 were most at risk for entry into CYA (because the group transitioning to probation was so small-only select survival curves for the CWS only cases are displayed). The exception was among young children who re-entered under probation supervision prior to CYA, but this is largely an artifact of the later time periods covered by probation data. Children in this biased cohort are more likely to have had longer and numerous spells in care, but even among this group increased movement in and out of care (3 or more spells) significantly increased the risk of CYA entry (see Figure 4.42).

Figure 4.41 CWS Entry Prior to 1988: Probability of Entry into CYA by Age at First Placement

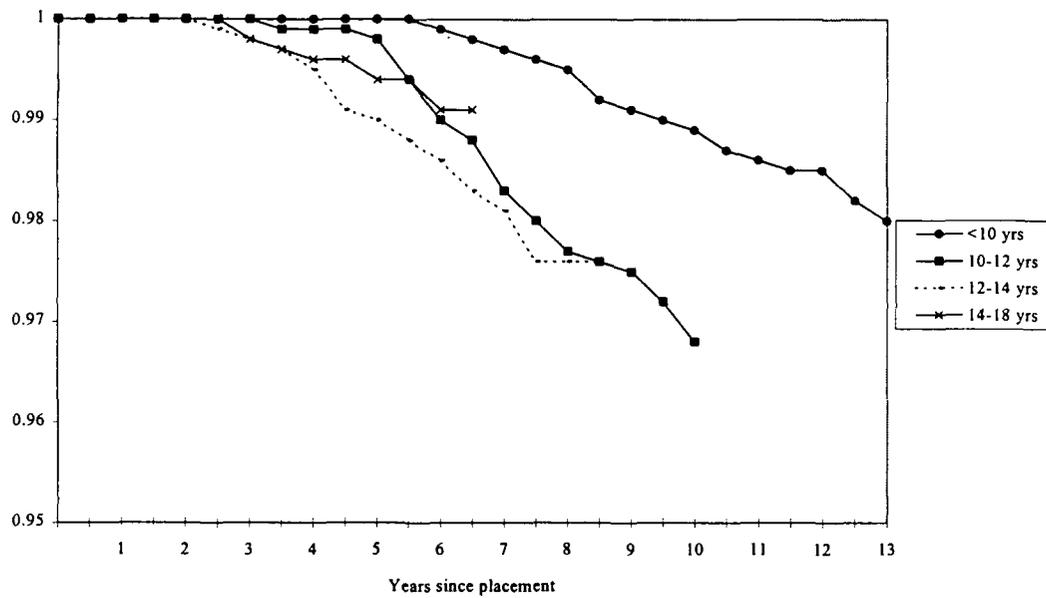


Figure 4.42 CWS Entry Prior to 1988: Probability of Entry into CYA by Number of Spells in Care

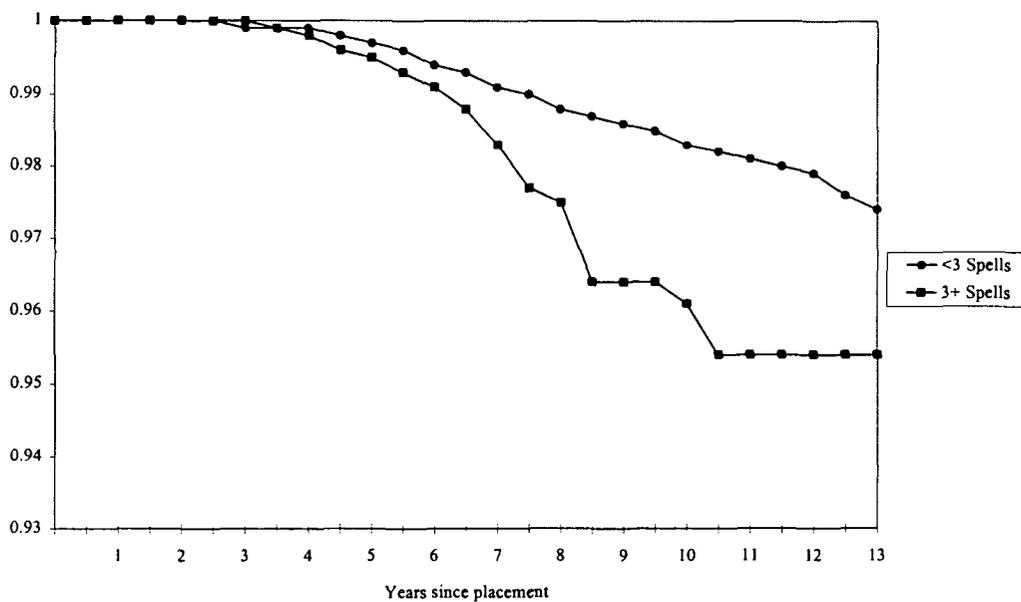


Figure 4.43 CWS Entry Prior to 1988: Percent CYA Status by Ethnicity

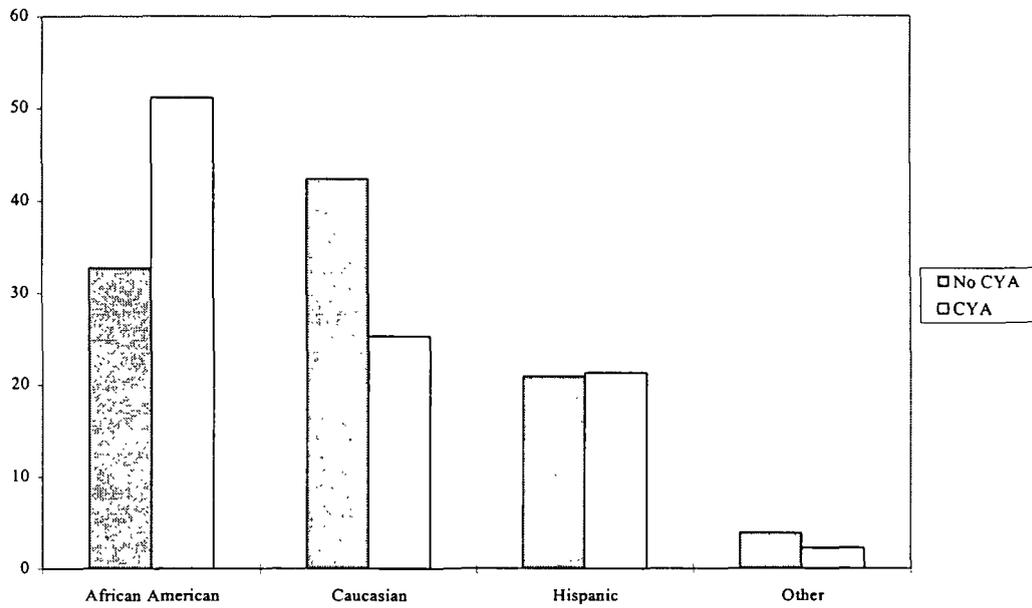


Figure 4.44 CWS and Probation, Entry Prior to 1988: Percent CYA Status by Ethnicity

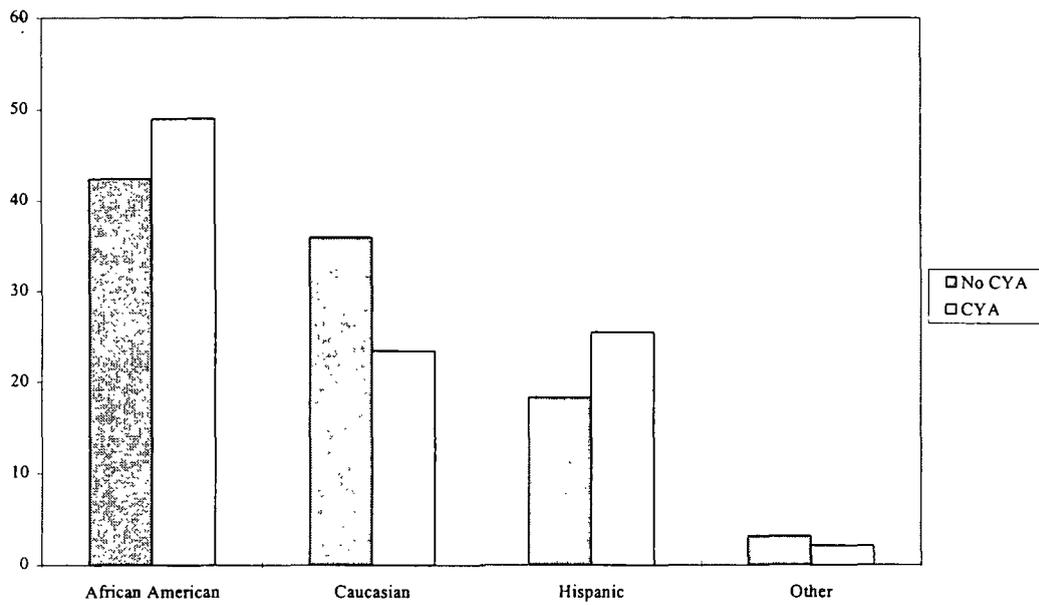


Figure 4.45 CWS Entry Prior to 1988 and Later Entry into CYA: Primary Placement Type by Exit Reason from First Spell in Foster Care

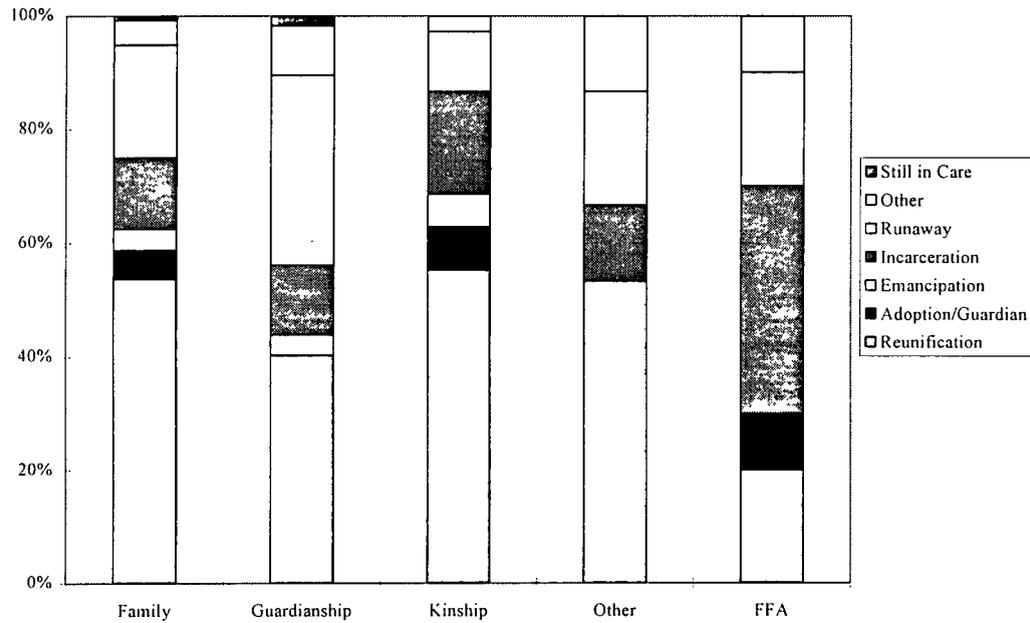
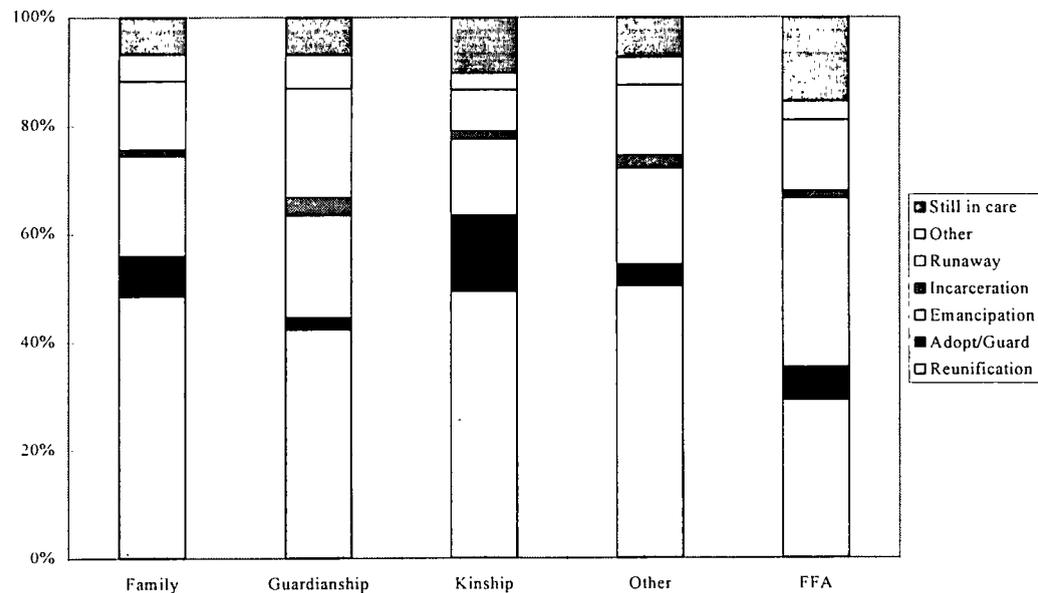


Figure 4.46 CWS Entry Prior to 1988 and No Later Entry into CYA: Primary Placement Type by Exit Reason from First Spell in Foster Care



Both pre-1988 sample groups have higher proportions of African Americans among CYA entries, but the difference is more striking among the child welfare only cases (see Figure 4.43 and 4.44). Figures 4.45 and 4.46 compare first placement type and exit reasons for children who later entered CYA and children who did not enter CYA. Children who later entered CYA were less likely to have positive exits (emancipation, reunification) or remain in care than children who did not enter CYA.

Entered Placement from 1988 through 1995

The remaining samples available for study entered out-of-home care during or after 1988. These include children over the age of seven with spells in child welfare supervised foster care, spells in probation without child welfare, and spells in foster care under the supervision of probation and child welfare. The focus of the present study is on the transition from child welfare to adolescent incarceration; therefore the probation only cases are mentioned only for purpose of comparison.

Looking at the rate of entry into CYA by age and ethnicity in 1994, we see that the rate of entry for Hispanic and Caucasian children look similar, while African American youth generally have the highest rate of entry (see Figure 4.47). This contrasts somewhat with the rate of entry for youth with investigated child maltreatment reports where that rate of entry was considerably higher for Hispanic as compared to Caucasian youth (refer to figure 4.49). The exception to the higher rate for African American youth occurs among 15 year olds, where children of Other ethnic backgrounds surpass African American youth (see Figure 4.47). Examining rate of entry by age and gender, the same trend of increasing risk holds for males, while the risk for females appears to level off at

age 15 years with another peak at 17 (see Figure 4.49).

Figure 4.47 1994 Rate of Entry into CYA per 1,000 Youth with CWS First Spells by Ethnicity

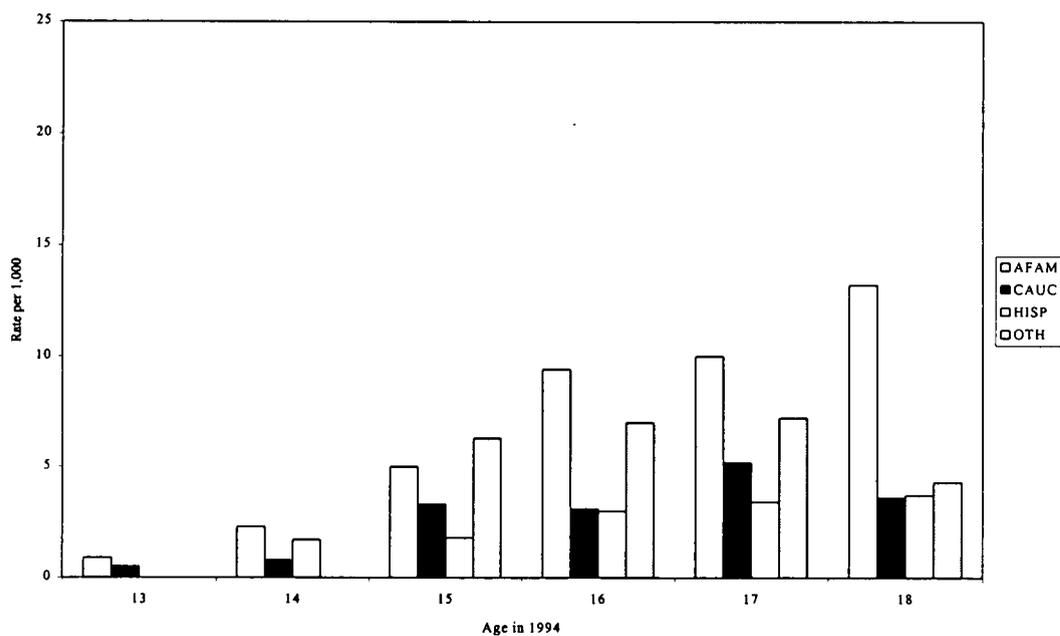


Table 4.36 Number of Youth Entering CYA in 1994 Following a CWS First Spell

	13	14	15	16	17	18	Total
AFAM	2	5	10	16	15	13	61
CAUC	2	3	11	10	14	8	48
HISP	0	4	4	6	6	5	25
OTH	0	0	2	2	2	1	7

Rate per 1,000

	13	14	15	16	17	18	Total
AFAM	0.9	2.3	5.0	9.4	10.0	13.2	5.8
CAUC	0.5	0.7	3.3	3.1	5.2	3.6	2.6
HISP	0	1.8	1.8	3.0	3.4	3.7	2.0
OTH	0	0	6.3	7.0	7.2	4.3	3.9

Figure 4.48 1994 Rate of Entry into CYA per 1,000 Youth with CWS First Spells by Gender

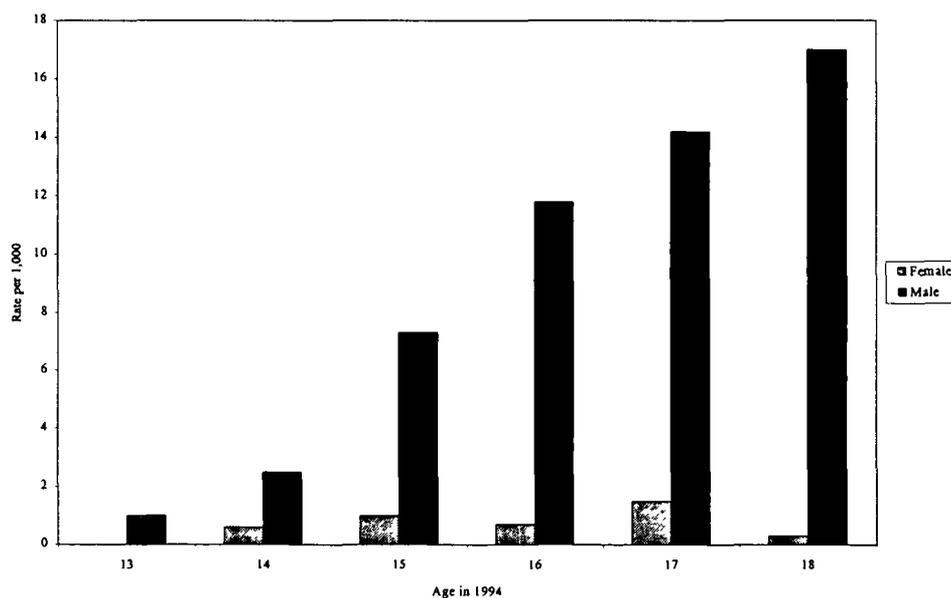


Table 4.37 Number of Youth Entering CYA in 1994 Following a CWS First Spell

	13	14	15	16	17	18	Total
Female	0	3	5	3	6	1	18
Male	4	9	22	31	31	26	123

Rate per 1,000

	13	14	15	16	17	18	Total
Female	0	0.6	1.0	0.7	1.5	0.3	0.7
Male	1.0	2.5	7.3	11.8	14.2	17.2	7.3

Another way of thinking about rate of entry is examining the number of youth per 1,000 who enter CYA according to their age at first placement. We see that although the entry into CYA is more common among older youth, the entries spike for those who entered foster placement at age 12 or 13. African American youth have the highest rate of

Figure 4.49 Rate of Entry into CYA per 1,000 Children First Placed in CWS Foster Care by Age at Time of First Placement and Ethnicity

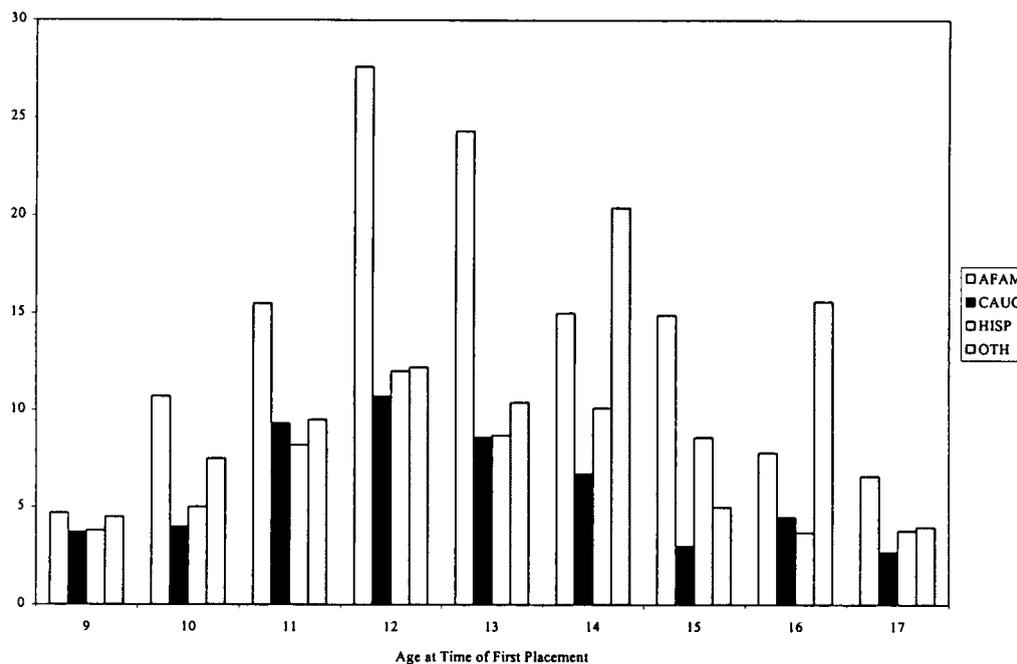
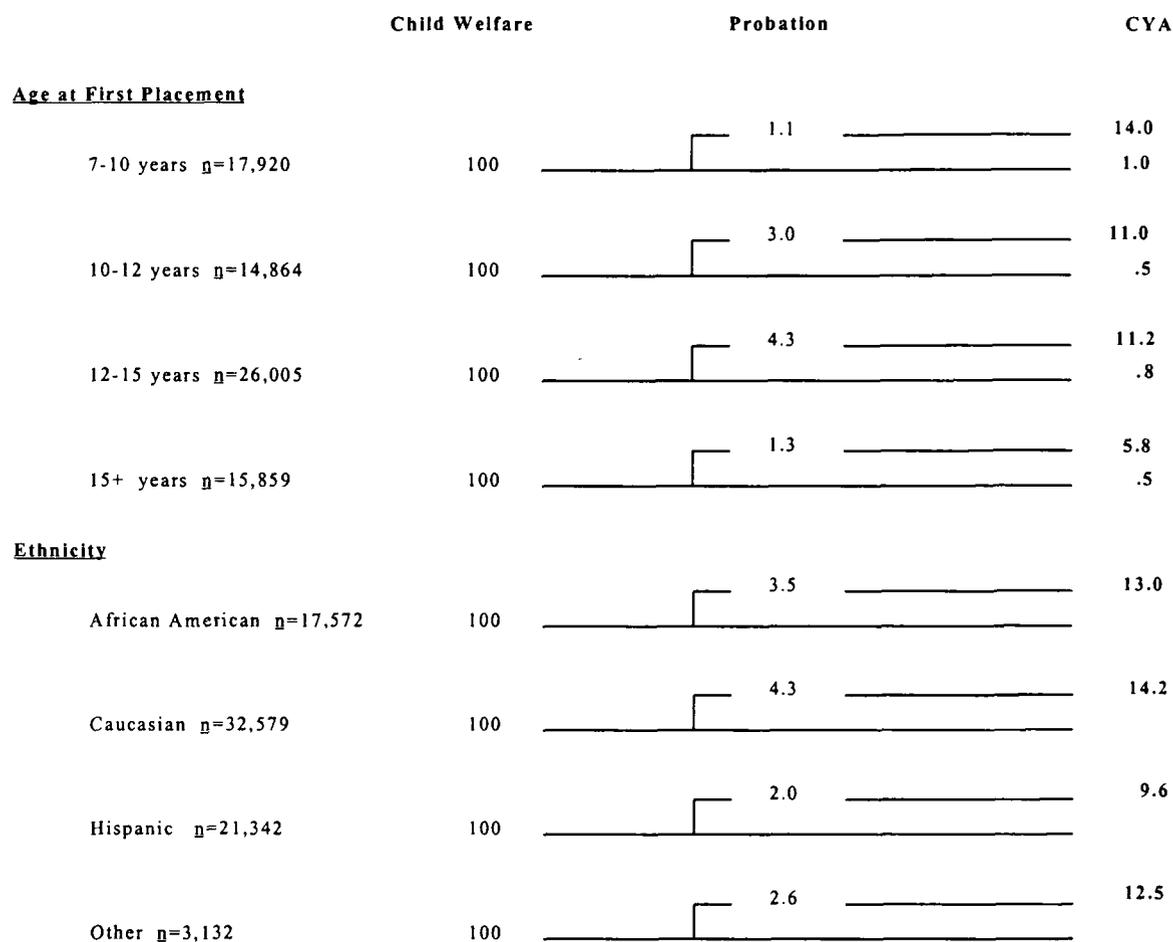


