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Research report

Pathways of Care Longitudinal Study: Outcomes of Children and Young People in Out-of-Home Care

Offending Among Young People in Contact with the Out-of-Home Care System

Pathways of Care Longitudinal Study: Outcomes of Children and Young People in Out-of-Home Care in NSW

Research Report No. 18

Offending Among Young People in Contact with the Out-of-Home Care System

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320 Liverpool Road
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Prepared by
Albert Zhou, Joanna Hopkins, Merran Butler, Melissa Burgess, Johanna Watson, Marina Paxman and Sharon Burke. DCJ.

Disclaimer
DCJ funds and leads the Pathways of Care Longitudinal Study. The analyses reported in this publication are those of the author. The author is grateful for the comments received by Dr Don Weatherburn and Dr Eric Heller.

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All the analyses presented in this report are based on the January 2018 version of the DCJ administrative data and linked offending data.

Pathways of Care Longitudinal Study Clearinghouse All study publications including research reports, technical reports and briefs can be found on the study webpage www.facs.nsw.gov.au/resources/research/pathways-of-care

Study design by NSW Department of Communities and Justice Insights, Analysis and Research; Australian Institute of Family Studies; Professor Judy Cashmore, University of Sydney; Professor Paul Delfabbro, University of Adelaide; Professor Ilan Katz, University of NSW; Dr Fred Wulczyn, Chapin Hall Center for Children University of Chicago..

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Preface

The Pathways of Care Longitudinal Study (POCLS) is funded and managed by the New South Wales Department of Communities and Justice (DCJ). It is the first large-scale prospective longitudinal study of children and young people in out-of-home care (OOHC) in Australia. Information on safety, permanency and wellbeing is being collected from various sources. The child developmental domains of interest are physical health, socio-emotional wellbeing and cognitive/learning ability.

The overall aim of this study is to collect detailed information about the life course development of children who enter OOHC for the first time and the factors that influence their development. The POCLS objectives are to:

- Describe the characteristics, child protection history, development and wellbeing of children and young people at the time they enter OOHC for the first time.
- Describe the services, interventions and pathways for children and young people in OOHC, post restoration, post adoption and on leaving care at 18 years.
- Describe children's and young people's experiences while growing up in OOHC, post restoration, post adoption and on leaving care at 18 years.
- Understand the factors that influence the outcomes for children and young people who grow up in OOHC, are restored home, are adopted or leave care at 18 years.
- Inform policy and practice to strengthen the OOHC service system in NSW to improve the outcomes for children and young people in OOHC.

The POCLS is the first study to link data on children's child protection backgrounds, OOHC placements, health, education and offending held by multiple government agencies; and match it to first-hand accounts from children, caregivers, caseworkers and teachers. The POCLS database will allow researchers to track children's trajectories and experiences from birth.

The population cohort is a census of all children and young people who entered OOHC over an 18 month period for the first time in NSW between May 2010 and October 2011 (n=4,126). A subset of those children and young people who went on to receive final Children's Court care and protection orders by 30 April 2013 (2,828) were eligible to participate in the study. For more information about the study please visit the study webpage www.facs.nsw.gov.au/resources/research/pathways-of-care.

The POCLS acknowledges and honours Aboriginal people as our First Peoples of NSW and is committed to working with the DCJ Aboriginal Outcomes team to ensure that Aboriginal children, young people, families and communities are supported and

empowered to improve their life outcomes. The POCLS data asset will be used to improve how services and supports are designed and delivered in partnership with Aboriginal people and communities.

DCJ recognises the importance of Indigenous Data Sovereignty (IDS) and Indigenous Data Governance (IDG) in the design, collection, analysis, dissemination and management of all data related to Aboriginal Australians. The POCLS is subject to ethics approval, including from the Aboriginal Health & Medical Research Council of NSW. DCJ is currently in the process of scoping the development of IDS and IDG principles that will apply to future Aboriginal data creation, development, stewardship, analysis, dissemination and infrastructure. The POCLS will continue to collaborate with Aboriginal Peoples and will apply the DCJ research governance principles once developed.

1 Executive Summary

Children in OOHC are generally over-represented in the juvenile justice system. This study investigates the likelihood and timing of the first offence among vulnerable young people in OOHC. Based on the linkage data from the POCLS and through modelling of event occurrence, we found that young people who were older at placement (i.e., 12-14 years of age) are more likely to offend as are young males and Aboriginal young people[1]. Young people who were exposed to neglect or who had a history of risk behaviour (e.g., drug and alcohol misuse) prior to entry to OOHC also had an increased risk of offending. Being placed in residential care or 'other' types of placement (e.g., supported accommodation) is significantly associated with offending while a longer stay in OOHC was found to be significantly related to a decreased risk of offending. Findings highlight the importance of placement setting and duration of OOHC in reducing the risk of offending among young people in care. Implications of the findings for policy and social work practice are discussed.

[1] This should not be interpreted as Aboriginal young people were at a higher risk of first offence because they are Aboriginal. Rather, it might be a function of the socioeconomic disadvantages that these young people and their families have experienced before they entered care.

2 Introduction

Young people offending is of ongoing interest to researchers and policymakers alike, especially offending amongst young vulnerable people who came into contact with the child welfare system.

On the one hand, there has been an increase over time in the number of children who come into contact with the child welfare system. For example, the number of children and young people who were in OOHC in New South Wales (NSW) was 17,387 on 30 June 2018[2] – an increase of 37% from June 2007[3]. Many of these children had been neglected or abused prior to entry to OOHC. The circumstances faced by these children and their families, which are well documented, include poverty, social disadvantage, carer drug and alcohol misuse, mental health issues and domestic violence (Bromfield, Lamont, Parker & Horsfall, 2010).