Table 4.38 Rate of Entry into CYA by Age at First Placement and Ethnicity

	8	9	10	11	12	13	14	15	16	17
AFAM	3.0	4.7	10.7	15.5	27.6	24.3	15.0	14.9	7.8	6.6
CAUC	1.2	3.7	4.0	9.3	10.7	8.6	6.7	3.0	4.5	2.7
HISP	3.6	3.8	5.0	8.2	12.0	8.7	10.1	8.6	3.7	3.8
OTH	0	4.5	7.5	9.5	12.2	10.4	20.4	5.0	15.6	4.0

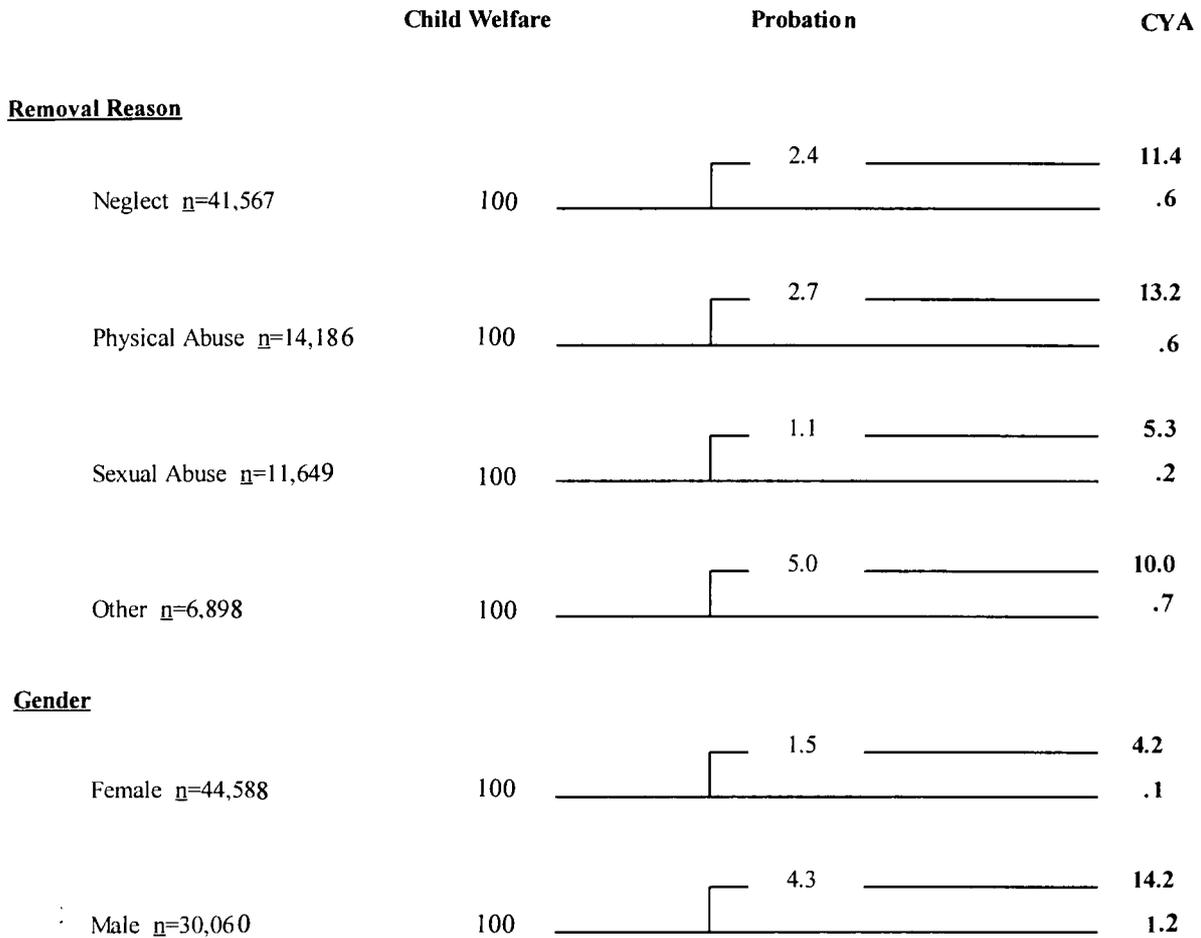
entry across most age groups. Children of Other ethnic groups who entered care at age 14 or 16 had higher rates of entry to CYA than any other ethnic group (see Figure 4.49).

Figures 4.50 and 4.51 present the percent caseload flow through supervising agencies to CYA by various case characteristics. While younger children were less

Figure 4.50 Caseload Percentage for Supervising Agency to CYA by Age and Ethnicity

likely to transition to probation during the study period, those seven to ten year old children who re-entered care under the supervision of probation entered CYA at a higher rate than children of other age groups. African American and Caucasian children had similar proportions of cases move to probation foster care and on to CYA. Hispanic children were least likely to enter probation foster care or CYA, but none of the between ethnicity differences were large.

Figure 4.51 Caseload Percentage for Supervising Agency to CYA by Maltreatment Type and Gender



Children who entered care for reasons other than neglect, physical or sexual abuse had the highest percent change to probation foster care (5%), but a slightly lower percentage of those children initially placed for “other” reasons who re-entered foster care as probation cases transitioned to CYA (10%) than those children initially placed for neglect or physical abuse (11.4 and 13.2%). The transition rate to CYA for females and males without probation placements was .1 vs. 1.2%. A larger percentage of males who moved to probation foster care eventually entered CYA.

Figure 4.52 Rate of Entry into CYA per 1,000 Youth with CWS Supervised First Spells by Number of Spells

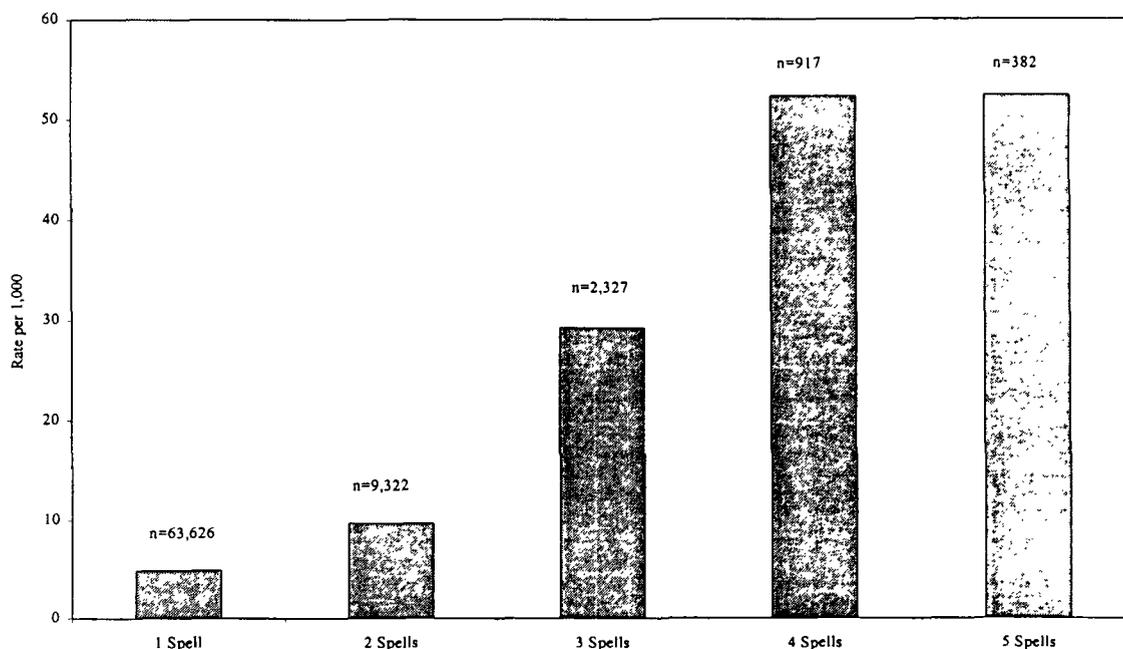


Figure 4.52 above shows the rate of entry into CYA by the number of spells a child has in care. While the rate of entry per 1,000 children with two spells is about ten per 1,000, the rate of entry among children with 3 spells is almost 30 per 1,000. The rates jump again for children with four spells and then level off.

Table 4.39 shows percent case characteristics and odds ratios for all children initially placed in child welfare placements by CYA status. African American children were significantly more likely to enter CYA and Caucasian children were significantly less likely to enter CYA. The percentage of females among the incarcerated group was much lower, but substantially higher than the proportion of females in the general CYA population. Children initially removed for reasons of sexual abuse were much less likely

to be among the incarcerated group. We did not, however, see the increase in neglect among CYA cases that was found in the 10 county analyses of responses to child maltreatment reports. Children who entered CYA were substantially more likely to have two or more spells in foster care and were more likely to have a probation placement in addition to the child welfare spell.

Table 4.39 Percent Case Characteristics and Odds Ratios for Children with First Spells in Child Welfare Supervised Foster Care by CYA Status

	CYA N=590	No CYA N=78,499	Odds Ratio for CYA Entry *
Ethnicity			
African American	38.5	23.9	1.99 [1.7-2.4]
Caucasian	31.2	43.6	.59 [.5-.7]
Hispanic	25.1	28.4	.84 [.7-1.0]
Other	5.2	4.1	1.30 [.9-1.9]
Gender			
Female	12.4	59.5	.46 [.4-.5]
Removal Reason			
Neglect	59.7	56.1	1.10 [.9-1.4]
Physical Abuse	21.4	18.9	1.10 [.9-1.4]
Sexual Abuse	4.4	15.7	.25 [.2-.4]
1 st Placement Type			
Family home	73.0	80.0	.70 [.5-.8]
First Exit Reason			
Reunification	49.0	55.0	.80 [.7-.9]
Number of Spells			
2 or more	48.0	17.0	4.40 [3.7-5.2]
2 nd Supervising Agency			
Probation	36.1	2.2	24.7 [20.8-29.5]

(* 95% confidence intervals are provided)

Figure 4.53 below illustrates the paths of children with first placement in child welfare foster care in 1990 through two spells. From the point of exit (“no exit” indicates the child remained in care throughout the study period) from the first spell, children’s

potential re-entry, supervising agency and entry into CYA are shown. Less than one percent of those who exited from their first spell in care and did not have a second spell entered CYA. About 13 percent of children who exited their first spell returned to care as probation cases within a five year period. Children later supervised by probation were more likely to enter CYA.

Figure 4.53 Pathways of Children First Placed in CWS Foster Care through Two Spells

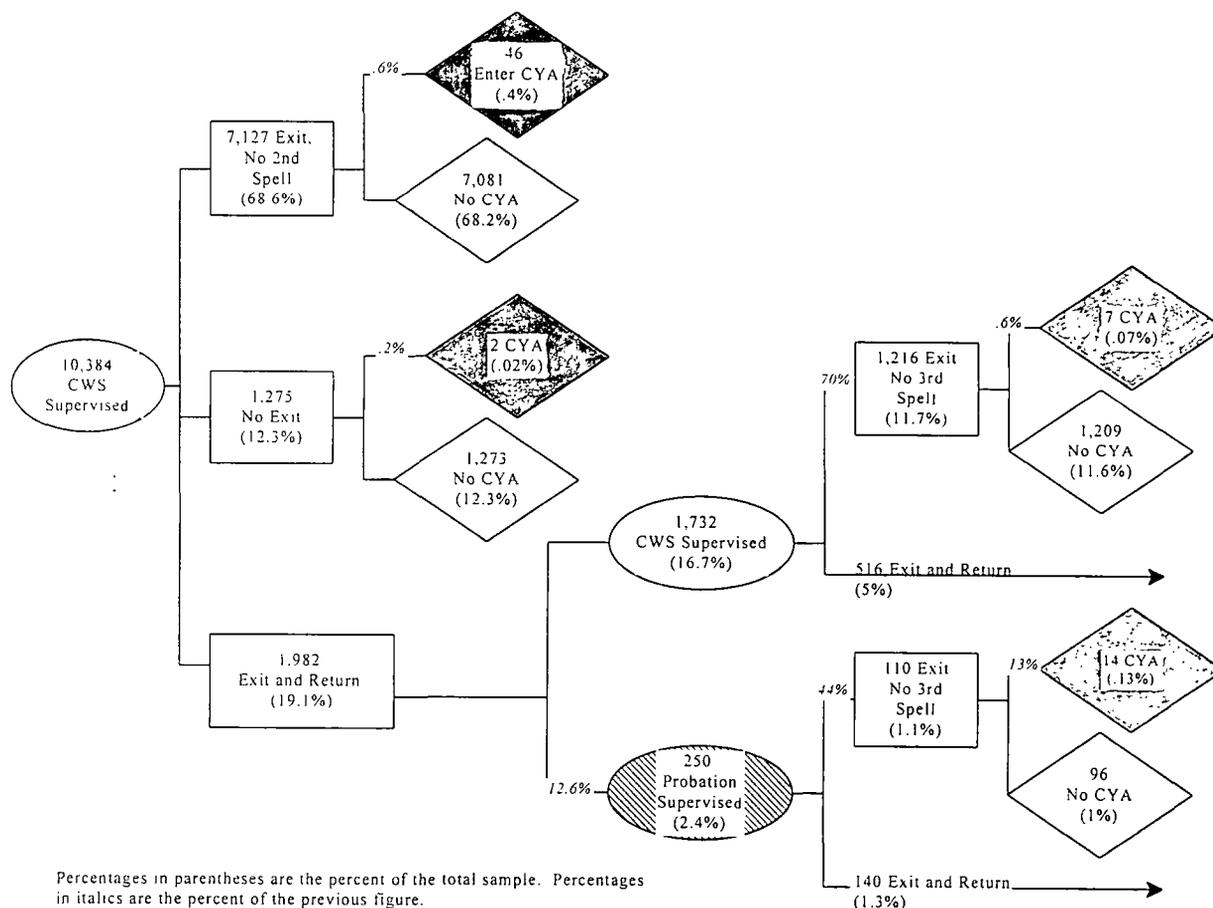


Figure 4.54 Median Number of Months In and Out of Foster Care by CYA and Entry and Number of Spells

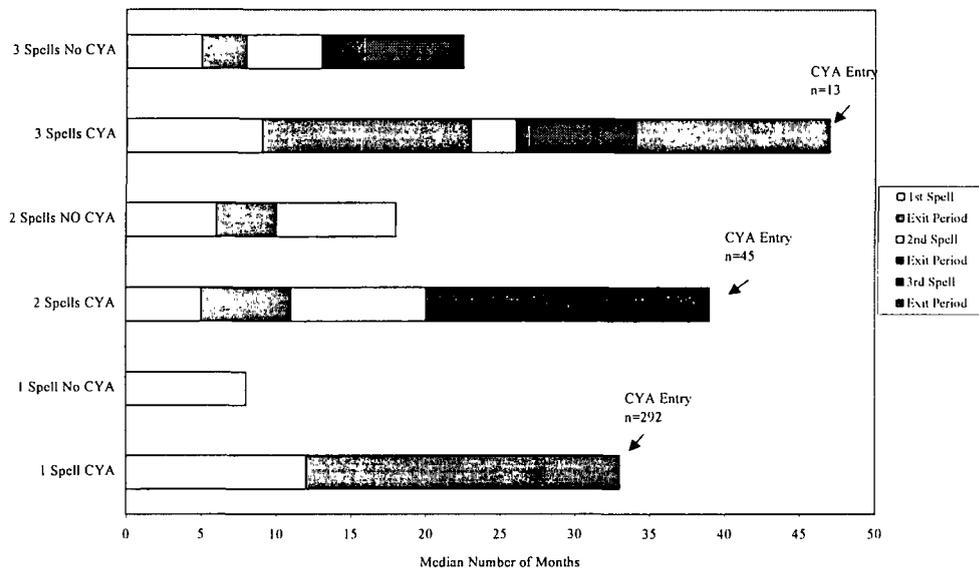
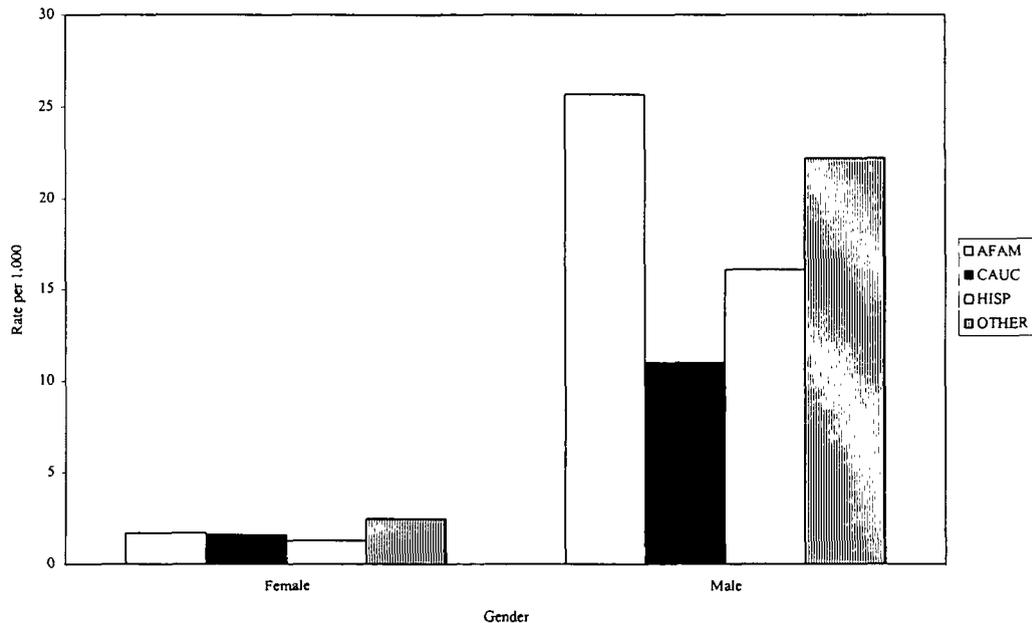


Figure 4.54 displays the median number of months in and out of foster care according to the number of spells a youth had during the study period. In general, youth with 2 or more spells who subsequently entered CYA spent longer periods of time out of foster care in between spells than youth who did not go to CYA. Few youth entered CYA directly from foster care or following emancipation which accounts for the relatively long median time period from the last spell in care until entry into CYA.

Figure 4.55 examines rate of entry into CYA by gender and ethnicity. The proportion of females entering CYA is generally too small to detect gender variations in multivariate models. In this figure we see that the difference in incarceration rate by gender among Caucasians is much smaller than gender variations among other ethnic groups. Among females the entry rate between African American, Caucasian and Hispanic females is almost the same.

Figure 4.55 CYA Entry by Ethnicity and Gender

Risk of entry. Those case characteristics with significant relationships to entry into CYA are presented according to their bivariate relationship to the time to entry into CYA in the following figures. Figures 4.56-4.61 show the failure rate (probation entry) by age, ethnicity, gender, removal reason, primary placement type, number of moves in first placement, first exit reason, and number of spells. Children entering care between the ages of 12 and 14 years had the highest overall entry rate—almost 3 percent (see Figure 4.56). African American children and children of other ethnic groups had similar rates of entry over time, though the variation between ethnic groups was not large (see Figure 4.57). Males had a substantially higher rate of entry over time (see Figure 4.58). Rates of entry for neglect and physical abuse were similar and higher when compared to sexual abuse. As one might expect, those who exited foster care due to incarceration (includes

primarily non-CYA incidents such as juvenile hall) were much more likely to enter CYA followed by children who ran away from their first spell in care (see Figure 4.60). The impact of having three or more spells or transitioning to probation foster care also significantly increased the risk of entry (see Figure 4.61 and Figure 4.62).

Figure 4.56 Probability of CYA Entry by Age at First Placement

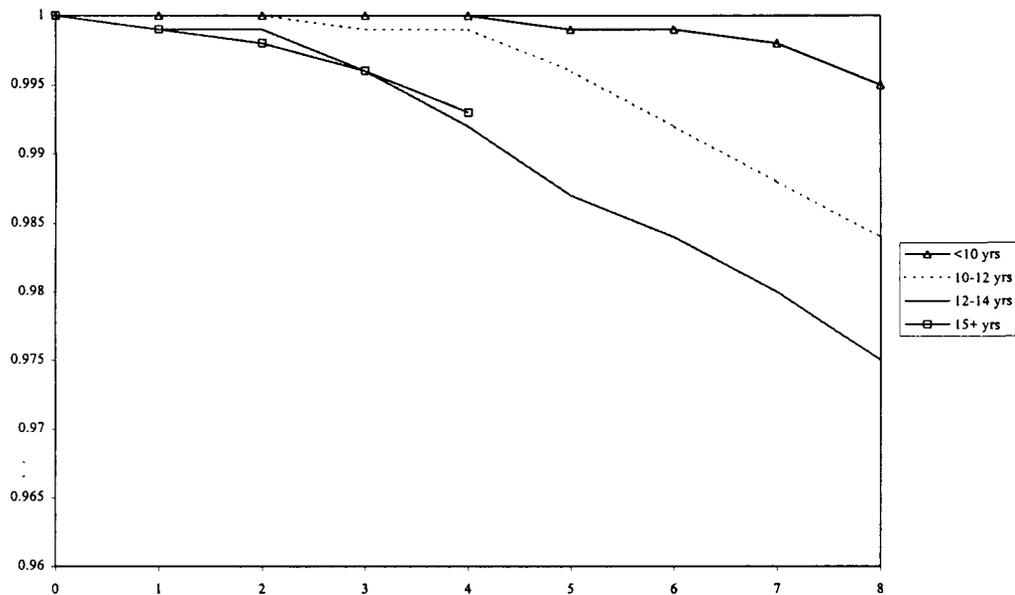


Figure 4.57 Probability of CYA Entry by Ethnicity

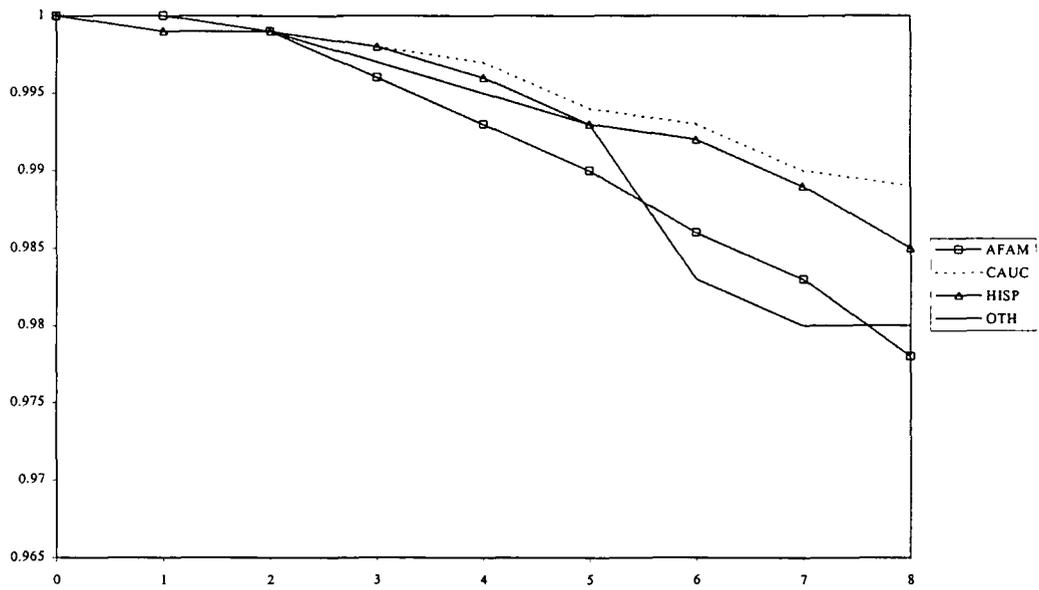


Figure 4.58 Probability of CYA Entry by Gender

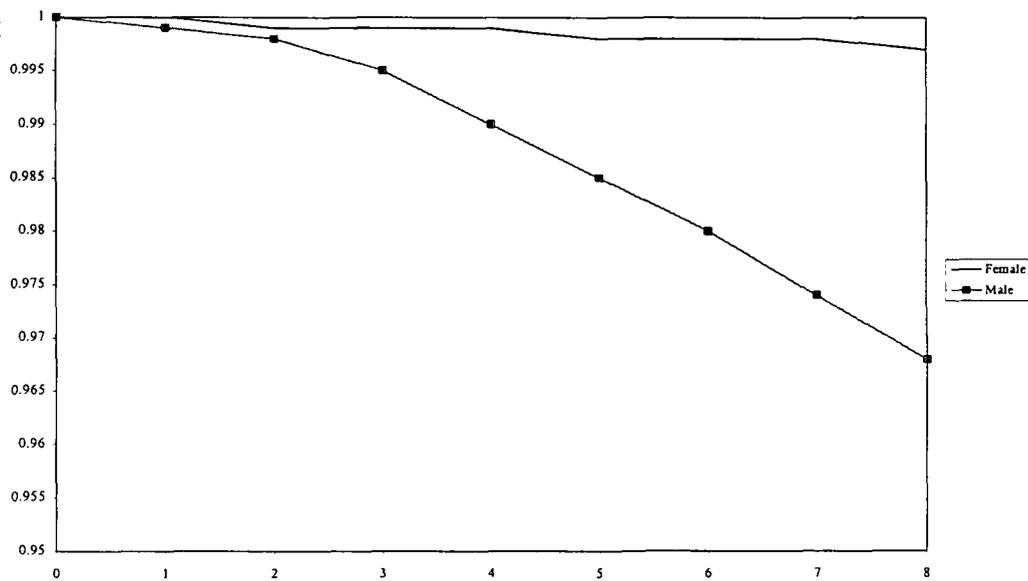


Figure 4.59 Probability of CYA Entry by Removal Reason

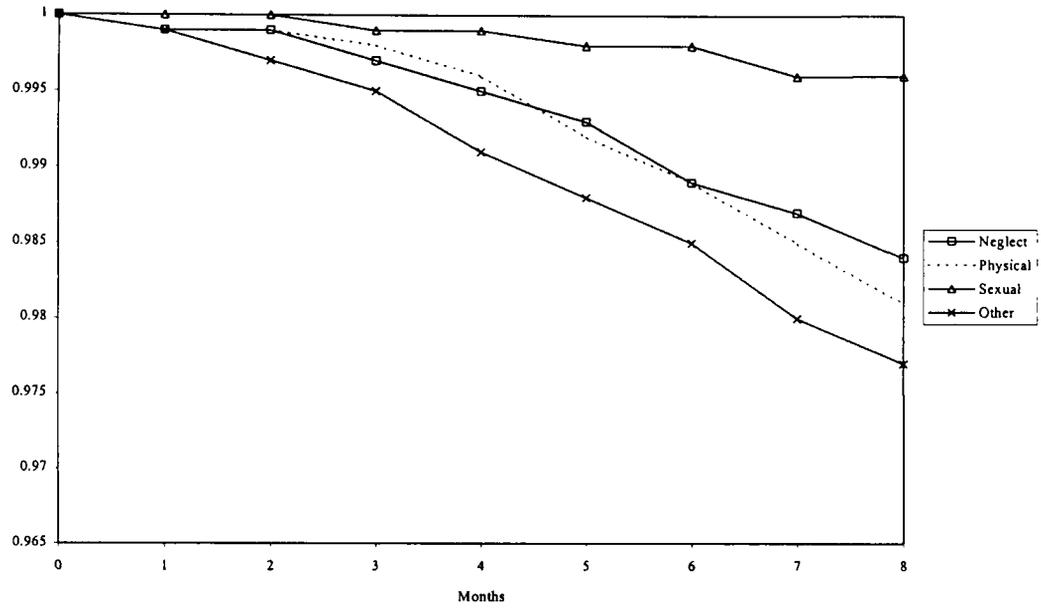


Figure 4.60 Probability of CYA Entry by Exit Reason

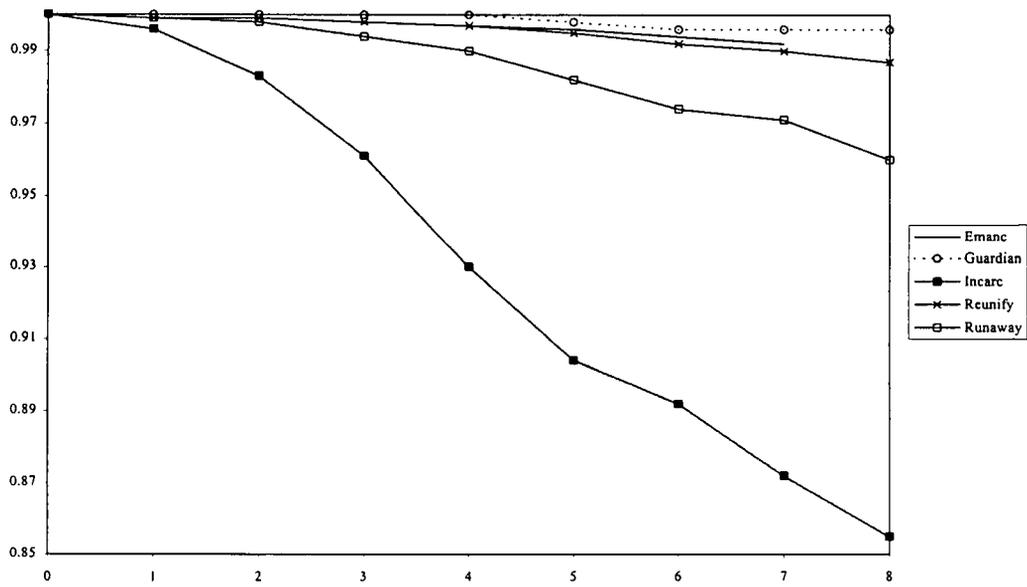


Figure 4.61 Probability of CYA Entry by Number of Spells in Care

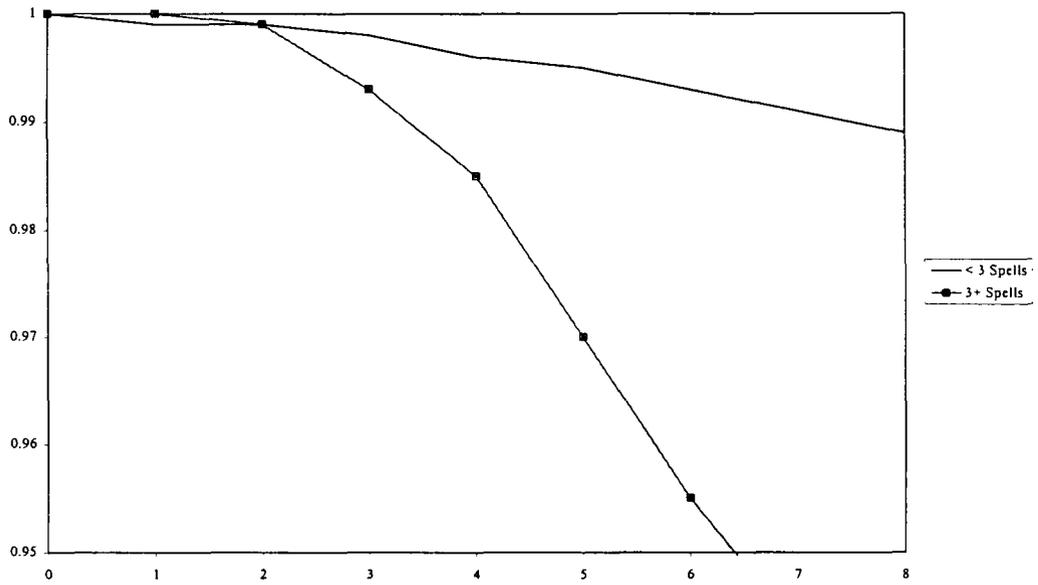


Figure 4.62 Probability of CYA Entry by Change in Supervising Agency

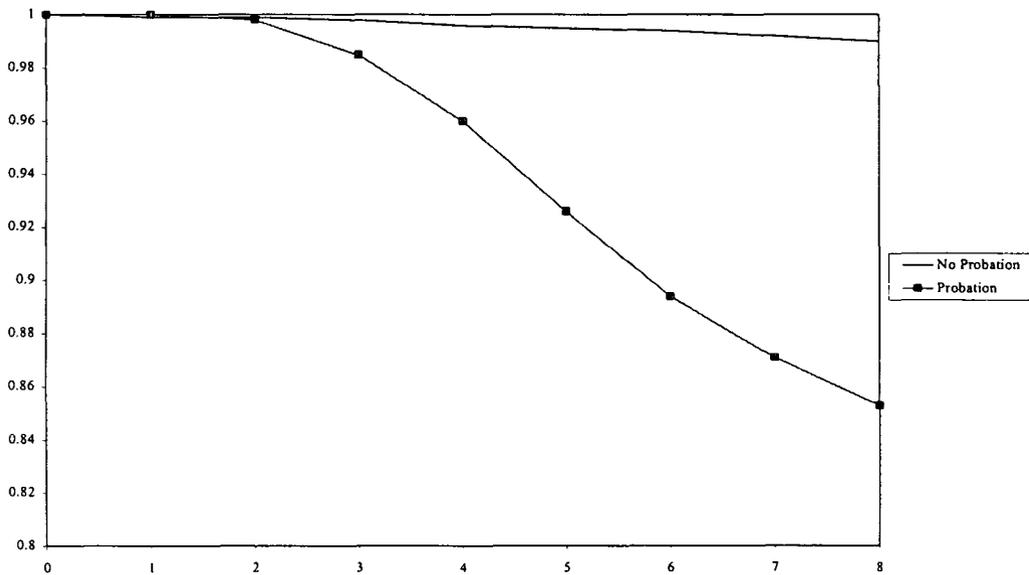


Table 4.40 Cumulative Probability of Failure (Incarceration) at 2,4,6, & 8 Years

	Months to CYA Entry				Total	Failed	Censored
	24	48	72	96			
Age at First Entry							
7-10 years	0	0	.001	.004	11,096	22	99.8
10-12 years	0	.001	.008	.016	9,634	68	99.3
12-14 years	.001	.008	.016	.025	18,258	208	98.9
15+ years	.002	.007	n.a.	n.a.	12,210	67	99.5
Ethnicity							
African Am	.001	.006	.01	.02	11,391	128	98.9
Caucasian	.001	.003	.007	.01	23,388	126	99.5
Hispanic	.001	.004	.001	.014	14,235	92	99.4
Other	.0005	.005	.02	.02	2,169	19	99.1
Gender							
Female	.0002	.001	.002	.003	31,270	48	99.9
Male	.002	.01	.02	.03	19,928	317	98.4
Removal reason							
Neglect	.002	.005	.01	.015	27,911	212	99.2
Physical	.0003	.004	.01	.019	10,063	84	99.2
Sexual	.00	.0	.0	.0	7,919	15	99.8
Other	.003	.01	.015	.023	5,218	54	98.9
Exit Reason							
Emancipation	.0003	.003	.006	.008	3,668	13	99.6
Guardianship	0	0	.004	.004	1,101	3	99.7
Incarceration	.02	.07	.11	.14	708	67	90.5
Reunification	.001	.003	.008	.013	28,161	186	99.3
Runaway	.002	.01	.025	.04	5,446	87	98.4
Stayed in Care	0	.001	.002	.002	11,831	8	99.9
Number of Spells							
< 3 Spells	.001	.004	.007	.01	48,540	252	99.5
3+ Spells	.001	.02	.04	.07	2,658	113	95.7
Supervising Agency							
CWS Only	.001	.003	.006	.01	49,986	244	99.5
CWS/ Probation	.002	.04	.11	.15	1,212	121	90.0

To further examine the risk of entry into CYA for children with a first spell in child welfare supervised foster care, a proportional hazards analysis was conducted. The model had a -2 Log Likelihood of 651.7, 23 DF, ($p=.0001$) which indicated that the variables were important in understanding the risk of incarceration according to certain case characteristics while controlling for time of entry and time at risk (see Table 4.41).

Age at time of the first placement, a change in the supervising agency, being male, and being reported for neglect or physical abuse as opposed to sexual abuse all increased the risk of entry. The magnitude of the O.R. for a change in supervising agency suggests that this factor would remain significant even in a model which included more powerful predictors. Reunification as compared to all other exits following the first spell decreased the risk of incarceration for Caucasian youth, but increased the risk of incarceration for African American and Hispanic children. Youth placed for physical abuse or neglect who had no more than two spells in foster care were at greater risk for later CYA entry than those placed for reasons of sexual abuse. Among youth with multiple spells in foster care, however, there was little difference in risk according to removal reason.

Table 4.41 Proportional Hazards Model: Risk of CYA Entry Following A First Spell in Child Welfare Supervised Foster Care

$n = 40,644$ 269 incarcerated (1 child per family)

Analysis of Maximum Likelihood Estimates

Variable	DF	Parameter Estimate	Standard Error	Wald Chi-Square	Pr > Chi-Square	Risk Ratio
Age at 1st Placement						
12 to 14 yrs	1	2.25	.39	33.78	.0001	9.49
< 12 or >14						
Ethnicity						
African Amer	1	.61	.24	6.41	.01	1.84
Hispanic	1	.30	.42	.50	.48	1.35
Caucasian						
Gender						
Male	1	1.94	.18	113.80	.0001	6.96
Female						
Report Type						
Neglect	1	.98	.47	4.33	.04	2.66
Physical Abuse	1	.92	.37	6.10	.01	2.50
Sexual Abuse						
Reunified After 1st Spell						
Yes	1	-.60	.25	5.88	.02	.55
Other exit						
Number of Spells						
3+ Spells	1	.28	.65	.18	.67	1.40
< 3 Spells						
Time in 1st Spell						
18 + Months	1	.67	.20	11.15	.0008	1.96
< 18 months						
Change to Probation						
Yes	1	2.66	.29	81.53	.0001	14.30
No						
Interactions						
AFAM/Reun	1	.64	.30	4.66	.03	1.90
HISP/ Reun	1	.62	.34	3.38	.07	1.87
AFAM/Change	1	-.57	.30	3.64	.06	0.56
HISP/Change	1	-.36	.35	1.10	.29	0.69
Age/Time	1	-.82	.26	9.58	.002	0.44
Change/Time	1	-.40	.29	1.86	.17	0.67
Reun/Spells	1	-.49	.28	3.08	.08	0.61
Neg/ Spells	1	-1.26	.54	5.46	.02	0.28
Phys/Spells	1	-.92	.57	2.65	.10	0.40
Time Varying						
Hispanic	1	.001	.007	.005	.95	1.00
Spells	1	.02	.007	9.71	.002	1.02
Neglect	1	-.0003	.007	.002	.96	1.00
Age	1	-.02	.008	8.31	.004	.98

-2 Log Likelihood χ^2 651.7, 23DF, $p=.0001$

Entry into CYA Among CWS Only Children and Youth in Foster Care

It was not possible to control for potential onset of delinquent acts during or prior to foster placement (due to lack of complete information). It is possible that youth who re-entered care under probation supervision may represent a group with a very different delinquency trajectory than those children with CWS placements only. Therefore rate of entry into CYA was also examined by excluding from analyses those children who had a spell in probation foster care following a first spell in child welfare foster care. As compared with Figure 4.49 on page 181, the incidence rate of entries into CYA decreases when children with later probation supervised spells are excluded (see Figure 4.63). The change in rate of entry to CYA by age at first placement was greatest among the youth who were younger at age of entry into foster care. While rates of entry remain high among African American children, the gap between Hispanic and African American children under the age of 14 decreases over time. This is not surprising given the fact that those youth who transition to probation placement are already involved in the juvenile justice system.

Figures 4.64 and 4.65 follow cases with no history of probation placement through two spells in care. The top figure follows cases without later incarceration and the bottom figure follows the path of children who eventually entered CYA. A nearly equal proportion of children who did and did not later enter CYA were reunified following a first spell in foster care. Seventy-five percent of youth who entered CYA within two spells entered CYA prior to a second spell in care. Among reunified youth who eventually entered CYA, however, a greater number returned to a second spell in foster care.

Figure 4.63 Rate of Entry into CYA by Age at First Placement and Ethnicity

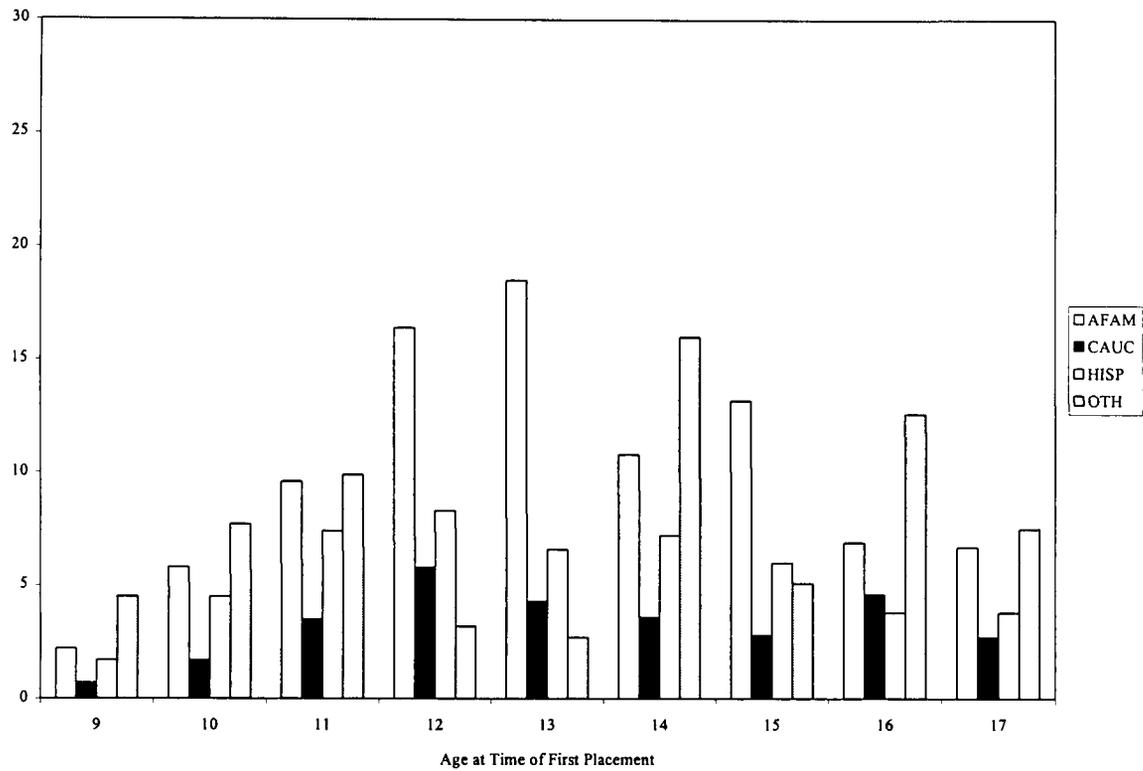


Table 4.42 Rate of Entry into CYA by Age at First Placement and Ethnicity

	8	9	10	11	12	13	14	15	16	17
AFAM	1.8	2.2	5.8	9.6	16.4	18.5	10.8	13.2	6.9	6.7
CAUC	0.4	0.7	1.7	3.5	5.8	4.3	3.6	2.8	4.6	2.7
HISP	2.4	1.7	4.5	7.4	8.3	6.6	7.2	6	3.8	3.8
OTH	0	4.5	7.7	9.9	3.2	2.7	16	5.1	12.6	7.5

Figure 4.64 Pathways of Youth Not Entering CYA with up to 2 Spells in Child Welfare Foster Placement

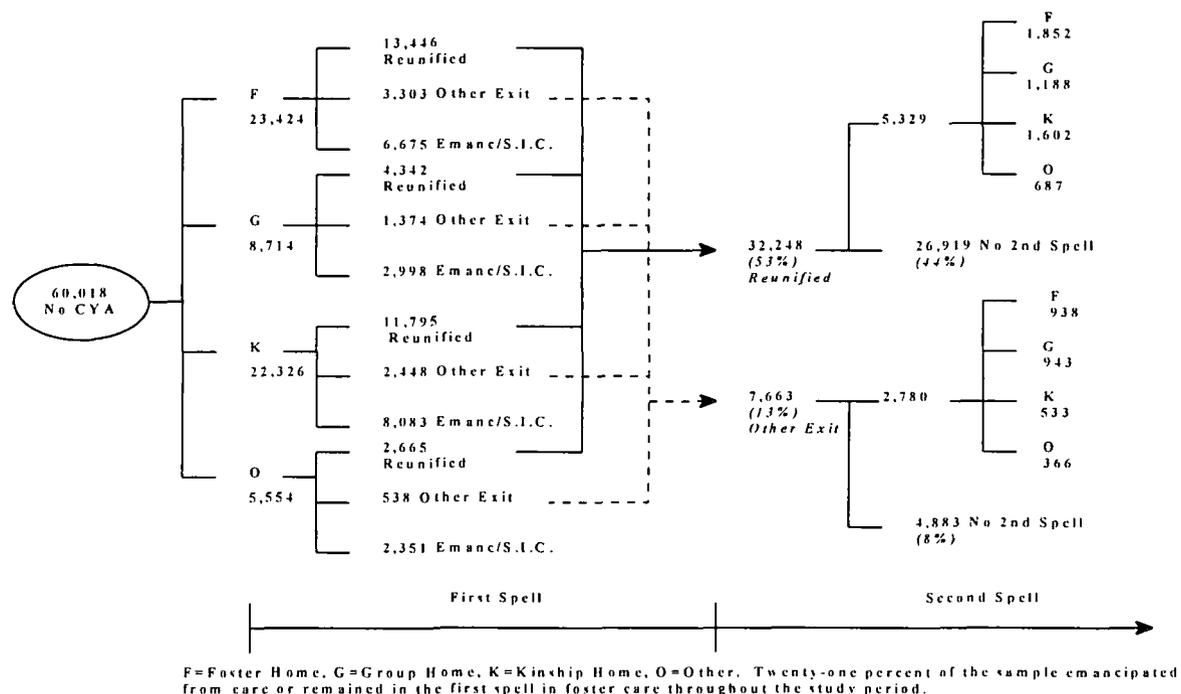
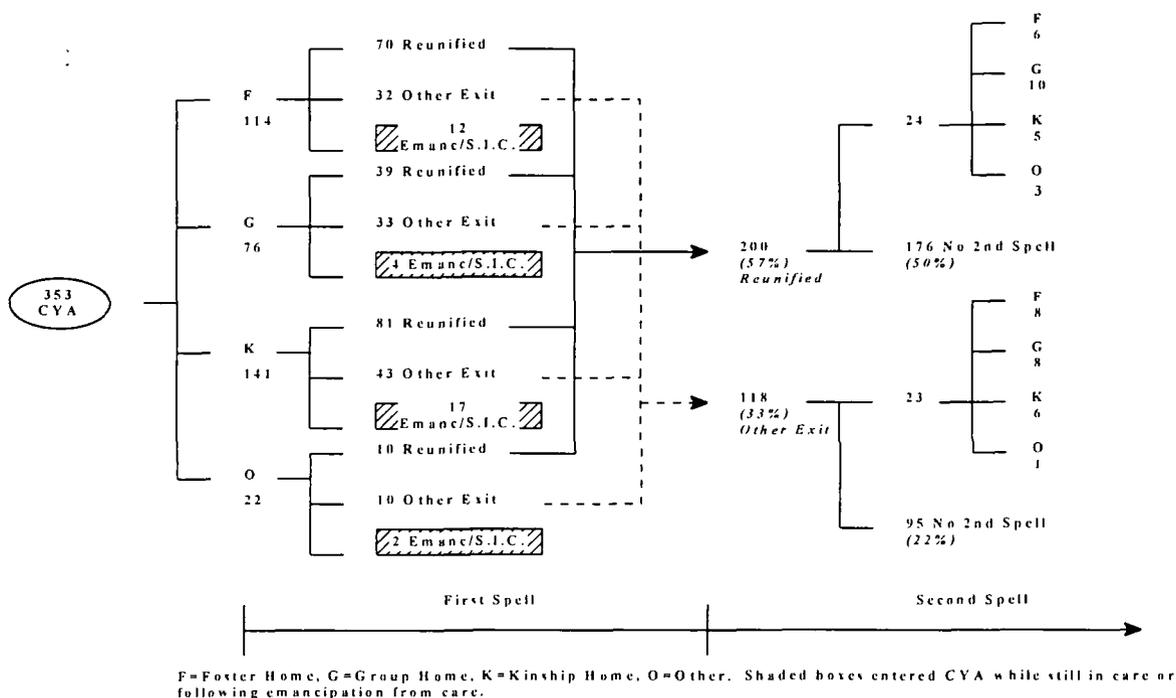


Figure 4.65 Pathways of Youth Entering CYA with up to 2 Spells in Child Welfare Foster Placement



Risk of entry. Those case characteristics with significant bivariate relationships to entry into CYA over time are presented in the following figures. Figures 4.66-4.71 show the failure rate (CYA entry) by age, ethnicity, gender, removal reason, primary placement type, number of moves in first placement, first exit reason, and number of spells. Children aged 12 through 14 years at the time of their first placement were more likely to enter CYA—about 2 percent total over a seven and one half year period (see Figure 4.66). African American and children of Other ethnic groups had similar rates of entry into CYA over time (see Figure 4.67). Unfortunately, the size of the Other sample group did not allow for multivariate analyses. As in all the preceding analyses, males have a greater entry rate across time than females (see Figure 4.68). The gender gap in entry to CYA, however, is less than found when youth with probation or histories were included. Physical and sexual abuse have similar rates of entry over time. The rate of entry for sexual abuse cases is lower than all other removal reasons. The rate for other reasons is somewhat difficult to interpret because of the diversity of reasons included in this category such as voluntary relinquishment (see Figure 4.69).

Having three or more spells in care increased the risk of entry into CYA at a small but statistically significant level (see Figure 4.70). Among exit reasons, the heightened risk for youth exiting their first spell due to incarceration dwarfs the failure curves for other exit groups. Almost 15 percent of those youth who left foster care due to incarceration eventually entered CYA (see Figure 4.71).

Figure 4.66 Probability of Entry into CYA by Age at First Placement

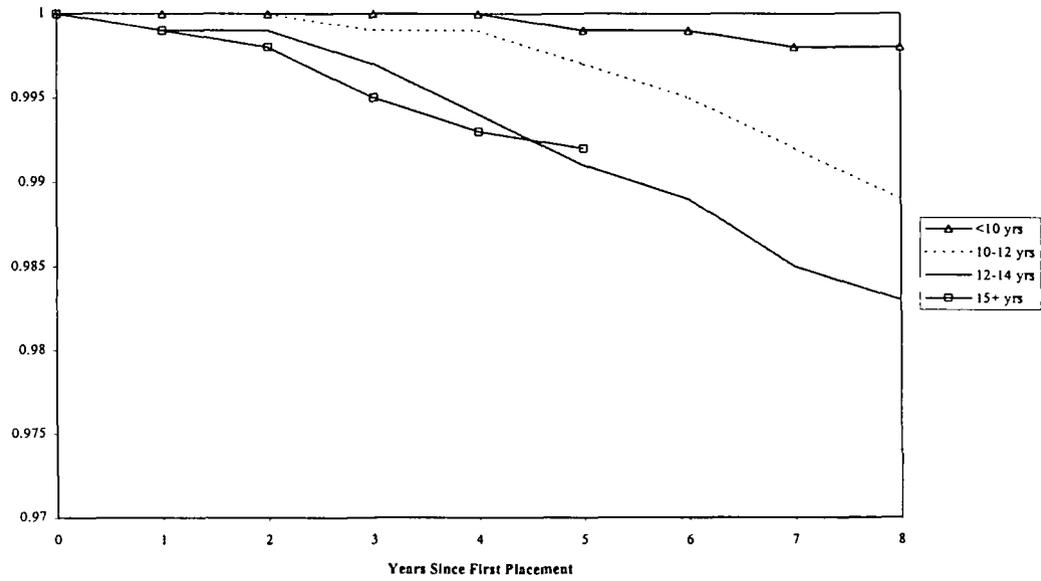


Figure 4.67 Probability of Entry into CYA by Ethnicity

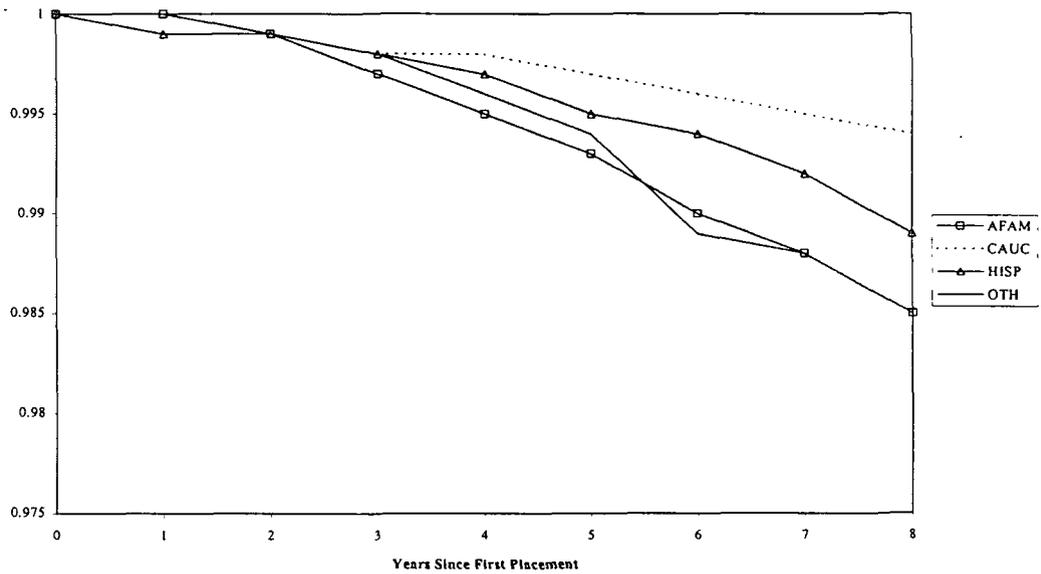


Figure 4.68 Probability of Entry into CYA by Gender

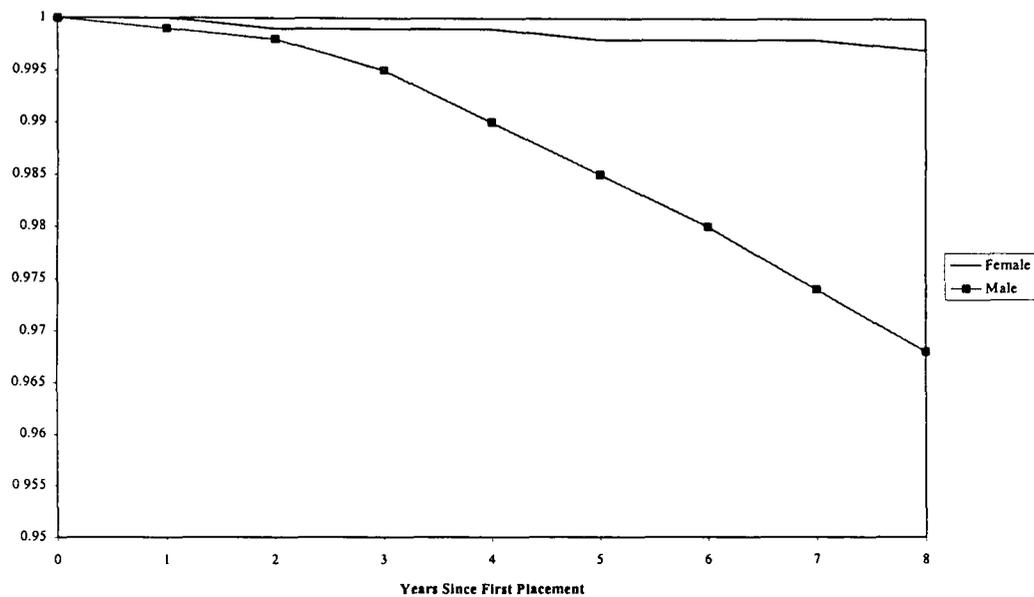


Figure 4.69 Probability of Entry into CYA by Removal Reason

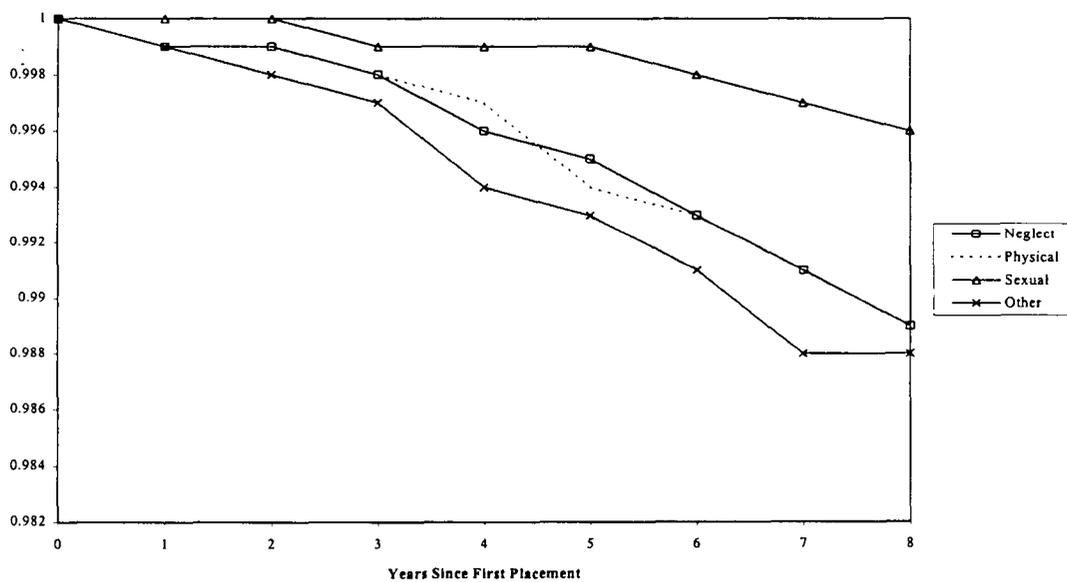


Figure 4.70 Probability of Entry into CYA by Number of Spells in Care

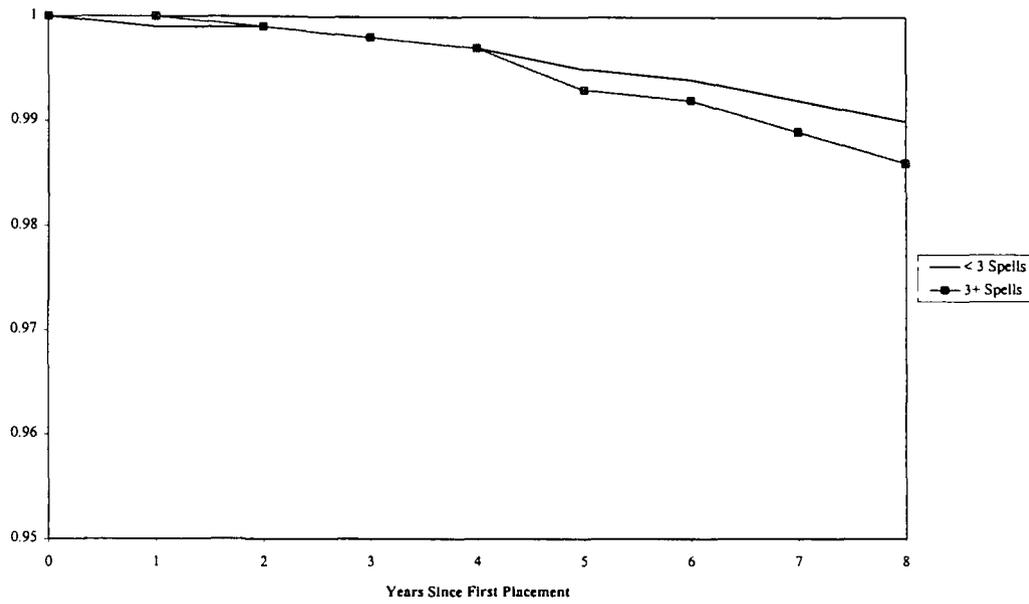


Figure 4.71 Probability of Entry into CYA by Exit Reason from First Spell

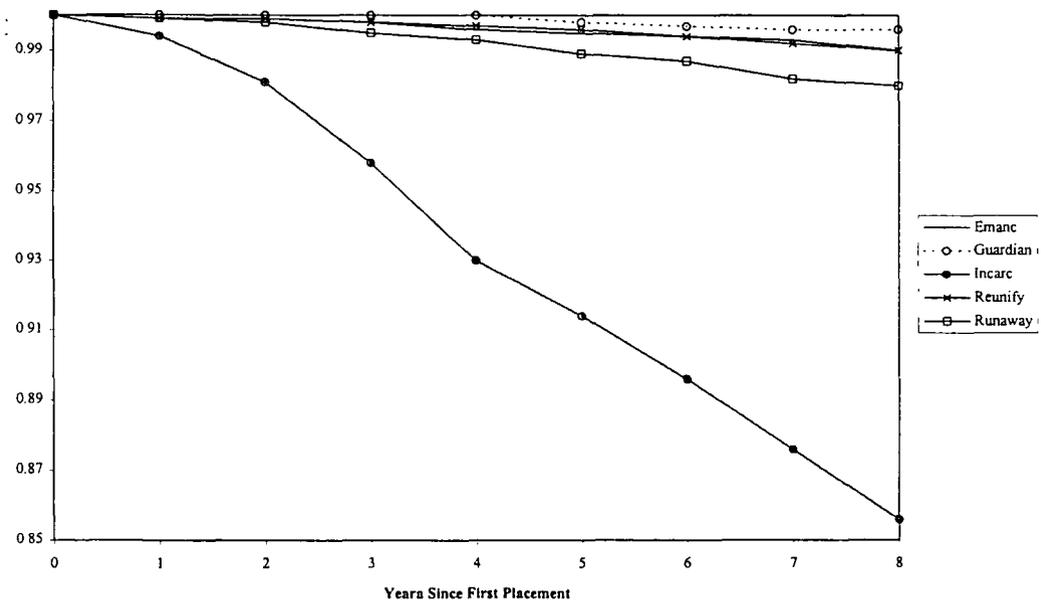


Table 4.43 Cumulative Probabilities of Failure (Incarceration) at 2,4,6 and 8 years

	Months to CYA Entry				Total	Failed	Censored
	24	48	72	96			
Age at First Entry							
7-10 years	0	0	.0004	.002	11,074	13	99.9
10-12 years	0	.001	.004	.01	9,323	35	99.6
12-14 years	.001	.005	.01	.014	17,530	122	99.3
15+ years	.002	.007	n.a.	n.a.	12,070	60	99.5
Ethnicity							
African Am	.001	.005	.01	.014	11,069	86	99.2
Caucasian	.001	.002	.004	.006	22,835	71	99.7
Hispanic	.001	.003	.005	.01	13,970	59	99.6
Other	.0005	.004	.01	.015	2,106	14	99.3
Gender							
Female	.0002	.001	.001	.0015	30,779	29	99.9
Male	.002	.007	.01	.02	19,218	201	98.9
Removal reason							
Neglect	.0007	.004	.007	.01	27,233	143	99.5
Physical	.0004	.003	.005	.01	9,806	43	99.6
Sexual	0	.0004	.001	.002	7,866	8	99.9
Other	.002	.007	.01	.014	5,001	36	99.3
Exit Reason							
Emancipation	.0004	.004	.006	.01	3,662	13	99.6
Guardianship	0	0	.003	.004	1,083	3	99.7
Incarceration	.02	.07	.104	.144	445	36	91.9
Reunification	.001	.003	.006	.01	27,552	123	99.5
Runaway	.002	.007	.01	.02	5,103	45	99.1
Still in Care	0	.001	.002	.002	11,871	9	99.9
Number of Spells							
< 3 Spells	.001	.003	.006	.01	48,213	218	99.5
3+ Spells	.001	.004	.01	.01	1,784	12	99.3

To further examine the risk of entry into CYA for children with a first spell in child welfare supervised foster care and excluding any children with subsequent probation foster care spells, a proportional hazards analysis was conducted. The model had a -2 Log Likelihood X^2 304.42, 24DF, ($p=.0001$) which indicated that the variables were important in understanding the risk of incarceration according to certain case characteristics while controlling for time of entry and time at risk. The decline in the power of this model is likely related to the strong predictive capacity of prior delinquency in the previous model, Table 4.41.

In this model the impact of age at first placement declines and the impact of ethnicity as a main effect changes direction. This change in direction of the main effect of ethnicity is offset by the strong interactions with reunification after the first spell and length of stay in the first spell. For children of color who returned home after a 1st spell in care, the likelihood of entry into CYA was two to five times higher than for children of color who remained in care or exited for other reasons. The impact of having three or more spells in care also increases in the model which excludes children who had later probation supervised spells. The strength of the influence of gender on the risk of incarceration also increases (the R.R. for males increases from about 7 to an R.R. of about 10). Compared to the model including later probation placements, children placed due to neglect had a greater risk of CYA entry among CWS only cases.

Table 4.44 Proportional Hazards Model: Risk of CYA Entry Following Child Welfare Supervised Foster Care

n=39,641 171 incarcerated (1 child per family)
Analysis of Maximum Likelihood Estimates

Variable	DF	Parameter Estimate	Standard Error	Wald Chi-Square	Pr> Chi-Square	Risk Ratio
Age at 1st Report						
12 to 14	1	1.78	.43	17.10	.0001	5.91
<12 or >14						
Ethnicity						
African American	1	-1.51	.80	3.55	.06	.22
Hispanic	1	-.98	.85	1.34	.25	.38
Caucasian						
Gender						
Male	1	2.29	.23	99.35	.0001	9.89
Female						
Report Type						
Neglect	1	1.12	.60	3.42	.06	3.05
Physical Abuse	1	.81	.45	3.24	.07	2.25
Sexual Abuse						
Reunified After 1 Spell						
Yes	1	-.94	.32	8.46	.004	.39
Other exit						
Number of spells						
3+ spells	1	1.77	1.03	2.94	.09	5.85
<3 spells						
Time in 1st spell						
18 + mos	1	-.67	.39	2.95	.09	.51
<18 mos						
Placement Type						
Kin/Family Group	1	-.24	.19	1.61	.20	.78
Interactions						
AFAM/Reun	1	1.62	.42	15.15	.0001	5.10
HISP/Reun	1	1.24	.45	7.77	.005	3.45
AFAM/Time	1	1.36	.46	8.63	.003	3.92
HISP/Time	1	1.58	.49	10.37	.001	4.68
AFAM/Type	1	1.31	.76	2.96	.09	3.71
HISP/Type	1	.68	.71	.93	.34	1.98
Reun/Time	1	-.41	.34	1.41	.23	.066
Neg/Spells	1	-2.11	.81	6.79	.009	.12
Phys/Spells	1	-1.67	.93	3.23	.07	.19
Time Varying						
Hispanic	1	.001	.007	.005	.95	1.00
Spells	1	.02	.007	9.71	.002	1.02
Neglect	1	-.0003	.007	.002	.96	1.00
Age	1	-.02	.008	8.31	.004	.98

-2 Log Likelihood χ^2 304.42, 24DF, p=.0001

Violent versus Non-Violent Offenders

Among those youth in CYA with previous foster care histories, we further examined incarceration for a violent versus non-violent primary offense. Table 4.45 presents violent and non-violent offenses broken down by offense category. Children placed in child welfare supervised foster care who later entered CYA had similar proportions of homicide and manslaughter to all CYA entries statewide. Youth placed only in probation foster care were less likely to be incarcerated for a violent offense than those in child welfare foster care. There were no clear deficiencies for assault. Youth in probation placements only were much more likely than child welfare foster youth to be incarcerated for burglary or theft as a primary offense.

Table 4.45 Percent Primary Offense: CWS only, CWS First, Probation only, and Statewide Admissions

	CWS Only n=375	CWS First n=589	Probation n=2,271	Statewide CYA n=29,654
Violent Crimes				
Homicide	6.4	4.6	1.8	5.4
Manslaughter	3.7	2.6	.9	2.6
Robbery	31.0	28.2	14.7	21.5
Assault	20.8	19.0	18.7	20.2
Rape/ Sex Crimes	6.7	5.3	5.5	5.2
Property or Non-violent				
Burglary/ theft	21.4	28.7	41.8	30.1
Drug offenses	3.8	4.9	7.4	9.7
Other	6.2	6.7	9.2	10.5

Table 4.46 Children with a First Placement in CWS Supervised Foster Care: Percent Violent Crime Status and Odds Ratios by Case Characteristics

	Violent n=347	Not Violent n=242	Odds Ratio
Ethnicity			
African American	43.8*	30.7	1.76 [1.2-2.5]
Caucasian	24.4*	41.1	.46 [.3-.7]
Hispanic	27.5	21.6	1.38 [.9-2.0]
Oth	4.3	6.6	.63 [.3-1.3]
Gender			
Female	11.5	13.7	.97 [.9-1.0]
Single Parent			
Yes	70.3*	79.3	.6 [.4-.9]
Siblings			
Three or more	42.4*	55.4	.6 [.4-.8]
Own Child	8.9	8.6	1.0 [.6-1.8]
Removal Reason			
Neglect	64.2*	53.1	1.6 [1.1-2.2]
Physical Abuse	19.9	19.0	1.0 [.8-1.4]
Sexual Abuse	3.7*	15.7	.2 [.1-.3]
Placement Type			
Family Care	72.3*	79.5	.7 [.5-.8]
1st Exit			
Reunified	51.6	45.2	1.3 [.9-1.7]
Spells in Care			
Two or more	40.1*	17.4	3.1 [2.6-3.9]
Change to Probation	26.8*	2.5	14.2 [11.2-18.1]
Substance Abuse Problem	35.5	44.2	.7 [.5-.97]
Three or More Petitions	30	55	.35 [.25-.5]
Age at 1st Petition			
Less than 13 yrs	45	38	1.4 [.97-1.9]
Previous Incarceration	35.7	60	.37 [.3-.5]

* Indicates significant difference at $p > .05$

Children entering CYA with a history of child welfare supervised foster placement were compared according to violent offending (see Table 4.46). There were several significant differences between the two types of offenders. There was a larger proportion of African Americans and Caucasians among the violent offender population. Children removed from the home due to sexual abuse were significantly less likely to be incarcerated for a violent offense. Children who began their foster care careers and later changed to probation supervised care were significantly more likely to be among the violent offender group (OR=14.2).

To attempt to further understand variation between CYA entries by violent offense, a logit model was constructed to explore the likelihood of incarceration for a violent primary offense. Youth of Other ethnic groups, and children placed for reasons of other or sexual abuse were dropped from the model due to the small number of cases in these groups. The final model included 462 first admissions to CYA; 285 (62%) for a violent primary offense. Interactions between ethnicity and having a single parent; having 3 or more placements and under the age of 13 at the time of first sustained petition (young); young and a history of previous non-CYA incarceration; young and 3 or more sustained delinquency petitions; a history of non-CYA incarceration and 3 or more delinquency petitions, a change to probation supervision and number of petitions; and 3 or more sustained petitions with 3 or more spells in care were included in the model. Odds over one indicate an increase in the likelihood that someone is incarcerated for a violent offense. The model Likelihood Ratio Chi-Square=73.9, d.f.=14, ($p=.20$) indicated that the model fit the data relatively well. An approximation for the r-square for a regression analysis, called a max-rescaled r-square indicates that about 22 percent of the variance was explained (see Table 4.47).

In the model, children of color were less likely to be among the violent offender population unless they came from a single parent home—which increased the risk about four times after taking the main effects into account. Young offenders who also experienced several placements were almost three times more likely to be incarcerated for a violent offense. Changing to probation care generally decreased the likelihood of being a violent offender among youth without a long history of prior delinquency petitions.

Table 4.47 Logistic Regression Model: Violent Primary Offense

Variable	n	Odds Ratio
Age at 1st Sustained Petition		
Over 13 years old	260	1.00
Less than 13	201	.93
Ethnicity		
Caucasian	136	1.00
African American/Hispanic	326	.54*
Single Parent Home		
No	115	1.00
Yes	347	.33 (p=.08)
Change in Supervising Agency		
No	296	1.00
Yes	166	.31*
Number of Spells		
<3 Spells	317	1.00
3+ Spells	145	1.10
Number of Sustained Petitions		
<3	291	1.00
3+	171	.34*
History of Incarceration		
No	256	1.00
Yes	206	.33*
Interactions		
Eth/Single	236	5.02*
Young/Spells	56	2.45 (p=.06)
Young/Incarc	51	2.05
Young/Petitions	55	.28*
Incarc/Petitions	116	1.85
Probation/Petitions	94	1.46
Petitions/Spells	77	.37

N=462

-285 violent

Likelihood Ratio Chi-Square 73.9, DF=14 (p=.21) max r-sq=.22

* Indicates significant difference at p<.05

A second logistic regression model was constructed after excluding those youth who had probation cases prior to CYA entry. The final model included 296 first admissions to CYA; 210 (71%) for a violent primary offense. Interactions between ethnicity and having a single parent; having 3 or more placements and being removed for physical abuse; under age 13 at first sustained petition and having a substance abuse issue at entry; three or more sustained delinquency petitions and three or more placements; a history of non-CYA incarceration and 3 or more delinquency petitions; reunified after a first spell and having a single parent; reunified after the first spell and having a substance abuse problem; and removal for physical abuse and having a substance abuse problem were in the model. Odds over one indicate an increase in the likelihood that someone is incarcerated for a violent offense. The model Likelihood Ratio Chi-Square=62.4, d.f.=17, ($p=.20$) indicated that the model fit the data relatively well. An approximation for the r-square for a regression analysis, called a max-rescaled r-square indicates that about 27 percent of the variance was explained (see Table 4.48).

This model differs significantly from the model including probation cases as both the first exit reason and the removal reason are significant factors among CWS cases. As was seen in the maltreatment analyses, neglect in and of itself is a stronger predictor of incarceration for a violent offense than physical abuse. Among child welfare only foster youth, 75 percent of the youth incarcerated with homicide as a primary offense were removed from their home of origin due to neglect. Among foster youth, however, the impact of the removal reason varies by the degree of permanency in the first spell (number of placements) and whether or not the youth was assessed as requiring substance abuse counseling upon entry to CYA.

Table 4.48 Logistic Regression Model: Violent Primary Offense: CWS Only

Variable	n	Odds Ratio
Age at First Sustained Petition		
Over 13 years old	169	1.00
Less than 13	131	.93
Ethnicity		
Caucasian	76	1.00
African American/ Hispanic	220	.94
Single Parent Home		
No	86	1.00
Yes	210	1.89
Removal Reason		
Neglect	229	1.00
Physical Abuse	67	.36*
Reunified After First Spell		
No	130	1.00
Yes	166	1.13
Number of Placements in First Spell		
< 3 Homes	218	1.00
3+ Homes	78	.88
Substance Abuse Counseling Need		
No	195	1.00
Yes	101	.19*
Number of Sustained Petitions		
<3	219	1.00
3+	77	.20*
History of Incarceration		
No	188	1.00
Yes	108	.23*
Interactions		
Eth/ Single	151	3.72 (p=.09)
Young/User	34	.35
Reunified/Single	116	.25 (p=.06)
Reunified/ User	51	13.86*
Incarc/Petitions	52	5.36*
Phys/ Placements	23	4.13 (p=.07)
Phys/User	27	5.24*
Placements/Petitions	15	.38

N=296

-210 violent

Likelihood Ratio Chi-Square 62.4, 17DF, (p=.20) max r-sq=.27

* Indicates significant difference at p<.05



Chapter 5: Discussion and Implications

Children and youth served in the child welfare system who later become serious and violent offenders are of great concern. These youths experience perhaps the most negative developmental outcome (with the exception of death) among children who experience maltreatment. Understanding what happens to youth with child welfare records who later enter CYA also vividly illustrates the importance of considering short-term and long-term outcomes for program and policy planning. For example, a lack of repeated contact with child welfare is only truly positive if that child or youth also successfully navigates the transition to young adulthood. The need to understand these outcomes is particularly clear when examining child welfare service outcomes (e.g., re-abuse or reunification) for older children and adolescents who are more likely to experience a wide variety of alternative outcomes such as incarceration, adolescent parenthood, or suicide.

From Maltreatment Report to Adolescent Incarceration

In the ten counties, youth with child welfare records (including uninvestigated reports) comprised about 22 percent of the entries into CYA. The absolute numbers and proportions presented in Chapter 4 are small, but CYA facilities are reserved for the most serious and chronic of juvenile offenders--a small proportion of the population of juvenile offenders and well less than one percent of all Californias youth. The fact that 22 percent of these youth had prior Child Welfare contact in the previous six years is thus rather extraordinary--and calls into question what future research might uncover regarding the proportion of juvenile offenders at all levels with prior child welfare contact since birth. Because our child welfare data do not go back to birth for this sample and cannot account for children who were served in a non-study county, this 22 percent estimate of the proportion of CYA entries with child welfare records is certainly an

undercount. Previous estimates indicate that almost 40 percent of African American children, about 16 percent of Caucasian and Hispanic children, and nine percent of children of Other ethnic backgrounds experience a child maltreatment report by the time they reach Kindergarten (Berrick et al, 1998). The inability to trace children less than seven years suggests that a sizeable proportion of this study's CYA population who did not have contact after age seven may have had child welfare contact prior to age seven.

Child Welfare Services for Older Children

The bulk of this discussion is devoted to children who later enter CYA, but some comment is warranted regarding the child welfare service pathways of all older children reported for maltreatment. Analyses of child maltreatment reports among older children showed that, like those for very young children, service pathways of older children differ by age and ethnic subgroups (Berrick et al, 1998). In contrast to previous analyses of young children, however, gender is an important factor in reporting and service patterns of older children.

Maltreatment type. Despite the fact that neglect reports gradually declined among older children and youth, neglect still accounted for a major portion of maltreatment reports on older children. The argument might be made that older children are less at risk from neglect due to their increased ability to care for themselves, but this belies the high proportion of cases in the present study who are deemed at sufficient risk to warrant services. Neglect cases make up the majority of reports, investigations, services and ultimately the largest proportion of children with investigated reports who enter CYA. The present study's findings agree with previous research (e.g. Crouch & Milner, 1993; Rivera & Widom, 1990) that for some children, neglect is at least as harmful as other forms of maltreatment.

Both physical and sexual abuse reports increased in frequency among older children, but sexual abuse reports increased most dramatically. Previous research has noted an increased likelihood of services to sexual abuse cases (Drake, 1995)-- more prevalent among older populations-- but this study found that to be largely dependent on the age of the child. For example, children reported for sexual abuse between 7 and 10 years of age were more likely to be referred for services, but children over the age of 11 were not significantly more likely to receive services than children reported for other maltreatment reasons. The present data allow several interpretations. It may be that the reports on older children more frequently occur due to stranger advances, custodial issues among divorced parents, or are retrospective (e.g. made on incidences which occurred at an earlier age so that the child or youth is no longer at risk of victimization). Once served, children over the age of seven years with reports of physical abuse and particularly sexual abuse were more likely to enter foster placement. This latter finding underscores the need to examine service trajectories at each stage in the assessment process in order to understand the impact of case characteristics like maltreatment type.

Ethnicity. Research on younger children in the child welfare system has shown that African American children are more likely to progress from child abuse report, to investigation, to services, to foster care placement (Berrick et al, 1998). While still more likely to be reported and served, older African American children are less likely to enter foster care than older Caucasian children and have an equal likelihood of entering foster care placement following services as Hispanic children. Other researchers have suggested that older African American children may be less likely to receive services equal to their need (Courtney & Barth, 1996). If this is true, than the perceived increased risk due to being young may counteract a hidden

tendency to underserve African American children and youth.

One possible explanation for underserving this population may be related to the fact that African American children across age groups are more likely to be reported for neglect. More severe economic circumstances (DHHS, 1996) coupled with a higher likelihood of parents using certain illegal drugs (Vega et al., 1993) may place African American children at greater risk for reports of neglect than children of other ethnic groups. As young children are less able to compensate for lack of parental provision of basic needs, neglected African American children under the age of six may be more likely to receive services beyond an investigation. Conversely, older African American children reported for neglect may be perceived by child welfare authorities as less frequently requiring services due to a decrease in vulnerability.

The disproportionate number of African American children in foster placement compared to their proportion of the population (Needell et al., 1996) may also play a role in decreasing services to older African American youth. In recent years, there has been a great deal of political and research energy toward attempting to understand and reduce minority representation in various social service, adult and juvenile justice systems (Courtney et al, 1996; Walker et al., 1996). Neglectful families are often particularly difficult to serve successfully due to more long-term underlying issues of substance abuse and poverty. It is possible that there are unintended consequences of the goal to decrease the disproportionate numbers of African American children among higher levels of child welfare services. The desire to appear to serve all ethnic groups more equally, coupled with a lower likelihood of intervention success in neglectful families, may discourage workers from opening African American children's cases to services to avoid placing children out of the home in all but the most pressing circumstances.

The reduction in services to older African American children and youth may also be attributed to circumstances outside the child welfare system. Older African American children have been shown to have a greater risk of contact with the juvenile justice system than other ethnic groups (Dembo, 1988; Walker, Spohn, & DeLone, 1996). If these children become involved in the juvenile justice system, they may be less likely to be served by the child welfare system. Because this study did not include county level probation data, it is impossible to assess whether older African American youth reported for maltreatment are less likely to receive child welfare services because they are already under the supervision of probation agencies.

Hispanic children and youth comprise an increasing proportion of the child welfare and the incarceration populations in this state. These children are more frequently investigated and more likely to be reported for physical abuse yet have lower rates of services than either African American or Caucasian children. If the outcomes for this population were positive, the lowered rate of service might reflect a decreased risk or level of maltreatment, but their risk of entry to incarceration was almost as high as African American youth. Given the large population of Hispanic children in the study counties as well as the state, the relative inattention to this group in the research is worrisome. It may be that the child welfare system suffers from particular difficulties responding to crises in Hispanic families. Child welfare workers perceptions of the role of the family and of corporal punishment in these communities might complicate an unbiased assessment of risk; language barriers may enhance the difficulty of thoroughly assessing cases; distrust of authorities and loyalty to family may hamper the willingness of older Hispanic children to cooperate with child abuse investigations; these families are particularly mobile, which may limit the ability to adequately follow cases across county, state, or national

borders; or other explanations may hold.

Gender. Differences in reporting patterns and service rates by gender become increasingly evident after age ten. Among teenagers, females comprise the majority of child abuse and neglect reports. Females were not significantly more likely to have their cases opened than males, but were more likely than males to be placed into foster care once opened for services. Among youth in foster care, females were three times more likely to have been removed for reasons of sexual abuse. Mirroring the trend for all sexual abuse cases, older female youth reported for sexual abuse were not significantly more likely to receive services, but among those served, a higher proportion were placed into out of home care. Among youth exiting from their first spell in care in these counties, females were 50 percent more likely to run away. A similar finding was reported by Widom and Ames (1994) who found that children who were sexually abused were at much higher risk of running away as teenagers.

Female adolescents comprise the majority of the incoming older child welfare population and appear to have different service trajectories and outcomes than males. Developmental psychologists have found that females may have a tendency toward internalizing behaviors in response to trauma at young ages while boys may display more easily recognized externalizing behaviors (Berton & Stabb, 1996; Pakiz et al., 1997; Wolfe & McGee, 1994). It may be that the increasing representation of older females in the child welfare system is attributable to later recognition and reporting of maltreatment because outward indicators of maltreatment may not develop until middle or late adolescence. Second, the increased numbers of females may reflect a heightened risk of victimization for females during the teen years. Or, given the propensity of males to begin delinquent behaviors at an earlier age (Pakiz et al., 1997), the decline in

maltreatment reports for males may partially reflect the movement of older maltreated males to supervision by agencies serving delinquent populations.

Entry into CYA in 10 California Counties

One of the primary objectives of this study was to examine the impact of different levels of child welfare services on the risk of incarceration in CYA. Taken as a whole, children and youth served at home and not placed or those placed in foster care in the 10 county sample were not more or less likely to become incarcerated than children who never received services after investigation. This would seem to suggest that despite a gap of almost 20 years and major program changes, the findings relative to service level and juvenile incarceration in the ten counties mirror those of Widom (1991) and Runyan and Gould (1985), who also found few differences in later delinquency according to service level. Looking beyond the overall relationship between services and incarceration, however, revealed different patterns of risk for incarceration and among violent versus non-violent offenders occurring between various, age, ethnic, gender and neighborhoods within the child welfare population. These were not previously reported.

Ethnicity. The rate of entry into CYA among children with investigated abuse reports compared to children in the general population doubles for African American, Caucasian and Hispanic children. This is consistent with the repeated association of higher risk of delinquent behavior among children who have been maltreated (Jonson-Reid, in press). The higher levels of incarceration for African American and Hispanic youth are also consistent with other studies which indicate that youth of color face an increased chance of higher penalties (e.g. incarceration) after official contact with the juvenile justice system (Pope & Feyerherm, 1992;

Walker, Spohn & DeLone, 1996).

In a multivariate model, African American and Hispanic children who experienced higher levels of service involvement in the child welfare system had lower rates of entry to CYA than those receiving only an investigation. Caucasian children and children of other ethnic groups had higher rates of entry if there was a history of foster placement. This finding was similar to a study of child welfare exits in Arizona, which found that while African American children in foster care had worse child welfare service outcomes (such as length of stay in foster care), they were less likely to experience negative developmental outcomes like transfer to juvenile corrections (McMurtry & Lie, 1992).

The ethnic differences found in this study cannot be explained by maltreatment type as the entry rate to CYA was higher among cases of neglect which received services, lowest for sexual abuse cases served and almost equal among physical abuse cases. African Americans were most frequently reported for neglect, Caucasians had the highest rate of sexual abuse reports, and physical abuse reports were more common among Hispanic youth. None of the differences in rate of entry by ethnicity and service level were large once gender and age at time of first report were considered, but further study is warranted to understand why there is an apparent enhanced protective factor for children of color who are served beyond investigation.

A few controversial researchers would suggest that those youth who entered CYA in the present study were at some level destined to do so according to fixed biogenetic traits (Herrnstein & Murray, 1994). Yet, the varying response to services among different ethnic groups, who are typically reported for different types of maltreatment, seems counter to the notion of children predestined for crime. In other words, there is no reason to believe that child welfare services for

Caucasian youth were ineffective in altering the risk of incarceration because all the Caucasian youth destined to enter CYA were equally distributed among service levels; nor is there reason to believe that more intensive services to children of color were effective in reducing the risk of incarceration merely because fewer children with biogenetic predispositions to crime were served beyond investigation. Findings in the present study may suggest instead that abused and neglected children of color experience poor outcomes at a higher rate than Caucasian maltreated youth largely due to a greater number of cumulative risk factors (Rutter & Rutter, 1993), which are at some level malleable to change through intensive services. Support for this hypothesis can be found in prior research which discovered that much of the ethnic gap in rate of offending can be explained by living in an underclass neighborhood (Peeples & Loeber, 1994). In other words, the greater the level of risk factors, the more likely an individual is to develop antisocial and/ or illegal behaviors.

Gender. Although males were at higher risk for entry into CYA, the change in risk for females as the intensity of services increased was quite dramatic. The scarcity of research on gender differences among juvenile offenders complicates interpretation. Some previous work indicates that timing (in terms of age) of abuse experiences has a differing impact for females versus males. Females have been shown to be at greater risk of antisocial behavior following maltreatment (particularly sexual abuse) in preadolescence (Pakiz, Reinherz, & Giaconia, 1997). Other studies indicate that adolescent females may be particularly vulnerable to threats to their self-image (McGee, Feehan, Williams & Anderson, 1992). Therefore, some of the increased risk for females in this sample may be attributed to the age cohort in this study. Another possibility is that the type of abuse impacted the outcome, however, there were no significant interactions

between abuse type and gender. Children and youth reported for sexual abuse (most frequently associated with gender differences in report reasons) had the lowest rate of transition to CYA. Another potential explanation for the gender variation has to do with when the maltreatment was recognized and reported. As aforementioned, it is possible that females display fewer external behaviors that would draw attention to them, meaning that they may experience longer periods of exposure to abuse or neglect prior to official intervention. Other studies have found worse developmental outcomes for both severe and chronic maltreatment populations (Cicchetti, 1996), therefore it may be the chronicity of the maltreatment which increases the likelihood of incarceration among females. Because the sample for this study begins at age seven, these results could not fully test this question.

There may be an additional gender difference created by the perceived need for intervention. Children reported for sexual abuse, including females, were less likely to move on to CYA and are also likely to receive services. For females not reported for sexual abuse the likelihood of services may be greatly reduced due to a possible tendency toward initially internalized reactions to maltreatment (Wolfe & McGee, 1994) in conjunction with a tendency to see females as less of a problem. For example, some educational research has shown that females are much less likely to receive attention from teachers than males (Sadker & Sadker, 1993). This trend may carry over to services in other agencies like child welfare. It is therefore possible that females receive fewer rehabilitative services allowing problems to escalate to more overt manifestations.

Female violent offenders (over 55% of CYA wards are violent offenders) are more frequently involved in crimes against family members (Loper & Cornell, 1996). If we assume

that children involved in the child welfare system have perhaps more serious family dysfunction, then perhaps conflicts resulting in violence are more likely. Female adolescents in such families may therefore be at greater risk for committing violent crimes which then lead to incarceration.

Maltreatment type. Investigations of child welfare pathways for older children found that neglect comprised a large proportion of the caseload at each service level. Contrary to hypotheses regarding the causal relationship between physical and sexual abuse and later delinquency (Widom, 1989), neglect increased the risk of incarceration in the 10 county analysis. There are several potential explanations for this finding. First, examination of children with multiple reports indicated that over thirty percent of the sample was reported for more than one type of maltreatment over the course of six years. Second, child welfare workers are forced to choose a dominant report reason for entry into the administrative data base. It may be that those children experiencing neglect were also experiencing other forms of maltreatment.

Even if neglect was the only officially documented form of maltreatment for those entering CYA, there may be unreported emotional or psychological abuse. Some studies have indicated that the combination of psychological maltreatment with other forms of abuse increase the risk of developmental damage (Crittendon, Claussen & Sugarman, 1994). Psychological abuse was impossible to measure in this study but it is plausible that it may coexist with neglect. Some cognitive/ moral development researchers have proposed that the meaning attached to an event is as important as the event itself in the etiology of behavior (Astor, 1994; Noam, 1996). Perhaps children experiencing physical or sexual abuse are able to develop better coping skills due to the ability to build an internal explanation for discrete abuse events as opposed to the chronicity of neglect. Children suffering physical and sexual abuse may also experience periods

of positive relationships with their care givers which provide needed attention. Even among physically and sexually abused children who lack occasional positive relationships, increased parental supervision may still buffer involvement in certain high risk behaviors. Conversely, neglected children may lack both affection and supervision. In other words, even negative attention may be better than no attention at all in regards to delinquent outcomes.

Some of the impact of neglect on older children's risk of incarceration in this study may also relate to maturation issues. As a child grows older and is able to compare their own relative inattention from parents (as well as potential lack of material goods important to teen culture such as clothing) compared with other peers, the result may be a sense of emotional abandonment and isolation that is equal to or more powerful than children who are physically violated. Such a pattern may underlie research findings which indicate that chronically neglected children respond differently at different ages, moving from more passive reactions to aggressive behavior in later childhood (Crouch & Milner, 1993).

Neglected children may also experience greater deficits in areas which have the potential to mitigate some of the negative outcomes of maltreatment. School failure is highly correlated with delinquent outcomes (Gerstein & Briggs, 1993; Snyder & Sickmund, 1995) and, conversely, school success is a means of overcoming past trauma or dysfunctional homes (Werner, 1993). Studies reviewed in an examination of child welfare and young children indicate that stimulation, nutrition and emotional nurturance are key aspects of intellectual and emotional development (Berrick et al, 1998). Neglected children often suffer deficits in all these areas. Older children, having experienced such conditions for some time may therefore lag in educational achievement.

The impact of neglect may also be related to the level of restorative or supportive services provided to this group of maltreated children and youth. Many researchers have decried the difficulty in defining and effectively assessing neglect cases (Crouch & Milner, 1993), which may lead to a higher likelihood of service to physical or sexual abuse cases which are easier to objectify. There is some evidence, however, that the lower likelihood of restorative services for neglect cases persists even among children removed from their homes. One study of children and youth in foster care found that children removed from their homes due to sexual or physical abuse were much more likely to receive mental health services than children removed due to neglect (Garland, Landsverk, Hough & Ellis-MacLeod, 1996). Physical and sexual abuse may generally place a child at higher risk for delinquent behavior; but, children reported to child welfare authorities for physical and sexual abuse are frequently provided more intensive services. This pattern of service provision may diminish the criminogenic effects of abuse relative to neglect. This hypothesis finds some support in our later discussion of foster care and CYA. Among children placed into foster care one would anticipate a greater level of severity of family dysfunction and maltreatment. In the statewide analysis, physical abuse does indeed have a similar associated level of risk for incarceration as neglect.

Multiple reports and incarceration. About one-third of the sample had more than one reported type of abuse during the study period. The proportional hazards statistical technique examining risk of entry into CYA allowed us to control for the time a child was eligible for a maltreatment report. Therefore while we cannot assume that we have captured an entire child abuse reporting history, we were able to compare subgroups of children with multiple reports within the study period.

Children with more than one report either had the same report reason for subsequent reports or the report reason changed. Among children whose report reason changed, those reported only twice had a greater likelihood of incarceration. In other words, controlling for time of exposure to reporting, children with more than two reports and multiple maltreatment report reasons seem to form a different subtype than those with only two report incidents and two report types. Those children with more than two reports and different report reasons may suggest a group of children experiencing more general, but low level forms of maltreatment that do not lead to intensive services or permanent removal from the home. Conversely children reported only twice for two reasons may comprise a group of children actually experiencing significant levels of abuse types simultaneously. If this group of children with two reports and two report reasons represents children simultaneous experiencing major forms of abuse and neglect, then the aforementioned finding is consistent with research which reports a heightened risk of poor outcomes for children experiencing multiple types of maltreatment (Crittendon et al, 1993; Kurtz et al, 1993).

It is also possible that a change in report reason reflects progressive severity of maltreatment, though this seems inconsistent with the patterns of report reasons found in this study. Among children with more than one maltreatment report, a neglect case was often re-reported for physical abuse. Conversely, a second report on a physical abuse case was frequently for neglect. A second report on a sexual abuse case was equally likely to be for abuse or neglect.

Those youth who eventually entered CYA in the present study appear to be a sub-population which consistently falls beneath the threshold of being served yet may be experiencing significant family dysfunction and some level of maltreatment. The number of

youth with over four reports prior to CYA entry was almost four times as high as the number of children with four or more reports who did not become incarcerated. Thus, the youth with investigated maltreatment reports and later entry into CYA entry are largely concentrated in the group of chronic child welfare cases.

The analyses of risk of entry into CYA following child welfare intervention provides a mixed picture of the impact of the child welfare system in the 10 study counties. Chronic maltreatment report patterns and certain interactions between recurrent reports and abuse types increase a child's risk of incarceration. Under guidelines which support intervention only in cases where the immediate threat to life or safety is compromised, many older youth experiencing less severe forms of maltreatment may repeatedly come to the attention of mandated reporters but never receive substantial services.

Among those children and youth who are served beyond an investigation, the findings are more positive. Given the increased risk among maltreated children for later delinquency (Jonson-Reid, in press) and that children in foster placement had families with more cumulative problems (Zuravin & DePanflis, 1995), one might expect a higher overall rate of CYA involvement among youth receiving services and/ or foster care. Instead, there were no significant differences in risk of incarceration among Caucasians whose cases were investigated only, served, or placed into foster care and a decreased risk for African American and Hispanic children who received services beyond an investigation. Child welfare intervention may be buffering what would be even higher rates than those seen among the unserved investigated population.

CYA entries from foster placement in 10 counties. Although there were interesting

bivariate findings regarding children who left foster placement and later entered CYA, the absolute numbers were too small to be analyzed with multivariate methods. Yet, a more in-depth descriptive examination of this group raised several questions for the statewide analyses of foster care and CYA.

Only about twenty females entered CYA from foster care within the 10 county sample. In contrast to the proportion of females in the general CYA population (about 4 percent), females comprised over 11 percent of entries into CYA after foster placement. Time from first maltreatment report, including foster care, to entry into CYA makes the gender differences even more striking. For males the median time was almost five years--suggesting that while the stay in foster placement immediately prior to CYA entry may have been short, the length of potential exposure to child welfare intervention was quite long. Female youth had a median time of only 20 months from the time of the first maltreatment report to entry into CYA, indicating a very different pattern of detection and service. As aforementioned these females may represent youth who are victims of chronic but undetected maltreatment. If this is true, it follows that by the time these females are reported, the child welfare system has little opportunity to intervene. Additionally, Chamberlein and Reid (1994) suggested that among females with delinquent behaviors prior to foster care, aggressive behaviors actually worsened after intervention. Thus older females in foster placement may more rapidly fail due to running away or committing a violent offense.

Findings regarding some of the reasons for exit from foster placement prior to entry into CYA were also somewhat unanticipated. It is reasonable to expect that among exits from foster or group care which are coded as incarceration, many might include those who went to CYA

these youth (13) reflect those who moved directly from foster placement into CYA at a rate of over 100 per 1,000 youth with this exit type. This group, however, was a very small proportion of the entries into CYA. The second highest rate of entry to CYA by exit reason was among runaways--a rate of 21 per 1,000. Again this finding, though disturbing, is not surprising. For those runaways who remain homeless or return to totally unsatisfactory homes, criminal activity may increase due to opportunity as well as survival. Although the rate of entry to CYA among those reunified was only 8 per 1,000, this group comprised the majority of those who entered CYA from foster care. Other researchers have reported a higher likelihood of reunification among older youth with the assumption that either their desire to go home will lead to running away or that they are in no danger and so no longer require state expenditure (Kurtz et al, 1993; Courtney & Barth, 1996). It is possible that these youth would have become serious offenders even if they had stayed in care. Yet, this seems contrary to the following discussion of the statewide foster care sample from which children who were reunified were more likely to enter CYA. This suggests that child welfare agencies and partner agencies might influence the outcome for older youth by eliminating or offsetting the risks faced upon return to their family or community of origin.

The children and youth placed into foster care in the 10 county sample reflect one of two groups--(1) children with earlier undetected placement spells who went home and are now returning to care; or, (2) children without prior foster care experience. Had the majority of youth in foster care in the 10 county sample experienced foster care as very young children, it seems less likely that the majority of placement histories would be characterized by requiring more than one report prior to entry and such short spells in care. This portion of the study may be capturing

a group of young people who perhaps missed earlier detection and then, once reported, were judged too old to justify services. Preliminary analysis from a statewide foster care to CYA study indicated that only about 20 percent of those entering CYA after age seven had prior placements between birth and six years of age. This lends support to the hypothesis that a large portion of the youth who moved from foster placement to later CYA in this sample had their initial contact with child welfare authorities after age seven. The combination of increased exposure to the abuse or neglect and lower levels of service provision thus characterize a cohort of youth who were slow to enter foster care and quick to exit. If this is the case, it seems unlikely that foster placement could have had a protective impact for these youngsters.

10 County CYA Population: CWS and Non-CWS

In addition to examining entry into CYA, this study investigated differences among offender characteristics according to CWS history. There were several statistically significant though small differences between the population with CWS records and those without CWS records:

Mother's age at birth. Matching the data with birth records produced few differences among the variables recorded at that time (prior to 1988 fewer items from the birth certificate were included in the statewide data base). Incarcerated youth were, however, more frequently born to a woman under age 18. This finding is supported by other research which indicates increased risk for poor outcomes among children born to teen mothers (Haveman & Wolfe, 1994). Although the proportion of children reported for maltreatment who were born to teen mothers was greater than the proportion in the general population, incarcerated youth had the highest proportions born to teen mothers regardless of CWS involvement and did not differ

among violent and non-violent offenders. Adolescent motherhood may be a powerful predictor of overall delinquency, but may not be responsible for varying degrees of offenders within the population. Further interpretation of this relationship is likely confounded by the association of young mothers with family poverty, increased family size, and lower parenting skills.

Age at delinquency onset. There was a slightly higher proportion of child welfare cases with early sustained petitions among the CYA wards who had child welfare histories, which supports Rivera and Widom's (1990) findings. This suggests that children in the child welfare system may have different delinquency trajectories. Research on physiological as well as developmental damage to maltreated children suggests that males may show greater behavior disorders due to earlier maltreatment (Cicchetti, 1996). Given the large proportion of males in CYA, early onset offending may be tied to earlier abuse incidents which cause developmental damage among the males in this sample.

The combination of early official juvenile justice contact and more sustained petitions suggests that there was a subgroup in the present study who were almost simultaneously involved with the juvenile justice and child welfare systems. It is, however, not known whether the agencies were aware of their simultaneous involvement with these children and their families. This group raises some interesting questions for further research regarding how coordination of services between the juvenile justice and child welfare systems might mitigate later more serious offending.

Ethnicity. African American and Caucasian incarcerated youth were quite likely to have had prior CWS contact; a minimum of 22 percent of incarcerated African American youth had CWS records and child abuse reports and almost 30 percent of incarcerated Caucasian youth had

child welfare histories. Given how much more likely African American children are to come into contact with the child welfare system than Caucasians, the large percentage of incarcerated Caucasians with child welfare contact was somewhat surprising. The inability to measure mobility among CWS families may be producing an undercount of CWS history for certain ethnic groups. Census tract analysis of these cases, however, revealed a relatively low mobility rate among very low-income areas which, in turn, were highly correlated with populations of color. Alternatively, as seen in the proportional hazards model of incarceration it appears that delinquent outcomes for children receiving child welfare services may vary substantially by ethnicity. Other findings suggest that African American children are reported at higher rates due to either biases among mandated reporters or the relationship between poverty and reporting (Sedlak & Broadhurst, 1996). Caucasian children with official child welfare intervention may have more severe home situations and therefore be more likely to become serious youthful offenders.

10 County: Violent versus Non-violent Offenders

Overall, youth with child welfare histories and youth reported for physical or sexual abuse were less likely to be incarcerated for violent offenses. This is contrary to the violence begets violence delinquency literature that would suggest that victimized youth would be more likely to be aggressive (Jonson-Reid, in press). Perhaps having an investigated maltreatment report is indicative of positive adult contact (someone who cares enough to intervene), which buffers the impact of abuse. If this is true, than unreported (and perhaps uninvestigated) physical or sexual abuse might be higher among violent offenders.

Violent offending no SED. In the model without Special Education data, being

assessed as requiring substance abuse counseling increased the likelihood of being among those incarcerated for a violent primary offense. At one level this seems counter intuitive as one might expect a substance user to be more involved in property crimes to support the purchase of drugs. There are reasonable explanations for the current finding. Some of this effect may be attributed to the substance abuse problem scale used by the CYA as it includes convictions for possession and sales in the scoring. It is therefore possible to be assessed as requiring counseling by involvement in drug-related crime without necessarily using the drug itself. Having a substance abuse problem may also be correlated with gang participation which may lead to violent offending in the form of drive by shootings. Gang violence may lead to incarceration for a violent offense for someone who would be no more likely as an individual apart from the group to commit a violent crime. In other words, there may be different types of violent offenders based upon the motivation for the crime and presence of a gang influence.

There have, however, been other studies which found a similar increase in violent offending related to or associated with substance abuse. One reason offered for the relationship was a tendency of drugs to lower the threshold of self-control (also called the disinhibitory effect) which would normally prevent violent acts (Cornell, 1990). Another explanation for this finding is that both increasingly serious juvenile crimes and substance abuse follow a parallel course of development (Loeber, Van Kammen, Huizinga, Krohn, 1993). Reports of violence on school campuses also appear associated with the ease of obtaining and student usage of illicit drugs (Snyder et al., 1996). In other words, substance abuse does not cause the delinquent act, but rather is another high risk behavior engaged in by the adolescent offender.

The heightened risk of violence for youth with sustained petitions before the age of 13 is

supported by the delinquency literature which has linked violent offending to early onset offenders (Cornell, 1990; Rivera & Widom, 1990). However, among all CYA entries the impact of early onset offending on the likelihood that a youth was incarcerated for a violent offense was mediated by prior incarceration history, substance abuse problems, and gender. The impact of incarceration may reflect a reduced opportunity for violent crime or describe a group of juveniles who are chronic property crime offenders.

The interaction between substance abuse problems and early onset offending is more difficult to interpret given the increased risk of incarceration as a violent offender due to substance abuse in the model. This finding is consistent with Loeber, Van Kammen, Huizanga, and Krohn's (1993) conclusion that (at least among some offenders) there is a parallel development of substance use and delinquency related to underlying causes. The combination of these factors may then be indicative of a particular subgroup of chronic but not violent offenders. Such a subgroup is consistent with prior research showing an association between early substance abuse and theft (Kandel, Simcha-Fagan, & Davies, 1986).

The model of incarceration for violent offending (without the SED data) among all CYA first admissions was not powerful despite the inclusion of several variables significant in past research. Several hypotheses arose for the lack of explanatory power in this model. There may be a serious level of offending which typifies all incarcerated youth at this level. In other words, there may be a history of violent offending among some of the youth not incarcerated for violence at the present time. Second, gang violence in urban areas may have changed the composition of the violent offender population. More violent offenses may be occurring due to group rather than individual motivation and predisposition. If violence becomes normative in

certain subgroups, then traditional discriminators between violent and non-violent behavior may not apply (Sanchez-Jankowski, 1991; Sanders, 1994). It is also likely that a number of the comparison (non-CWS) cases may actually have had child maltreatment reports prior to age seven or in different counties. Some studies of incarcerated youth have estimated the percentage of youth with prior maltreatment experiences from 20 percent to as high as 80 percent (Widom, 1989a). If the higher estimates are accurate, then the majority of non-CWS cases in this study were maltreated but never reported; such cases may not differ enough from reported and investigated cases to produce a significant multivariate model. Finally, despite the inclusion of many variables important in previous research, even more variables were not available--such as parental criminal history, domestic violence, school records, developmental and mental health assessments, health or biogenetic tests.

Violent offending with SED. A second model utilizing a sample restricted to those 18 or younger in 1996 had to be constructed to examine the potential impact of having been identified as seriously emotionally disturbed by public education agencies on the likelihood of incarceration for a violent offense. (As detailed in Chapter 3, this restriction was necessary in order to take into account the time period for which the SED data were available.) A direct comparison with the first model is complicated by the introduction of SED status because of the rare occurrence of females in CYA coupled with the rarity of being labeled SED precluded gender from inclusion in the second model. The second model fit the data better and gained a bit in explanatory power. This supports the latter argument above that the previous model of violent offending was relatively poor due to the lack of ability to include other significant risk factors.

The overall effect of identified substance abuse problems and age at first sustained

petition declined considerably in a model controlling for SED status. Taking into consideration interaction terms, however, both substance abuse and age at first sustained petition were still positively related to incarceration for a violent offense. SED status generally decreased the likelihood of incarceration for a violent offense among youth without prior incarceration or early onset of offending. The vast majority of youth identified as SED with more serious offense histories prior to CYA entry were incarcerated for a violent offense. In addition, the rate of youth with SED histories was higher among youth with earlier and more serious juvenile crime histories (over 2.3%) than among the general CYA population in the 10 counties (1.3%).

Our rate of 1.3 percent of CYA youth having SED histories is substantially lower than the estimated need for mental health services within the child population (Stouthamer-Loeber et al., 1992) and estimates of major mental disorders among delinquents (Davis et al., 1991). It is important to note that our data reflect only those identified as emotionally disturbed under public education guidelines. Many more youth may have undetected severe mental health problems due to contact with disciplinary and law enforcement intervention prior to potential identification for mental health needs. Indeed at least one study indicates that few families of children displaying delinquent behaviors seek mental health services (Stouthamer et al., 1992).

This small number of CYA youth with SED histories, however, raise some important questions. According to 1994 Department of Education statistics, 71 percent of students categorized as seriously emotionally disturbed are Caucasian (Reschly, 1996). Taken as a percentage of ethnic minority students, there is little difference between the percentage of African American students who are SED (.9%) and percentage of Caucasian students who are SED (.7%). Hispanic students are less frequently identified as SED (.3 %) (Reschly, 1996).

Given these demographic profiles of the SED population, it was somewhat surprising that 63 % of the CYA youth with SED status were youth of color. This may be reflective of increased neurodevelopmental and environmental risk factors for ethnic minority children (DHHS, 1996; McLeod & Edwards, 1995; Perry, 1997; O' Keefe & Sela-Amit, 1997). It is possible that specialized educational services may be less effective in producing positive transitions to late adolescence and young adulthood among children facing these multiple levels of risk.

Another question raised by these data concerns why these youth identified as having a serious emotionally handicapping condition progress through the juvenile justice system rather than mental health settings. The education system has separate policies regarding the discipline of a child in special education because of the possibility that their offense might be related to their disability (IDEA, 1997). Similarly, within the criminal justice system, insanity or other mental incapacity is often considered when determining consequences for even the most severe crimes (Inciardi, 1990). Perhaps children with unidentified emotional and mental disabilities are progressing through juvenile and criminal justice systems without questions raised regarding the appropriateness of the intervention. This seems less likely for those with officially recognized disorders.

Ecological Model of Incarceration for Serious Youthful Offending: 11 Urban Centers

The 10 county sample was reduced to 11 urban areas in order to consider an ecological model of incarceration and violent offending. Census and community crime data were added to the individual records of investigated maltreatment reports in these areas.

Community variations. Exploring differences among neighborhoods demonstrated that children with investigated maltreatment reports and those who later entered CYA lived in census

tracts with substantially higher indicators of risk than the city or county wide average. The census tract indicators of economic, education, and crime worsened as one moved from the county to the city level, from the city level to tracts with child maltreatment reports, and from those tracts with large numbers of child maltreatment reports to tracts in which the incarcerated youth had lived. There were striking differences in socioeconomic and education indicators between the general county or city population and the incarcerated youth's home tracts. There were much smaller differences between tracts of children reported for maltreatment and those who eventually went on to become incarcerated. This latter finding underscores the frequently noted relationship between poverty and child maltreatment (Coulton et al, 1995). It is therefore not surprising that the contribution of community variables in a model trying to discriminate incarceration outcomes among children reported for maltreatment, was small.

Risk of Incarceration: An Ecological Perspective

Several changes from the county wide to the urban model of risk for incarceration were notable: At the urban level the impact of age at the time of first report for Caucasian youth declined, but the risk for African American and Hispanic youth reported after age 14 increased significantly. Caucasians with a history of receiving services beyond an investigation were more likely to become incarcerated, while the receipt of services somewhat mitigated the higher risk of incarceration for African American and Hispanic children. After controlling for certain community variables, the protective nature of services for African American children increased, while the dramatic increase in risk for Hispanic males fully counteracted the protective impact of services beyond investigation.

In urban areas, the increased risk for African American and Hispanic youths overall

largely offsets the protective influence of child welfare services beyond investigation. One explanation for the change in risk by ethnicity and risk for children moving on to higher levels of child welfare service may be that children coming to the attention of child welfare authorities in more concentrated urban areas have a higher constellation of risk factors. Urban areas tend to have higher crime rates, high school noncompletion, gang problems, higher reported mental health problems among children, family and community poverty and many other risk factors (Jencks & Mayer, 1990; McLeod & Edwards, 1995). Indeed, children of color have been shown to have higher levels of exposure to violence in the community (Berton & Stabb, 1996; O'Keefe & Sela-Amit, 1997). Research has shown that children experiencing risks on multiple levels are more likely to suffer poor developmental outcomes (Cicchetti, 1996; Rutter & Rutter, 1993). Children and youth who live in high risk areas and additionally experience serious maltreatment may be at greater risk for serious delinquent behavior, which the child welfare system is unable to mitigate.

Four community variables were significant, though the risk ratios were not high. Consistent with literature on the import of community violence (Jonson-Reid, in press), the incarcerated youth were more likely to have lived in areas with a violent crime rate which exceeded 12 per 1,000 residents. Although not included in the multivariate model, bivariate correlations indicated that incarcerated children were also slightly more likely to come from areas with a large proportion of adults who never completed high school. Incarcerated youth were also more likely to live in census tracts where the median family income was below \$20,000 per year. Residential mobility and single mother families decreased the risk of incarceration somewhat when considered alone. Together, however, the interaction raised the

risk of incarceration over 60 percent. The interaction of the variables may suggest that it is the concept of social cohesion and neighborhood which is the actual criminogenic force rather than individual measures of family structure or movement (Sampson & Laub, 1994). Delinquency and crime rates have been previously related to highly mobile areas based upon the notion that families and individuals are less likely to have formal and informal support networks that mitigate risks such as single parenthood or poverty (Garbarino & Kostelny, 1992).

Violent Offenders

In the logistic regression model of incarceration for a violent offense, there was a much higher risk of incarceration due to a violent offense for African American and Hispanic youth with child welfare services beyond investigation. Although service provision was not significant, removal of the child welfare services variable and the interaction with ethnicity significantly reduced model fit--suggesting its import. (The significance level was affected by a large standard error, suggesting that a relationship may exist but is not detectable in the model because of small sample size.) In other words, while child welfare services beyond investigation decreased the risk of incarceration among maltreated youth of color, those African American and Hispanic youth who entered CYA were more likely to have been convicted of a violent offense. Rivera and Widom (1990) also found that African American youth with child welfare histories had more violent offenses than Caucasian youth with child welfare records. These findings may reflect an actual etiological difference in the impact of child maltreatment, systemic biases regarding how long a child experiences maltreatment before services (Rivera & Widom, 1990), or the effects of cumulative risk.

Etiological differences could include either a pattern or intensity of maltreatment,

different response to maltreatment, or a different outcome for urban, minority youth served by the child welfare system. The intensity of maltreatment was impossible to measure in the current study apart from the presence of more than one abuse type over time. Based on other research findings, however, there is little reason to believe that the severity of abuse differs by ethnic group (Sedlak & Broadhurst, 1996).

There were different patterns of report types among ethnic minority groups in the present study--African Americans were most frequently reported for neglect and Hispanic children were most frequently reported for physical abuse. Only neglect, however, increased the likelihood of being a violent offender, meaning that the heightened risk of being in CYA due to a violent offense for youth of color cannot totally be explained by report patterns. A differing response to the maltreatment itself based on ethnicity would seem more plausible if African American and Hispanic youth were reported for the same type of maltreatment and had similar cultures. A more negative outcome for ethnic minority youth served by child welfare would seem more plausible if there had been a similar finding in analyses of incarceration. Similarly, if there is a systemic bias against or barrier to serving older children of color which leads to only the most severe cases obtaining services, then service provision should have corresponded to equal or increased incarceration rates. Rivera & Widom's (1990) hypothesis that these children are escaping early detection seems contrary to the higher rate and likelihood of report and service among young African American children.

In light of the analyses of census tract data in the present study, the latter hypothesis that cumulative risk may be the reason that urban African American and Hispanic youth in the 11 cities are more frequently incarcerated for violent offenses seems the most plausible answer. The

youth of color in these cities were much more likely to face additional risks beyond maltreatment such as poverty, educational difficulties, parenting practices more conducive to delinquency, or perceived barriers to opportunities (e.g., lack of inner city jobs) which may interact with the abuse to create a heightened risk for violent behavior (Attar et al, 1994; Haveman & Wolfe, 1994; Heimer, 1997). African American and Hispanic communities (as defined by proportion in a census tract) correlated highly with measures of poverty. Hispanic residence corresponded particularly highly with a lower proportion of high school graduates. Similar findings have been reported in national studies, which have found that ethnic minority children are most likely to be poor (DHHS, 1996) and Hispanic youth have the highest rate of dropping out of high school (Snyder & Sickmund, 1995). Research on poor community conditions and home instability indicates that children experiencing maltreatment only or children experiencing poor community conditions only may have better outcomes than those experiencing both levels of risk (Cicchetti, 1996; Osofsky et al, 1993). In other studies of ethnic differences in criminal behavior, variation in offense rates between Caucasians and African Americans did indeed disappear when children of color from non-underclass neighborhoods were compared to Caucasians in non-underclass neighborhoods (Peeples & Loeber, 1994). Given the same environment outside the family, it is possible that differences in incarceration by offense type between Caucasian and youth of color would diminish entirely.

Other variables in models attempting to predict who was incarcerated for a violent offense changed with the introduction of community level factors. In the proportional hazards model of incarceration among children with investigated maltreated reports, living in areas with large numbers of single mother heads of households was only slightly more common among

incarcerated violent offenders. When both individual measures of family structure and community measures of violence and citizenship are present, the youths' individual reports of having a single parent substantially increased the likelihood that they were incarcerated in CYA for a violent offense, given they were not reported for neglect. The proportion of single mother households in a census tract was not significant and was dropped from the model once the individual measure was introduced. A report of a prior commitment or numerous sustained court petitions in and of themselves characterized non-violent offenders in general. Though this may seem counter intuitive, previous research on violent juvenile offending suggests that violent offenders may have fewer prior convictions and begin offending later (Rivera & Widom, 1990). The interaction between commitment history and number of petitions may indicate a subgroup of chronic offenders committing more serious crimes.

Youth coming from a single parent home and living in a neighborhood with more non-citizens were more likely to be among the violent offenders, while youth from a two-parent home in the same neighborhood were less likely to be among violent offenders. A similar pattern was seen in the interaction between having three or more sustained delinquency petitions and living in an area with a larger proportion of immigrants. Correlations between single mother households and measures of proportions of immigrants were significant and negative. Studies of the social correlates of mental health have previously found that children who are both poor and live in areas where they are culturally isolated (i.e. poor Hispanics living in a non-Hispanic area) are more at risk for internalizing and externalizing symptoms than children living in areas more culturally similar (McLeod & Edwards, 1995). It is possible that a single mother family is more isolated in a neighborhood in which being a single mother is less common, heightening a

maltreated child's perception of isolation from other children and community members. A similar social stigma may be attached to a juvenile offender in an area not typified by that type of behavior. Such isolation may decrease the likelihood of positive relationships with peers and adults noted as promoting resilience (Werner, 1993). Further it may be that such isolation promotes a cumulative loosening of prosocial bonds which might otherwise inhibit violent behavior (Messner & Rosenfeld, 1997).

The Pathway to Incarceration from Foster Care

A focus on the path from foster care to CYA began with an examination of cases which moved from child welfare supervised foster care to probation supervised care. About three percent of children over the age of seven began their foster care careers with child welfare and then later re-entered foster care under the supervision of probation. Put another way, over 12 percent of the population who had at least two spells in care re-entered as probation rather than child welfare supervised cases in their second spell.

Age. Similar to transitions patterns into CYA presented earlier, children were generally more likely to enter probation care after age 15. Among children who exited from their first spell in care, however, children placed between the ages of 12 and 14 were over two times more at risk of re-entry under probation supervision. This is consistent with prior research showing that children between the ages of 10 and 14 have the highest risk of re-entry into foster care (Wulczyn, 1991; Wulczyn, Goerge, Hartnett & Testa, 1986).

This finding regarding age again raises the issue of considering developmental stages in understanding system trajectories. This particular age range is a prime period for dropping out of school and engaging in various other at risk activities like substance abuse or sexual activity

(Dryfoos, 1990; National Research Council, 1993). This is also a time of high stress for young people. Children move from an educational system with a primary teacher to a multi-teacher format in a junior high or middle school setting. Physiologically there are wide variations in development which can add to the social stresses of transitioning from childhood. Removal from home (and perhaps more importantly from peers and other supports) may be particularly troublesome at this stage. Compounding this is the fact that, in general, services such as extracurricular school activities decline at a time when it is also more difficult to find families willing to care for pre-adolescents and adolescents further decreasing the opportunity to have positive, ongoing relationships with adults.

Ethnicity. The rate of entry for African American, Caucasian and Hispanic youth peaked at age 16 years, while children of Other ethnic groups were most likely to enter probation care at age fourteen. Ethnicity, however, was not significant in a multivariate model of re-entry to probation once age, gender, removal reason, placements, and placement histories were controlled.

There are several possible explanations for the lack of ethnic variation in risk of entry into probation. First, in order to re-enter as a probation case one must both exit from the first spell and re-enter care. Children of color in California particularly African American children are more likely to remain in foster care once placed. In addition, in a study of re-entry into child welfare supervised foster care there were only small differences in the cumulative probabilities of re-entry by ethnicity (Needell et al, 1996). Therefore while children of color may come into the child welfare system as maltreatment referrals at a much higher rate, the ethnic representation of children who go home and become eligible for re-entry is much more equal.

Another partial explanation for the similarity of re-entry by race may lie within juvenile justice processing systems. Previous studies of ethnic variations in the juvenile justice system indicate that youth of color have an increased risk of heavier penalties after official contact with the juvenile justice system (Pope & Feyerherm, 1992; Walker et al, 1996). Therefore Caucasian youth may have a greater likelihood of receiving a community based alternative like probation foster rather than incarceration or probation camps.

A more optimistic explanation may relate to the findings mentioned above regarding children of color and higher levels of services. In our analyses of youth with investigated maltreatment reports children of color who received services beyond investigation were less likely to enter CYA. It appears that this same protective nature of services (in this case foster care), decreases the typically higher rate of juvenile justice involvement among youth of color (Synder & Sickmund, 1995).

Gender. Although males were substantially more likely to enter probation foster care than females, females comprised a relatively high proportion of later probation foster care placements (33 percent). Some of this may be explained by the fact that females accounted for approximately 60 percent of the foster care entries over the age of seven, meaning that more females would have been available to exit and re-enter care. Females, however, rarely comprise more than 20 percent of the officially identified juvenile offender population and are less likely to have their cases formally petitioned than males (Poe-Yamagata & Butts, 1996).

The relatively large proportion of females in this group thus appears to be partially attributable to the trend presented in the discussion of the 10 county sample that females appear to face greater risk of delinquent behavior among higher levels of child welfare services. As

posited earlier, some of this trend may reflect findings regarding females having greater risk of antisocial behavior following maltreatment during preadolescence to adolescence (Pakiz et al, 1997; McGee et al., 1992). Though we lacked the ability to track possible juvenile justice records prior to entry into child welfare supervised foster care, it is also possible that these findings relate to studies of foster care as a treatment for delinquency. In one such study Chamberlein and Reid (1994) reported a significant increase in aggressive behaviors among females following foster placement. Both studies suggest that at this stage developmental concerns may interact with gender to produce an increased risk of delinquency among maltreated females whose cases were severe enough to warrant placement.

Permanence. Policies and researchers have long decried the need for permanency for youth in foster care, largely for developmental reasons and because of concerns about future transitions to adulthood without adequate family support (Barth, 1990; Berrick et al., 1998: National Research Council, 1993). The dramatic increase in risk of transition to probation supervision among children who experience both within and between spell impermanence is striking.

On one hand, some would argue that the movement and recidivism seen in cases transitioning to probation merely reflect a more at risk or behaviorally disturbed entry cohort into foster care. This hypothesis is somewhat bolstered by the higher rate of entry for children in group care as opposed to kin or foster placement. On the other hand, it does not explain the majority of later probation cases who were not initially judged to need a higher level of care at the time of first placement.

Older children and adolescents often face a higher threshold of risk among child

welfare workers in order to move beyond investigation to services (Smith, Sullivan, & Cohen, 1995). This means that older children must also face a higher standard in order to be placed into care. As seen in the ten county sample, many of the youth with poor outcomes had multiple reports prior to their placement. This means that while older children may indeed come into care with more serious behavioral and emotional problems, this may be in part due to a systemic bias against serving older children which prevents them from receiving more timely and comprehensive services.

These findings also suggest that for the over 20 percent of children and youth who will later re-enter some form of foster placement, particular attention should be placed on assessing the child's social and emotional functioning. It has been noted in previous critiques of child welfare that services focused on exiting children to reunification are primarily focused on the parents (National Research Council, 1993). Additionally, there is evidence that neglect cases more likely to re-enter care are also less likely to trigger additional supports such as mental health services (Garland et al., 1996). At a minimum, re-entry into care should signal a significant need for a comprehensive assessment and provision of services.

Removal reason. Unlike earlier findings which showed a pervasive impact of neglect on later entry into CYA, risk of entry into probation was largely dependent on the interaction of abuse type preceding placement and later stability. In bivariate analyses, sexual abuse cases had the lowest rate of re-entry to probation foster care. Though not statistically significant (likely due to the small n size of sexual abuse cases with three spells), it is interesting to note that in a multivariate model among sexual abuse cases with multiple spells the risk of re-entry to probation surpassed that for neglect or physical abuse. Studies of exits from foster care in

California indicate that children placed for reasons of physical or sexual abuse are much more likely to exit a first spell (primarily to reunification) in foster care than neglected children (Needell et al., 1996). This finding suggests that the consequences of inappropriate exits from care are particularly high for children initially placed for sexual abuse.

From Foster Care to CYA

The examination of entries into CYA according to prior out-of-home placement was accomplished in stages. First, birth characteristics were compared according to CYA status and the supervising agencies and combinations of supervising agencies. Then the foster care records were divided by entry cohorts. Because of the aforementioned biases inherent in the group who entered prior to 1988, only bivariate techniques were applied to this group. The second cohort (entries from 1988 through 1995) was examined with probation and child welfare cases and with child welfare cases alone.

Births. Similar to findings in the 10 county sample, there was a higher proportion of youth who were born to teen mothers among the incarcerated versus non-incarcerated groups regardless of supervising agency. This finding continues to support a heightened risk for poor outcomes among youth born to teen mothers (Haveman & Wolfe, 1994). The percent difference of youth born to teen mothers between the non-incarcerated and incarcerated placed children was much greater than seen in the maltreated versus non-maltreated sample. This change in proportion between the maltreatment sample figures and the foster care figures could be attributable to an increase in the number of counties represented (teen birth rates vary by county) as well as the notion of cumulative risk. In other words, if we assume that children entering foster care have a greater degree of family dysfunction than children who are maltreated but not

placed, the impact of additionally having a teen mother may be greater.

Entries to foster care prior to 1988. This cohort represents a group who at the start of longitudinal data collection in 1988 were still active in the administrative data system. In other words, many of the children from their initial entry cohorts had exited and not returned to active status at the time the state discontinued the practice of purging records.

Age. Among children who were still in care in 1988, those entering under the age of 10 eventually achieved a similar rate of entry into CYA as children entering between the ages of 10 and 14 years. Arguably those children who stayed in care longer and perhaps had more spells in care may form a group of children whose risk of delinquency is less dependent on age. Indeed this finding is more interesting in terms of its implications regarding permanence. It may be that the benefit of early intervention in a child's life is curtailed by a subsequent lack of permanence and continuity which promote the attainment of normal developmental milestones. This hypothesis is consistent with the finding that an increase in the number of spells in care increased the rate of entry into CYA.

Ethnicity. Among African American, Caucasian and children of Other ethnic groups, there was less variance in ethnic representation between CYA and non-CYA groups among those children who had at least one probation placement in addition to foster care involvement. This is consistent with the fact that we found little ethnic variation in entry into probation foster care, which may then decrease the between race variation in CYA entries.

Placement characteristics. Regardless of placement type, children who eventually entered CYA more frequently went home following their first spell. Those placed in foster and group care settings who later entered CYA were more likely to runaway from the first placement than

the non-CYA group. As posited in the discussion of the 10 county results, the higher proportions of incarcerated and runaway youths within the CYA group would be expected. The fact that a large proportion of the sample who entered care prior to 1988 and later entered CYA following reunification suggests that this is not a recent phenomenon. For at least the last ten years, there appears to be a subset of children whose reunification assessments were in error or who required some form of additional after care in order to promote later positive outcomes.

From Foster Care to CYA: Entered Care 1988 or Later

The primary focus of the investigation of CYA entries following foster care was on those children and youth entering care in 1988 or later because complete exit and re-entry data were available for this cohort. Nearly 80,000 children and youth over the age of seven years first entered child welfare supervised care between 1988 and the close of 1995. Less than one percent of these children later entered CYA.

Age. Similar to rate of entry into CYA by maltreatment the rates increase dramatically for children over 15 years old. The rate of entry was highest among sixteen year old children of other ethnic groups. Examining rate of entry by age at first placement we again found that the rate of entry into CYA was generally highest for children who entered their first placement between the ages of 11 and 14. In the multivariate model which included children with probation foster care histories, children placed between the ages of 12 and 14 were about nine times more likely to enter CYA. In a model excluding probation cases, this risk declined to about six times greater than older or younger children.

In some ways this finding seems counterintuitive as one might anticipate higher rates of entry for older youth because there is less time for the system to intervene and their potential

exposure to a maltreating environment is greater. Yet, there are several potential explanations for the current findings. First, the likelihood of being reported for, served and placed into foster care due to neglect (associated with higher likelihood of CYA entry) decreases as age increases. Second, among older teenagers, girls are more likely to be involved in the child welfare system often for reasons of sexual abuse. Therefore those youth entering foster care after the age of fourteen may belong to a population generally less at risk for serious juvenile crime. Among younger children, placement may have a greater potential for alleviating some of the trauma associated with the family dysfunction. In addition, there may generally be other protective factors for elementary school aged children such as having a single primary teacher and smaller overall school size. Placements may be easier to obtain for younger children and are more likely to be in a family setting versus group care (National Research Council, 1993).

As discussed in the section on the transition to probation foster care, 12 to 14 year old youth may also be more at risk due to the number of stressors present at this stage of development. These youth also face a lower likelihood of finding stable family foster care and similar bias against service as older adolescents. It seems likely that an interaction of lowered risk for other ages, systemic deficits in services to older children, and the influence of the early adolescent developmental stage may explain these findings.

Ethnicity and gender. Throughout this study, there is a clear bivariate trend toward a heightened risk of CYA entry for African American children in the child welfare system. Additionally, although somewhat lower, the risk of entry for Hispanic children was also quite high. The same trend held for entries into CYA from foster care though in the multivariate model, which included probation cases, the coefficients for Hispanic children were non-

significant. By excluding youth who also had probation supervised placements, we found that the gap between African American and Hispanic children diminished.

Ethnicity also interacted with reunification in both models. For Caucasian children returning home after the first spell the risk of later CYA entry is reduced, but for children of color the opposite was true. As aforementioned, this finding was similar to a study of child welfare exits in Arizona, which found that while African American children in foster care had worse child welfare outcomes (such as length of stay in foster care), they were less likely to experience negative developmental outcomes like transfer to juvenile corrections (McMurtry & Lie, 1992).

Most children in foster care come from families of low socioeconomic status (Berrick et al., 1998) and children of color are much more likely to be in the lowest economic levels (DHHS, 1996). Many studies have also demonstrated that neighborhoods with large proportions of impoverished families also have other serious social problems such as crime, substance abuse and poor schools (Coulton & Pandey, 1992; Kozol, 1991). While reunification is generally considered a positive outcome within the child welfare system, return to these environments, even if the major threat of maltreatment has been avoided, may dramatically reduce the resources available to assist these children as compared to those who remain in the foster care system.

It was also interesting that although the transition to probation foster care was a highly significant risk factor, the risk was diminished slightly for children of color. It is possible that the presence of some intervention is better than a return to a highly disadvantaged environment with no after care. It is also possible that because youth of color are more likely to receive more severe sentencing within the juvenile justice system, that those youth diverted into less restrictive

settings like probation foster care represent a less serious youthful offender population.

As seen in the previous maltreatment analyses, though the overall rate of entry for females into CYA is quite low, females comprise over 11 percent of foster care youth who later enter CYA as compared to nine percent of the maltreated incarcerated group and four percent of the general CYA population. Further the ethnic variations among CYA entries are not readily apparent among females. The rate of entry among females is very similar across ethnic groups. As posited earlier this phenomena seems indicate a variation between genders in the reaction to maltreatment and later intervention.

Abuse type and removal reason. As compared to the heightened risk of entry into CYA for neglect cases as opposed to other forms of maltreatment in the 10 county analysis, children removed from the home for physical abuse had a similar level of risk to those removed for neglect when compared to sexual abuse cases. Generally, one would anticipate that those children who are eventually removed from their homes due to physical abuse experienced more severe forms of maltreatment than those whose cases were investigated but were either not served or provided in-home interventions only. Therefore while neglect may be a more powerful risk factor for serious delinquency within the maltreated and investigated population, among those youth experiencing more severe forms of maltreatment the differences between the impact of physical abuse and neglect may diminish.

Another possibility is that some form of neglect is also an underlying risk factor in cases of more serious physical abuse. In examinations of multiple reports, an interesting reciprocal nature between these two types of abuse was uncovered. Among children with more than one report reason, cases initially reported for neglect were most frequently re-reported for physical

abuse and physical abuse cases were more likely to be re-reported for neglect. It may be that many of the underlying familial risk factors and environmental deficits are similar for both types of maltreatment.

Permanence. An increase in the number of spells in care increased the likelihood of entry into CYA in bivariate and multivariate models. The increase in risk is particularly apparent for those re-entering care three or more times. In multivariate analyses which exclude probation cases the impact of multiple spells is almost five times greater. Neglected and physically abused cases with multiple spells had a somewhat lower risk of CYA entry than sexual abuse cases with multiple spells.

One of the unintended effects of the permanency planning movement in child welfare may have been an unwarranted increase in reunifications combined with a general lack of after care services (Fein and Maluccio, 1992). Equating reunification with the goal of permanency may in fact result in impermanence for children whose families are not yet ready for reunification or because of the lack of later support services cannot maintain a viable home environment. In smaller studies of youth in placement, many in foster care reported significant benefits from placement outside the maltreating environment (Courtney, Piliavin & Enter Wright, 1997; Johnson, Yoken & Voss, 1990). This is also the case among youth interviewed after foster care (Barth, 1990). While studies of children emancipating from foster care have not shown favorable results regarding transition into adulthood (Cook, McLean & Anselm), there is no evidence that outcomes for youth returned home or never removed from abusive environments would have been better.

Similar to models of entry into CYA with the 10 county sample, the models explaining

entry into CYA following foster care do not explain a large portion of the variance. As mentioned earlier this is likely due to the inability to measure many of the constructs implicated in delinquency such as parental criminal history or school failure. There were, however, some variables whose magnitude of effect suggest that they would remain significant even in a more comprehensive model. For example, in both models highly significant risk ratios were found for males and children entering care between the ages of 12 and 14. In the model which included probation placements, a change to probation clearly dramatically increases the risk of later CYA entry. In the model excluding probation placements, having three or more spells in care and reunification following a first spell among children of color had particularly high risk ratios. These factors are therefore still important in determining ways to decrease the risk of serious youthful offending among school-age children in foster care.

Violent versus Non-violent Offenders

Bivariate examination of offenses, indicate that between the proportion of violent offenders among previous foster youth mirror that of all statewide entries--in contrast to the investigated maltreatment group which had a lower overall percentage of violent offenders. Males and females were equally likely to be incarcerated for a violent offense, but the small number of females precludes multivariate analyses of gender. While reunification following a first spell in foster care increased the likelihood of incarceration, it did not appear to be a discriminating factor between types of offenders. A change to probation supervision, however, was more indicative of both incarceration and violent offending.

Violent offending including probation foster care cases. Much of the power in the logistic regression model of violent offending including probation cases lie in the interaction

terms. Controlling for various other case characteristics, the impact of having a later spell in probation foster care changed. Probation foster care was positively related to violent offending only among youth with three or more sustained petitions prior to CYA entry.

The higher likelihood of incarceration for a violent offense among children of color from single parent homes was similar to the finding in the 10 county maltreatment sample.

Explanations are likely to be confounded by issues of poverty as single parent homes and families of color are more likely to coexist with the worst community conditions and highest levels of poverty. Theories such as the likelihood that there is a decrease in the available social controls (National Research Council, 1993), poor parenting skills (Heimer, 1997), and a greater level of cumulative risk (Rutter & Rutter, 1993) all have relevance to understanding this finding. Some of the heightened risk for youth from single parent homes may also be reflecting the population of youth born to teen mothers.

The number of spells in foster care increased the likelihood of incarceration for a violent offense. Having multiple spells in foster care theoretically decreases the likelihood of long-term bonds to positive adult models, which therefore decreases the amount of informal social controls (National Research Council, 1993). This was also true of youth with repeated foster care spells who were younger age at the time of a first sustained delinquency petition. Several other studies have linked early offending patterns to later more serious criminal behavior (Cornell, 1990).

Similar to the 10 county finding, the interaction between early offending and incarceration as well as incarceration and petitions seems likely to be describing a subgroup of more serious offenders. For example, a youth might have several status offense or petty theft petitions none of which are likely to result in an incarceration episode. The escalation of

offenses from property to person crimes may be more common among early onset offenders but is not inevitable.

Violent offending excluding probation cases. When probation cases were dropped from the logistic regression model of violent offending, placement characteristics such as removal reason and exit from first spell became significant factors. While reunification after a first spell generally had a negligible effect on whether or not a youth was incarcerated for a violent offense, those youth identified who were reunified and later identified as requiring substance abuse counseling were substantially more likely to be incarcerated for a violent offense. Similarly youth who were initially removed for physical abuse and later had substance abuse issues had a greater likelihood of entry as a violent offender.

These interactions with substance abuse appear to support research connections between substance abuse and mental/ emotional health needs and similar underlying causal mechanisms for substance abuse and delinquency (Loeber et al., 1993; Vega et al., 1993). This hypothesis seems particularly likely as substance abuse counseling among neglected youth or youth who were not reunified was not a risk factor for violent offending. Among those youth who were reunified, it is possible that family or community environments both contributed to the need for alternative coping mechanisms like drug use and provided the opportunity and norms supportive of that lifestyle. Further maltreated and foster youth have been noted to have greater risk for delinquent behaviors and substance abuse (Duncan et al., 1996; Widom et al, 1995; Cook et al, 1991).

The smaller sample size in this second model, precluded the inclusion of multiple spells. Multiple placements within the first spell, however, were positively associated with violent

offenders who were removed from the home for physical abuse. It is possible that physically abused children present greater behavior problems upon entry into care than neglected children, which then lead to a greater number of placements. On the other hand, children traumatized by abuse may be even more susceptible to developmental damage from a lack of permanence once placed into foster care. Certainly any supportive or rehabilitative service offered to a child would suffer from multiple relocations.

Theoretical Implications

This study operated under the hypothesis that, within an ecological context, either social learning theory or social control/ social disorganization theory would provide a more accurate model for incarceration and violent offending. Overall, social control/ social disorganization theory appears to provide a better understanding of risk of incarceration and of incarceration for violent offenses. Given the limitations of the study and the heightened risk for physical abuse among foster youth, however, social learning theory may still have an underlying and sometimes undetected impact in the outcomes mentioned. An integrated model is proposed to be tested in future research.

Social learning theory. According to social learning theory, there should have been a higher level of criminal--particularly violent behavior--among those children with more models or experiences of such violence. While the addition of violent crime rates in a model of risk of incarceration in the 10 county sample was significant, physical and sexual abuse were not. Further, in the model of incarceration for a violent offense neglect interacted with violent crime--not physical abuse. On the surface this suggests that social learning is less descriptive of these outcomes or plays too small a role to be detected. On the other hand, among foster youth neglect

and physical abuse appeared to play similar roles in the development of serious and violent delinquency. This may indicate a separate underlying construct of severity of the maltreatment situation.

There are, however, too many alternative reasons for the relative failure of social learning theory to describe incarceration characteristics to suggest that this perspective plays no role whatsoever. For example, a portion of neglect cases were also reported for sexual and physical abuse; there was no measure of domestic violence in the home or level of exposure to community violence was available; and there are certainly other means of learning violence in the popular media which is arguably available to all children. Physiological development may have also played a role in obscuring these findings. In severe and chronic abuse cases, maltreatment has been found to effect neurochemical responses which may be persistent throughout later development (Cicchetti, 1996). As these are older children and youth, it is possible that developmental impairments as well as environmental factors overtake the import of social learning influences. Indeed this may explain why social learning studies are often focused on studies of childhood aggression (Bandura, 1986). It was also not possible to measure forces such as peer influence or parenting (which has been related to socioeconomic status) as proposed as a prime source of secondary learning experience within the construct of learning theory (Heimer, 1997). In particular, the mobility of foster youth may increase the likelihood of association with more troubled peers. It is therefore not possible to gauge the strength of social learning in incarceration for violent versus non-violent offenses.

Social control/ social disorganization theories. A social control/ disorganization model seems more viable as a primary explanatory guide for the findings in the current study. The

impact of neglect, family structure, poverty, and ethnicity (which correlates so highly with poverty in this sample) suggest that the children in this study have fewer prosocial bonds and experience greater conditions of disadvantage (Messner & Rosenfield, 1997). The greater likelihood of incarceration for violence among youth who experience conflict between normative conditions--e.g., living in a single parent home in a neighborhood where that is less common--fits within the notion that alienation or relative deprivation may inhibit access to appropriate means of status and leaving violence as a normative alternative to gain power and position (Elrod & Kelley, 1995; Ogbu, 1983 & 1988). Foster youth may experience an additional sense of relative deprivation by being in a non-normative caretaker environment.

The finding that higher levels of child welfare services decrease the likelihood of incarceration for children of color fits within the social control/disorganization perspective. In comparison, the finding in urban areas that services increased the likelihood based on this theoretical model, seems counter to the social control/disorganization perspective. Although these findings appear contradictory, there are several reasons why this may have occurred. For example, the level and duration of services are not measurable in the current data. In studies of resilience it is as yet unclear how level of risk impacts the intensity of protective factors required. Residence in neighborhoods characterized by low opportunities, poverty, etc. may be indicative of both heightened environmental risk and lowered availability of supportive services to children identified by child welfare authorities. In addition, studies indicate that socioeconomic status is predictive of poor parenting practices and mental health problems which are then related to serious and violent delinquency (Foley et al, 1996; Heimer, 1997; McLeod & Edwards, 1995; Snyder & Sickmund, 1995).

Moves necessitated by placement into foster care may disrupt the capacity to form prosocial bonds which can serve as more consistent forces of informal social control--particularly among those youth who move in and out of foster care several times. Conversely inappropriate or untimely returns to a home environment without such controls may offset whatever protective influence placement might have. Additionally, if a large proportion of the child welfare cases who transitioned to incarceration were indeed not identified by child welfare until late childhood and adolescence, attempts to mitigate the risk factors may be confounded by the duration of exposure to those risks.

A Proposed Model for Theoretical Exploration in Future Research

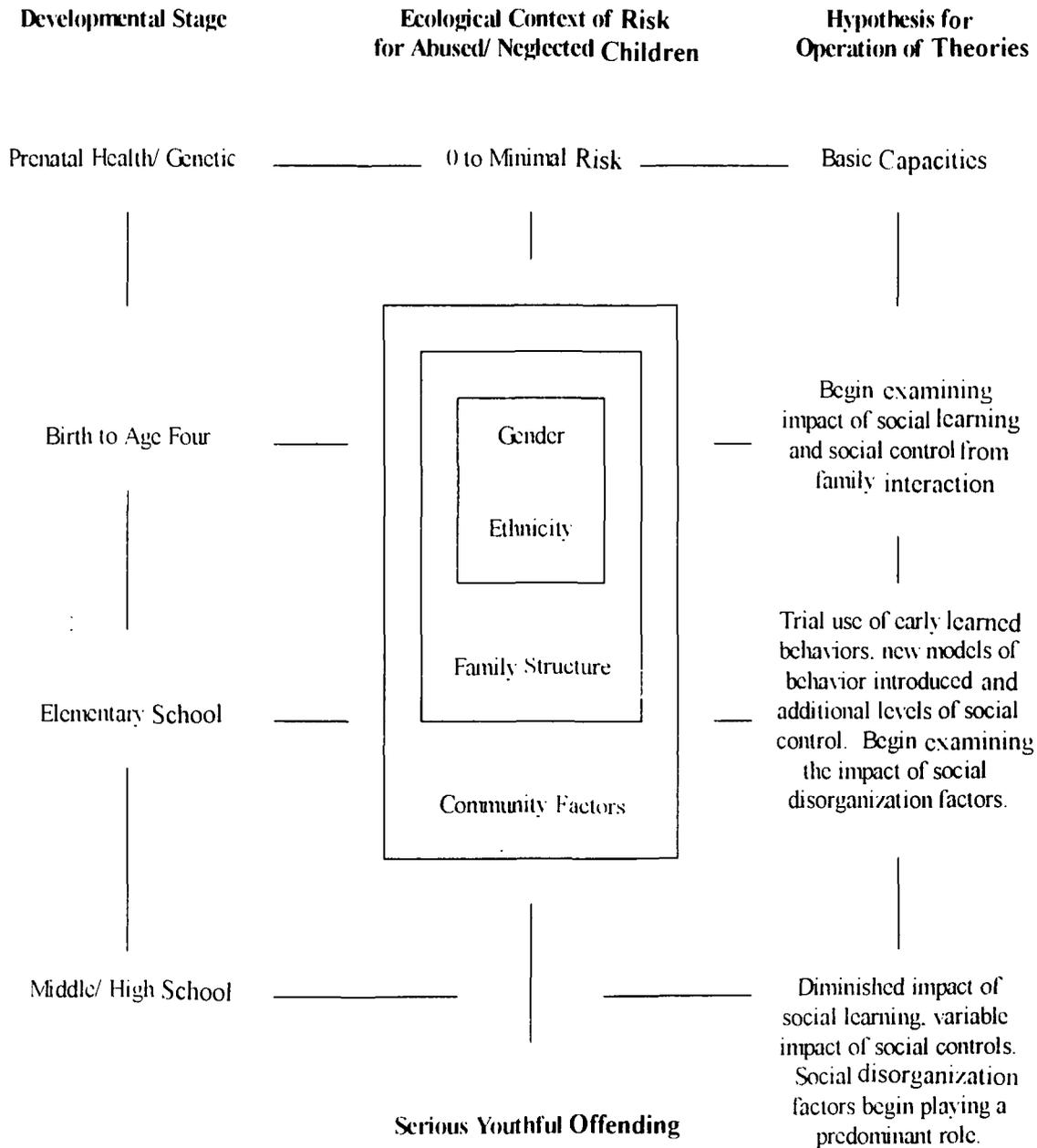
As previously mentioned, the data limitations of the present study preclude the ability to test theory. Although social control/ disorganization theory seemed to provide the best model for the results of the study, the developmental period of the youth examined as well as a lack of measure for exposure to varying degrees of violence may be hampering the ability to detect the influence of social learning. This research has also suggested that there may be a cumulative and developmental model of risk which lies beneath the structure of the current variables. For example there is a heightened risk for older females and for younger African American males in the study. Further, there is some indication that cumulative types of maltreatment or chronicity influence the outcome of incarceration in the present study.

An integrated model is proposed to build on the present study by following a sample of children with investigated maltreatment reports from birth onward to explore the development of serious violent behavior according to an ecodevelopmental model which incorporates social learning and social control/ disorganization theories (see Figure 5.1).

This model acknowledges the potential impact of developmental stage on children of varying environments on the operation of various theoretical constructs. The model is reciprocal and developmental. For example, social learning theory may operate early in a child's life providing basic ideas about behaviors and actions which are mediated by social controls. These early experiences accumulate and change. Thus, models concentrating on older children might capture greater social disorganization influences merely because they cannot measure the cumulative influence of social learning or social control on child development and behavior. A multi-generational model might also be added to complement the proposed theoretical model by taking into account the potential influence of factors like socioeconomic status on health and prenatal care as well as parenting style. In other words, even early social control and social learning influences may be related to the underlying impact of forces of social disorganization which effect a given family's structure and functioning even prior to the birth of a child.

Figure 5.1 Theoretical Framework for Future Research

**Serious Youthful Offending: A Theoretical Framework for Testing Theories of
Social Learning and Social Control/ Disorganization within a
Ecodevelopmental Perspective**



Practice, Policy, and Research Implications

In the above discussion, potential explanations and theoretical modeling have been put forward based upon analyses of administrative child maltreatment report, foster placement, birth, and CYA data in conjunction with community variables. Before addressing the various implications of the study, the limitations (some of which are discussed above) are outlined to help the reader place the following implications in context.

Limitations. Despite the large sample size, generalizability of the first half of the report is hampered by the convenience sample of counties. For example, Los Angeles (not included in the maltreatment study because their data system was not compatible with the other study counties) comprises over a third of the child welfare cases and a large proportion of the CYA cases in the state. Analysis of county indicators and demographics indicate that there was a range of risk levels among counties, but there is a higher proportion of Hispanic youth and a lower proportion of African American youth in the sample counties than in the state as a whole.

The lack of lifetime coverage of maltreatment or foster care limits the evaluation of the impact of various service levels on youthful incarceration. Statewide analysis of foster care to CYA entries indicates that a relatively small proportion of older children have placements as very young children. Many youth, however, may have had previous child abuse and neglect reports in other counties or non-foster care child welfare contact prior to the age of seven. Similarly, the lack of detail regarding the type of services given severely hampers the understanding of what the various service levels entail. Also related is the inability to thoroughly assess the child's mental and emotional state/ capacity or the severity of the abuse incident at the time they were reported to child welfare authorities. Therefore one cannot assess whether or not

one case was more severe than another when examining service outcomes. While many of the findings were consistent with previous research, interpretations must be cautious and preliminary dependent on future research which can explore the duration and depth of services in relation to a child's developmental state.

Another major limitation concerns the lack of information regarding the onset of delinquent behavior. The analyses in this study are only applicable to entry into the most serious youthful offender incarceration facilities in the state. In order to more thoroughly guide secondary prevention efforts, future research should include county probation information or case records which more fully describe the offense histories.

Administrative data sources rarely include all the variables of interest to researchers. In particular, the lack of information regarding domestic violence in the home confounds the ability to fully assess the process of social learning which may occur among violent offenders. Additionally, the assessment of community impact is hampered by lack of lifetime addresses, meaning it is not possible to estimate the duration of exposure to a given census tract. While this may have changed the results regarding violent crime rates and violent offenders, however, it seems less likely that results would have changed regarding poverty indicators. In other words, while families may be quite mobile within a certain socioeconomic level, studies of urban poor areas suggest that it is less likely that a poor family will move from a poor to a non-poor area (Massey & Denton, 1993).

In addition to missing variables, administrative data systems often force certain decisions on the part of those entering the data, which may impact the interpretation of the results. For example, within the child abuse and neglect reporting data, initial reports are taken by phone. If

the ethnicity code is not updated following investigation, the ethnicity code will be based upon the judgement of the individual making the report. Further there is no way to record bi- or multi-racial origins for these children. The other primary concern mentioned earlier, is that of report reason. Only one abuse or neglect reason can be entered on a given referral. The assumption is made in the present study that the recorded type is either the only or the primary maltreatment type occurring at that time. This limitation, however, accounts for the cautious interpretation of the effect of number of reports and change in report type.

Another limitation, discussed in detail in Chapter 3, is the need for matching cases across data bases because of the absence of an integrated system. It is difficult to assess how inappropriate matches (less likely) or missed cases may have influenced the findings. Some of false negatives in the present study may have reduced the fit of the multivariate statistics by blurring differences between violent and non-violent offenders according to child welfare service histories.

Implications

Despite the many limitations of administrative data research, the findings presented here do have potential implications for policy and practice as well as providing a map for future research.

Neglect

As some researchers have pointed out, the impact of neglect on individual behavior as well as system caseloads have not received the same attention as physical or sexual abuse in the literature. Yet, again and again neglect is surfacing as a dominant force in agency caseloads as well as outcomes. Some of the neglect of neglect may be due to the difficult nature of defining

and serving neglect cases (Crouch & Milner, 1993). For example, neglect might include an ill kept home and poorly monitored children of a teen mother, children semi-abandoned as parents pursue drug use, or infants born substance exposed. The definition of neglect might also vary according to an investigative worker's own sociocultural background.

While a higher rate of occurrence of all forms of abuse and neglect have been associated with poverty (Sedlak & Broadhurst, 1996), generally neglect is seen as most closely associated with poverty and substance abuse (Gaudin & Dubowitz, 1997). It is possible that the difficulty in intervening in these widespread social problems of poverty and adult substance abuse coupled with the complexity of defining and serving neglect cases makes research and programs appear too difficult to conduct or the necessary multi-level interventions impossible to fund.

Additionally, outside the most extreme cases, neglect is often perceived as less harmful when compared to the physical and psychological injury due to physical abuse or sexual abuse. This may increase the perceived need (and perhaps funding) for research of abuse as compared to neglect. The relative lack of information regarding outcomes for children raised in neglecting families contributes to the idea that physical or sexual abuse are not only more threatening to the immediate safety of a child, but ultimately more damaging to long term healthy development.

Whatever the reason for this deficit in research, future work should continue to focus on the long-term impact of neglect in comparison to other forms of maltreatment. In addition, it is important to address issues of chronicity, severity and developmental stage to understand when intervention is most effective and in what form. For example, if the psychological or emotional harm resulting from a neglected child feeling unloved is as damaging as issues of cleanliness and nutrition, than interventions which focus on solely on solving the economic problems of a family

may not be sufficient to build a child's sense of competence and self-worth necessary for more positive adolescent and adult outcomes. If, as in the present study, a large proportion of school-age children come to the attention of child welfare authorities for neglect for the first time after age seven, it is especially vital that we gain an understanding of why their early childhood experiences did not lead to prior detection. Perhaps in some cases, events occur which led to either a decay in the family conditions or a worsening of behaviors/ appearance on the part of the child which was not apparent until later in the child's life. On the other hand, family mobility or other circumstances may cause certain children to slip through the cracks of mandated reporting requirements.

Child Welfare Services: Age, Ethnicity, Gender, Chronic Cases and Service Levels

The argument has been made that services need to be intensified for the youngest children reported for abuse or neglect due to their heightened physical and developmental vulnerability (Berrick, et al., 1998). This study in no way disputes the fact that younger children are more dependent upon adults to meet their basic needs. Our data suggest that we cannot afford to rely on an either young children or older children approach to allocating child welfare services.

Serving older children. Abuse reports on older children signal a substantial risk for later problems with the juvenile justice system. Deemphasizing services to older children has been justified by the greater need for protection among young children as well as the expectation that serving the younger population will ultimately decrease the need within the older child population. Yet these findings suggest that a sizeable portion of the current sample lacked official child welfare involvement as very young children-- our foster care data indicate that less than 20 percent of older children had placements at an earlier age.

Of course the lack of a maltreatment report or placement in foster care is not the equivalent of a lack of maltreatment. Many of these children may have experienced lengthy abusive environments prior to coming to the attention of someone who reported the incident. Perhaps a concerted effort at widening the child protection safety net for very young children might have detected such cases. Without effective early intervention, however, it seems unlikely that increased child welfare services to young children will significantly stem the tide of the report and service of older children.

If indeed a large proportion of children will continue to come to the attention of the child welfare system for the first time after age seven, then it is important that a complete picture of the service trajectories and outcomes be gained. Although the rate of transition to CYA overall was around one percent, this small number must be placed into context. For example, among foster youth less than one percent later entered CYA, but an additional two percent of child welfare foster care entries entered the probation system. About nine percent of foster care entries in 1990 ran away from their first spell. Almost half of these children never returned to the child welfare system, the probation system or entered CYA. Research on the outcomes for runaways from foster care such as homelessness and prostitution (National Research Council, 1993) do not give reason to suspect that these youth will experience positive transitions into adulthood. Without further exploration of other developmental outcomes, we have already determined that about seven percent of child welfare foster care entries who may be categorized as having positive child welfare system outcomes (e.g. lack of recidivism), are actually experiencing the quite negative outcome of incarceration in CYA in adolescence. There are an unknown number of high school drop outs, suicides, teen parents, and future homeless or mentally ill among the

remainder. As research mounts regarding the adolescent and adult development of children in this system, the basing of child welfare services delivery upon assessment of short term risk needs to be revised to include the cost of, and means of mediating, potential longer term outcomes.

Ethnicity. African American children in this study had the highest rate of entry into CYA. Unlike other studies, however, poor developmental outcomes was not an African American versus all others phenomenon. Hispanic children also had much higher rates of incarceration than Caucasian children served in the child welfare system and, in the urban sample, had an almost equal risk of incarceration with African American children. Given our findings, more attention must be paid to the unique needs and service trajectories of Hispanic children reported for maltreatment.

African American children appeared to fare better the more services they received-- as did Hispanic children to a lesser extent. Other researchers have called into question whether or not African American children once reported, receive services according to their need (Courtney & Barth, 1996; Courtney et al., 1996). If future research confirms the protective nature of more intensive services for African American children reported for maltreatment, a tendency to underserve this population is clearly a failed opportunity for secondary prevention.

In the present study the lack of individual level poverty variables confound our understanding of the relationship between ethnicity and incarceration in CYA following an investigated maltreatment report. Census data, however, clearly indicate that the children of color in the urban sample generally come from the most disadvantaged neighborhoods. While no causal relationship between poverty and maltreatment can be drawn from this study, the fact that

the majority of the children served by the child welfare system who experience negative outcomes such as adolescent incarceration live in such neighborhoods, suggests that their environment may impact the success of agency intervention. Further research and concerted policy and program efforts should target ways in which child welfare services may more effectively interact with families of color, their communities, and other agencies serving the same population.

Gender. Despite the very small proportion of females as compared to males who entered CYA in the present study, the distinctive pattern of increased risk to females according to increased service intensity deserves further inquiry. Several researchers have called attention to the fact that females are increasingly coming into official contact with the juvenile justice system and that the rate of increase in female offenders is higher than that for males (Poe-Yamagata & Butts, 1996). Eventually, one might anticipate that the increase in offending will filter down through the system and increase female representation in incarceration facilities like CYA. Given the large proportion of females among older children reported for maltreatment, understanding the unique developmental effects of maltreatment and services according to gender is a crucial area of research.

Recurrent child welfare cases. Those children who, as adolescents, entered CYA were more likely to have had multiple contacts with child welfare agencies. This suggests that children who re-enter the child welfare system more than once deserve increased attention to service needs. Considering the considerable length of time between the first report or placement and later incarceration, there appears ample opportunity for the system to effectively intervene in such cases. Future research needs to examine the reasons, length of time between reports,

service provision and case characteristics of children with repeated report, service and foster placement histories.

Mental/emotional health. The identification of substance abuse problems and prior service for a serious emotional disturbance among incarcerated youth both with and without child welfare histories, indicate that this group of serious offenders are engaged in a number of risk behaviors which suggest the need for mental health and related support services. Yet these youth live in impoverished areas which are likely to suffer from a lack of such services. Even those who are identified by child welfare authorities, enter a service system primarily designed to support family systems rather than rehabilitate the individual child. Those children who are provided mental health services in the child welfare system are much more likely to have been sexually or physically abused (Garland et al., 1996), yet the majority of youth transitioning to CYA in our study were identified as neglect cases. Public special education programs to serve emotionally disturbed youth are also limited resources as they are restricted to the most severe cases and designed to promote academic performance rather than more broadly improve the social functioning of the child. Our findings suggest a great need for either school or community based mental and emotional support services serving school-age children in lower socioeconomic communities. If substance use and delinquency have similar underlying causes, programs addressing these factors may hold promise in reducing the number of youth whose problems escalate to the point of serious youthful offending. In particular, schools have opportunities to intervene in this area through funds available from the Safe and Drug-free schools component of the national educational goals.

Foster and group care. The number of cases placed into foster care which later entered

CYA was small. Yet, the questions raised above deserve further research and inquiry. In the 10 county sample, the majority of the youth who entered CYA did not enter care after their first maltreatment report. For those who had multiple reports prior to placement into foster care, a review of the risk assessment procedure used might reveal reasons for the underestimation of risk. If it was not a matter of undetected risk, but merely insufficient severity, then such cases need to be examined in light of potential diversion services. Counties with interagency workgroups involving child welfare, mental health and juvenile justice staff may be able to identify or build intervention systems which can be used to aid those children and youth who do not meet the legal standards to enter foster care but are clearly at great risk for poor adolescent and adult outcomes.

The second issue relates to the reunification of a considerable number of youth who would later enter CYA. Arguably this was the area over which the child welfare system had the greatest control. In other words, terminations from care due to runaway or incarceration reflect the result of a youth's decision or behavior, while it was a case worker's decision to send the reunified youths home. Other researchers have speculated that older youth are commonly reunified due to a perceived lowered risk and systemic push to reunite families (Fein & Maluccio, 1992; Kurtz et al, 1993). As many adolescents enter group rather than foster family homes, there may also be a greater financial incentive to reunify teenagers. It is certainly not cost effective to reunify teenagers, however, if the resulting increase in negative behaviors is costlier than an extension of out-of-home placement.

Recidivism to the child welfare system (i.e. re-entry into care) was only one form of impermanence among youth who entered CYA following foster care. A large number of later

CYA entries also had four or more moves within a given foster care spell. The need to examine re-entries into the child welfare system was outlined above, but the need to scrutinize the reason behind moves within the system deserve attention as well.

Placement moves may occur due to a number of factors including challenging child behaviors; systemic reasons (such as having to move from an emergency foster home to a longer term care home); or issues regarding the selection, preparation and support of foster placements. Moves from an initial emergency placement to a longer term care home may be unavoidable, however, moves precipitated by child behavior problems call into question the accuracy of the initial assessment of a child's needs and/ or the level of preparation and ongoing support offered to those caring for the child.

Children with three placement moves in a foster care spell should be promptly assessed and closely followed by a multidisciplinary team to interrupt this pattern. If indeed as some social workers reflected in various discussion groups in an earlier study (Berrick et al, 1998) children are entering the system with greater problems, then both assessment and provision of the level of support to match the level of need are crucial elements to effective support of positive developmental outcomes. This need not be, and in the current system framework cannot be, the sole responsibility of child welfare authorities. Means of coordinating resources between child welfare, mental health, health, education and community service organizations seems a critical means for the improvement of service delivery to this population.

Community Influences

Generally, the increased explanation of variance due to community factors in models of incarceration and models of incarceration of violent offenses was small. Previous studies and

reviews have found that community risk factors generally have small overall effects relative to individual behavior (Jencks & Mayer, 1990). It is difficult to escape the fact, however, that in the present study the majority of the child welfare cases (both incarcerated and not) came from the poorest and most socially at risk neighborhoods in their communities. In other words, community variables are likely to be a more powerful predictor among groups which vary along the characteristics measured. This does not mean that living in disadvantaged neighborhoods causes child maltreatment or serious youthful offending, but it does imply that in these areas more families succumb to added risks which decrease the chances for positive outcomes among their children.

We cannot know how growing up in these types of neighborhoods truly impacts serious offending without knowing how it also affected all the other developmental factors implicated in juvenile crime such as school success, access to positive role models and neighborhood institutions, and perception of future opportunity. Additionally, we do not know whether broader issues of racism and class-based prejudice faced by the adults in these families may compound the impact of living in these areas. For example, studies have indicated that socioeconomic status is strongly related to parenting, which in turn is related to the development of delinquent behaviors (Goetting, 1994; Heimer, 1997). It seems both logical and reasonable to assume that the effect of living in an area where over a third of the households receive AFDC, the unemployment rate is triple that of other communities, and there are over 12 reported serious violent crimes per 1,000 in a given year is detrimental to many dimensions of child and adolescent development.

Research on resilience indicates that the more risk factors a child faces, the more

protective factors required to overcome those risks (Cicchetti, 1996; Herrenkohl, et al, 1994; Rutter & Rutter, 1993). Children in this study who grew up in unstable and in some cases abusive home environments, generally do not appear to have done well in school and in addition live in the worst communities. One highly controlled experimental study of the development of children from birth to age five, was able to completely explain reduced IQ between African American and Caucasian children based upon poverty and home environment (Brooks-Gunn & Duncan, 1996). One can imagine that as the time exposed to such conditions accumulates, the chances for many of these children diminish. Perhaps we should be more surprised that the rate of entry into CYA for these children was only double that of the population in general.

Family or future? Examination of policy must also be placed in the context of developmental goals. For example, the goal of preserving and reuniting families must be weighed against the ultimate goal of encouraging healthy development of a productive adult citizenry. Three years ago the story of Robert gained national publicity.

Robert was born in an impoverished community and severely abused and neglected most of his young life and finally removed with his siblings at age three. He was subsequently placed with his maternal grandmother still in an impoverished community and forced to share her attention alternately with ten adult children and some 30 grandchildren as the need arose. By age nine, he was committing a felony a month. At age eleven he committed murder during a drive by shooting, but before completing his road to incarceration he was shot and killed by his own gang (Gibbs, 1994).

While probably among the most dire child welfare scenarios, such cases raise difficult systemic questions. Despite the severity of abuse experienced by Robert and his siblings, the

child welfare authorities left these children in their mother's care beyond the time many would have considered the risk of preserving the family too great. Then, arguably, the system's intervention placed Robert in a setting still marked by impoverishment and perhaps benign neglect due to the grandmother's numerous other responsibilities. Research using only system outcomes and systemic data has indicated that placement with kin results in more placement stability and community continuity--considered positive child welfare outcomes (Needell et al, 1996). A case like Robert's, however, underscores the need to combine child welfare system and longer term developmental outcome research.

If certain home and neighborhood environments are not conducive to healthy development then policy makers and practitioners must weigh these factors in the prioritization of the best interests of the child. What is the public responsibility in cases where, unlike Robert, the child is not in life-threatening danger, but left in an environment of relative neglect and impoverishment is likely to fail to reach a productive adulthood? In cases like Robert's where intervention for the child's safety is warranted, how much weight should family or community continuity be given over the child's developmental needs? If cultural and familial ties are deemed to be of the highest import in a child's life, then it seems reasonable that adequate support be provided to ensure that we do not sentence children like Robert to futures filled with despair.

Multi-systemic Approaches

According to analyses of the age of the incarcerated youth at first petition and number of prior sustained petitions for delinquent offenses, it would appear that for a time youth entering

CYA in this sample were simultaneously coming to the attention of the child welfare and county juvenile justice systems. Despite missing over 50 percent of the educational data, the fact that most of the CYA entries had reading levels less than eighth grade suggests that these children were likely falling behind in school for many years--perhaps even prior to their involvement with child welfare and juvenile justice. Coupled with the fact that the overwhelming majority of the CYA cases resided in high risk communities, these data suggest that only a multi-agency approach with sufficient fiscal and political support will be effective in addressing the needs of these children and families.

Offering the suggestion of multi-agency intervention, however, is not intended to imply the rapid development of ad hoc committees or ill-fated short term grant ventures. Research and meta-analyses of program evaluations in conjunction with research focusing on the characteristics and pathways of children served in the child welfare system should be used thoughtfully to guide the development and application of such strategies. It is not enough to know that a program worked well in a given county, the knowledge base needs to continue to advance until we can have confidence about which intervention plans will work best with youth who have experienced a specific pattern of abuse during a particular developmental stage.

Administrative data and cross-system analysis. One means of aiding the appropriate construction of multi-system interventions is more effective utilization of administrative data. In order to know what questions to ask or what policies may require change, one must know the status of the event, outcome, or process in question. Without large-scale examinations of service trends and outcomes, policy makers and administrators are struggling to find a location without a map. The data used in the present study are readily available to system administrators and are

relatively inexpensive to analyze. Pre-planned cross-system linkages would greatly improve the capacity of various systems to understand the actual extent of system overlap as well as when the overlap occurs. Such maps can identify particular subpopulations or developmental timing of interest as well as locations in which particular staff or service configurations appear more successful. Then research can be more effectively targeted providing the maximum benefit to the field.

Administrative data also have potential for the integration of cost-benefit analysis in social welfare research. Increasingly, it is important to demonstrate potential long-term benefits of greater short-term costs--programs must be feasible and accountable. Administrative data is quite useful in tracking trends over time. Suppose a program was developed to address the needs of chronic child welfare cases and was assessed over a three year period. In addition to traditional program evaluation and case file methods, administrative data offers a means of assessing caseload changes across multiple agencies and over time. Such a system could provide an inexpensive way to monitor costs according to services provided, duration and outcomes.

Building on child welfare's potential: What about the cost? The proposal of increasing services to older children in the child welfare system either through child welfare resources or other agencies comes at a time when suggestions to expand governmental services meet with great skepticism. Yet the apparent capacity of child welfare services to make a difference in preventing serious youthful offending points to the efficiencies of building upon current service systems rather than creating new ones. The average yearly cost for incarceration of a single offender in CYA is approximately \$30,000 (N. Sknovd, personal communication) not counting related court and processing costs, or costs to victims. A total of 1,561 youth in 10 counties were

reported to child welfare authorities and later entered CYA. The cost of each year in CYA for this 10 county group is approximately 47 million dollars (not including the costs to crime victims). If the more comprehensive delivery of child welfare services could effect even 30 percent of those youth who are reported to child welfare authorities statewide, the fiscal and social savings would be substantial. The reduction in risk factors that could be achieved by better serving this group would also have a beneficial impact in reducing other negative social and educational outcomes. This is not a call for broad-based primary prevention services, but is a challenge to better serve abused and neglected children and youth with such sentinel events as multiple child abuse reports, multiple placements, and multiple spells in out-of-home care.

Conclusion

Serious juvenile offending is only one potential negative developmental outcome for children who are maltreated. Most of the abused and neglected children in this study never entered CYA, but the cost to those children who later enter these systems and the other family members or victims involved is disproportionate by higher than the numbers of youth involved. Analysis of children with maltreatment reports uncovered the child welfare pathways of almost 25 percent of the most serious and violent adolescent offenders in ten counties, leaving an unknown additional number of youth with child welfare histories who transition to serious offenses in adulthood who have yet to be studied. Further, the fact that many of the children living in such detrimental environments avoided the most severe (or obvious) later developmental hazards such as violent youth crime, should not be too comforting. While we all receive some comfort from stories of children who somehow integrate such experiences and go on to lead productive lives, surely this does not offset the concern for those children who do not

successfully cope with negative life events. Examples of resilience among children traumatized both in their homes (e.g., abuse and neglect) as well as their communities should not be used to absolve society's responsibility for continuing the struggle to alleviate the risk conditions themselves.

Of course, preventing the initial abuse of children should always be the primary goal. Until we can effectively prevent such occurrences, however, we are left with a charge to intervene and, as much as possible, rehabilitate. Yet, these services appear to have the potential or preventing juvenile incarceration among those children who enter the child welfare system despite its limitations. The findings in this study indicate that there are also areas which may be improved in the child welfare system's response to older children and youth. There should be a reconsideration of the level of risk associated with neglect, perhaps giving additional consideration to cases which return to the attention of the system even if the maltreatment situation does not worsen. Cases which return to the attention of the system should be flagged for more intensive investigation and service. Child welfare professionals need to consider developmental issues (particularly in regards to gender) in the assessment of need and delivery of services. To address the multiple needs of children and families reported for maltreatment, child welfare agencies should seek partnerships with other agencies to create or improve coordinated, multi-systemic services. Finally, assessments of child welfare system goals such as family preservation or reunification should be enhanced by data which pinpoint long-term consequences for these children and youth.

As they are now delivered, child welfare services do not seem to play a role in the lives of the majority of serious youthful offenders in the present study. If child maltreatment is mujch

more widespread among the juvenile offender population, but the majority of these cases are going undetected or at least unserved, the building upon the infrastructure of the child welfare system may be an effective means of intervening in the lives of these children. Testing approaches that substantially expand the comprehensiveness of these services should further inform us about whether more or different services are needed.

The children and youth who entered CYA in this study were often faced with multiple risk factors (e.g. maltreatment, community poverty, single parent homes) and displayed multiple risk behaviors (delinquency, SED, substance abuse). Further research and interagency planning may develop intervention responses more capable of meeting the level of need that these youngsters and their families display. As these programs are implemented, it is crucial that evaluations track longer term outcomes of children and families served in order to understand how and when services are most effective. Administrative data resources such as the California Children's Services Archive hold great potential for assessment of these long term outcomes at a much lower cost than long-term panel surveys. By weaving the results of program evaluations into the systemic pathways of children tracked through administrative data, we may find new means and rediscover the success of existing means of helping children and youth transition to healthy and productive adult lives.



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Table A.1: Sample County Comparison: Risk Factors for Children and Youth

	Alameda	Contra Costa	Fresno	Orange	San Diego	San Mateo	Santa Clara	Santa Cruz	Sonoma	Tulare
% Residents under 18 years ¹	26%	26%	32%	26%	26%	23%	25%	25%	26%	34%
% Young Children Below Poverty Level ²	16.4%	11.9%	36.1%	11.1%	17.2%	7.6%	10.4%	12.1%	9.7%	36.9%
% Urban ²	92.6%	98.2%	83.1%	99.8%	95.2%	98.9%	97.9%	88.3%	72.3%	69%
% African Amer. ¹	20%	12%	5%	2%	8%	5%	4%	1%	2%	2%
% Caucasian ¹	40%	59%	34%	51%	51%	43%	45%	61%	75%	40%
% Hispanic ¹	21%	12%	46%	12%	32%	30%	30%	34%	18%	52%
% Other ¹	19%	12%	14%	12%	9%	22%	21%	3%	5%	6%
State Rank (higher rank indicates worse outcomes):										
Child Abuse Reports ¹	7th	24th	27th	6th	15th	5th	11th	18th	15th	26th
Infant Mortality ¹	19th	13th	42nd	3rd	13th	17th	1st	18th	33rd	19th
H.S. Dropouts ¹	42nd	17th	53rd	21st	36th	17th	24th	34th	22nd	36th
Median Family Income ¹	7th	7th	36th	2nd	14th	2nd	1st	9th	10th	52nd
Teen Births ¹	19th	10th	43rd	26th	28th	11th	23rd	22nd	14th	45th

¹ Children Now. (1996) California: The State of Our Children Report Card '96

² Hall, R. & Richards, F. (1994). 1994 Report Health Data Summaries for California Counties

Table A-2 Description of 10 County Maltreatment Data and Study Sample

	Start Year of Data	End Year of Data	Total Children Reported	"Open" Definition	% 1994 Child Population	% 1994 Reports for Maltreatment	% Study Sample Investigated Maltreatment ¹	% of Sample In CYA ²
Fresno	1990	1995	73,181	Only those referred for services	3.0%	3.3%	8%	7.8%
Orange	1990	1995	118,355	Only those referred for services	7.5%	5.0%	5%	4.3%
San Diego	1990	1995	179,449	Only those referred for services	8.0%	11.8%	12%	23.9%
San Mateo	1990	1995	21,144	Only those referred for services	2.0%	1.0%	22%	13.1%
Santa Clara	1990	1995	61,510	Only those referred for services	4.5%	3.7%	26%	21.5%
Alameda	1990	1994	50,160	All face-to-face Investigations	4.0%	3.0%	3.8%	2.9%
Contra Costa	1991	1995	32,395	Only those referred for services	2.5%	2.6%	13.2%	17.2%
Santa Cruz	1991	1995	11,382	All face-to-face Investigations	7.0%	1.0%	1.8%	1%
Sonoma	1992	1995	11,492	Only those referred for services	1.2%	1.2%	2.1%	1%
Tulare	1992	1995	23,375	Only those referred for services	1.0%	1.3%	5%	7%
Total			582,443		41% of State	34% of State	100%	100%

Ward Name: _____ YA # _____
(last name, first, middle) *1-25* *26-30*

INSTRUCTIONS: See separate instructions for a detailed guideline on how to complete this form. When this form is completed at a clinic, attach it to the Clinic Summary, immediately following the Social History or the Psychological/Psychiatric Report.

PART I. Substance Use Consequences and History

1. Legal Consequences of Substance Use

Enter the number of arrests that were related, either directly or indirectly, to substance use. Total arrests, then multiply.

- 31 - 32 ___ Crimes Against Persons
- 33 - 34 ___ Property Crimes
- 35 - 36 ___ Dealing Drugs
- 37 - 38 ___ Possession or Under the Influence
- 39 - 40 ___ Driving / Traffic
- 41 - 42 ___ Total "Use" Related Arrests x 3 = POINT TOTAL ___

2. Relationship of Substance Use to Present YA

Commitment Enter an "x" by the item that corresponds to the present YA commitment.

- 43 ___ Directly Related: part of present commitment offense . . . (10)
- 44 ___ Indirectly Related: contributing element to the present commitment offense, (e.g., intoxicated during a crime, crime to support drug dependency, etc.) . . . (5)
- 45 ___ Unrelated . . . (0)

3. Substance(s) Used

Enter a "3" for the primary/preferred drug (if any), used at least 3 months. Only one drug may be marked with a "3". If the ward has more than one primary/preferred drug, enter a "3" for the higher weighted drug. Enter a "1" for any substance used on a more than experimental basis (at least 5 times). Multiply the numbers entered times the drug weights, then total.

- 46 ___ Opiates (heroin, morphine, ...) . . . x (3) = ___
- 47 ___ Cocaine / CRACK . . . x (3) = ___
- 48 ___ PCP . . . x (3) = ___
- 49 ___ Designer Drugs . . . x (2) = ___
- 50 ___ Hallucinogens . . . x (2) = ___
- 51 ___ Marijuana . . . x (2) = ___
- 52 ___ Downers / Depressants . . . x (1) = ___
- 53 ___ Alcohol . . . x (1) = ___
- 54 ___ Uppers / Stimulants . . . x (1) = ___
- 55 ___ Inhalents (volatile substances) . . . x (1) = ___
- 56 ___ None . . . x (0) = ___

POINT TOTAL ___

4. Other Consequences of Substance Use

Rate the severity of problems related to substance use in each area. Enter a "0" for no significant problem, a "1" for minor problems, a "3" for moderate problems, or a "5" for major problems. Total scores.

- 57 ___ Medical problems (illness, withdrawal symptoms, overdoses, memory loss, etc.)
 - 58 ___ Social problems (fights/violence, family problems, etc.)
 - 59 ___ Employment problems (absent, poor performance, fired, etc.)
 - 60 ___ School problems (suspended, kicked out, etc.)
- POINT TOTAL ___

5. Duration of Use

Enter an "x" by the longest duration.

- 61 ___ 4 or more years . . . (8)
- 62 ___ 2 - 4 years . . . (6)
- 63 ___ 1 - 2 years . . . (4)
- 64 ___ 6 - 12 months . . . (2)
- 65 ___ Less than 6 months . . . (1)
- 66 ___ No use . . . (0)

6. Frequency of Use

Enter the frequency for the highest scoring drug.

- 67 ___ Frequent binges . . . (8)
- 68 ___ Daily . . . (6)
- 69 ___ 5 - 6 times / week . . . (6)
- 70 ___ 3 - 4 times / week . . . (3)
- 71 ___ 1 - 2 times / week or less . . . (1)
- 72 ___ No use . . . (0)

7. Circumstances of Substance Use

Enter an "x" by the typical circumstances of drug use.

- 73 ___ Frequently alone . . . (8)
- 74 ___ Occasionally alone . . . (5)
- 75 ___ Seldom alone . . . (3)
- 76 ___ Rarely alone . . . (1)
- 77 ___ Does not use . . . (0)

TOTAL SCORE . . .
Circle the points earned for all seven items, then total. 78 - 80

PART II. Recommended Program

Enter an "x" next to the indicated program.

- Formalized Substance Abuse Program . . . 43 and above ___ 81
- Regular Program (with substance abuse counseling in the context of regular program goal setting) . . . 11 - 42 ___ 82
- Regular Program (no special substance abuse counseling indicated) . . . 0 - 10 ___ 83
- Override recommendation for indicated programming (check yes or no) . . . YES ___ (1) NO ___ (2) 84
- If yes, indicate recommendation: Formal Program ___ (1)
- Regular (w/S.A. counseling) ___ (2) Regular (no special S.A. counseling) ___ (3) 85

Comments (Justification for override, or unusual aspects of the ward's substance use history that should be taken into consideration in treatment decision making. Attach another piece of paper if needed.):

Date Completed: (mm-dd-yy) _____ 86 - 91

Completed By (print): _____ Location Code: _____ 92 - 94



APPENDIX C VARIABLE LIST

From Child Maltreatment Report Data

Case ID number

Child=s address at most recent report

Ethnicity 01"=African American
 02"=Caucasian
 03"=Hispanic
 04"=Other

Gender of child F=female
 M=male

Birthdate of child

Date of maltreatment report (up to fifteen reports possible)

Reason for maltreatment report (up to fifteen times)

01"=Sexual Abuse
 02"=Physical Abuse
 03"=Neglect
 04"=Other (emotional abuse, exploitation, disability)

Date of decision to investigate a report (up to fifteen times)

Date of decision to open a case (up to fifteen times)

From Foster Care Data

Case ID number

Start date of each spell in foster placement

Reason for placement into foster care (e.g. neglect, physical abuse, sexual abuse, law violation, other)

Facility type of first placement for each spell in foster care (e.g. foster family, group home, shelter , other)

Primary placement type (for CWS only cases) for each spell

Date foster placement termination

Reason for termination from foster care (e.g. reunification, adoption/ guardianship, incarceration, runaway, other)

From California Youth Authority Data

Case ID number

Date of first admission to CYA

Age at first sustained petition

Primary commitment offense (violent=murder, rape, sexual assault, assault, robbery;
 non-violent=all property crimes, drug offenses, and miscellaneous non-person felonies)

Use of weapon during primary commitment offense
Number of prior commitments (non-CYA)
Number of prior sustained petitions for delinquent acts
Substance abuse counseling assessment score
Reading level assessment score (TABE)
Number of siblings
Number of children of the ward
Marital status of the parents

From Birth Data

Mother's age at time of birth
Birthweight
Month prenatal care began
Gestational age

From Census Data

Number of persons per census tract
Median family income in 1989
Census tract residents by age
Census tract residents by ethnicity
Number of children below the poverty level in 1989
Number of adults without a high school diploma
Number of English-speaking residents (residents coded as speaking English well or English only)
Same or different house in 1985 (5 years prior to census)
Residents in the United States for less than 5 years
Number single mother families
Number of households receiving AFDC

From Special Education (SED) Data

Ever served as Severely Emotionally Disturbed