On the other hand, children in OOHC are over-represented in the NSW juvenile justice system and nationally (AIHW, 2017; MaFarlane, 2010; Ringland, Weatherburn & Poynton, 2015). It is reported that 24 per cent of young offenders on community orders and 28 per cent of young offenders in custody in NSW had been in OOHC (Kenny and Nelson, 2008) and according to the newly released AIHW report (2017):

> *"young people under youth justice supervision were 12 times as likely as the* general population to be in the child protection system. Indigenous Australians were 16 times as likely as their non-Indigenous counterparts to be both in the child *protection system and under youth justice supervision."*

Given the growth in the number of children in OOHC and the over-representation of OOHC children in the juvenile justice system, identifying those at risk of offending early among young people who enter OOHC would enable resources to be targeted to those who are most in need.

A review of the literature has revealed a link between child maltreatment and juvenile involvement in crime. It was found that children who were subjected to abuse and neglect

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[2] As at 30 June 2018, the majority of children (95.7%) in OOHC in NSW lived with a related/kin or non-related/foster carer. The rest were placed in alternative arrangements such as residential care or supported accommodation. Aboriginal children and young people accounted for around 39% of the OOHC population.

[3] The NSW population (0-17 years) grew by 9.8% during the same period. The rate of children and young people in OOHC in NSW increased from 80 per 10,000 population aged 0-17 years in 2007 to 99 per 10,000 population aged 0-17 years in 2018.

were significantly more likely to have a criminal record and a larger number of arrests as adults (Widom 1989; Stewart et al., 2002). In particular, children with OOHC placements were more likely to offend than children who were not placed in OOHC (Stewart et al., 2002). However, other studies have found no evidence of greater criminality by children in OOHC. For example, Widom (1991) examined the role of placement experiences of 772 abused and neglected children in relation to delinquent, adult criminal, and violent criminal outcomes in a metropolitan area in the US Midwest and found that placement alone is not associated with increased risk for delinquency or adult criminal behaviour.

There are also studies, which focused on the relationship between re-offending and contact with the child welfare system, with mixed findings. These include studies focusing specifically on different types of maltreatment and different types of crime. Weatherburn, Cush & Saunders (2007) examined re-offending amongst a sample of young offenders previously given a supervised community-based court order and found that having a previous placement in OOHC and previous neglect or abuse experience were not independently associated with re-offending. Recent research by Ringland et al. (2015) linking re-offending data for juveniles in NSW with data on the history of risk of significant harm (ROSH) reports and OOHC, showed that overall, the inclusion of child protection data does little to improve the ability to predict re-offending. However, some child protection data variables were found to be predictors of re-offending once separate models were developed for male and female children and young people.

In recent years, there was an increasing interest in the link between OOHC and juvenile involvement in crime and the criminalisation of children in OOHC (Bromfield et al. 2005; McFarlane 2017; Queensland Family and Child Commission 2018) and the question, does the OOHC system criminalise or protect children? To answer this question, it is important to understand why and how young people in OOHC came into contact with the criminal justice system in the first place and the factors that lead to the onset of criminal behaviour after entry to OOHC. For the present study, first-time offending refers to the first offence committed by the young person[4], which might result in a police caution, juvenile justice conference or court appearance and the offence could be either proven or not proven in court. Offending is often referred to as formal contact with the criminal justice system. This paper uses these two terms interchangeably.

[4] As recorded in the NSW Bureau of Crime Statistics and Research (BOCSAR) Re-Offending Database (ROD).

The present study takes advantage of the administrative linkage data made available through the POCLS and examines the likelihood and timing of first offence among young people in OOHC in NSW [5]. The findings in this report, facilitated by linking the child protection and crime administrative data, have enormous potential to improve the quality and effectiveness of public services and programs.

[5] The reason for not utilising the survey component of the POCLS data at this stage is that there is only a small number of children who offended and also participated in the interview during the observation period. Of the 240 children who had a first offence, only 26 participated in the POCLS wave 1 interview.

3 Aim

The study aims to examine whether and when young people who entered OOHC for the first time with no prior formal contact with the criminal justice system commit their first offence. The issue of timing is important and has policy implications as it will guide when to intervene.

The literature has shown that there are significant associations between demographic characteristics such as age, sex and Aboriginal status and re-offending (Lind, 2011; Ringland et al. 2015; Smith & Jones, 2008). There is also evidence of links between childhood abuse and neglect and offending. It was found that rates of offending were higher among those who had been maltreated than those who had not (Mersky, Topitzes and Reynolds, 2012) and young persons who entered OOHC later were more likely to come into contact with the criminal justice system than their younger counterparts (Baskin & Sommers, 2011). The recent study by Ringland et al. (2015) shows that the child protection factors that are associated with re-offending differ between males and females. The risk factors for males are an OOHC placement before 10 years of age, a ROSH report in the five years prior to the index contact and reported issues of runaway child or young person in the five years prior to the index contact whereas the factors for females are placement in OOHC for more than 10 years, a residential care placement prior to the index contact, a ROSH report in the 12 months prior to the index contact and neglect as a reported issue in the five years prior to the index contact (Ringland et al., 2015).

One important question relating to OOHC and offending or re-offending is whether OOHC increases or helps reduce the risk of a young person's involvement in the criminal justice system. In other words, does OOHC act as a protective factor for the children for whom it is intended to serve? Although there were children who entered OOHC on interim orders and might return home shortly after entry to OOHC, POCLS was not designed to examine the effect of intervention by OOHC because, by design, the POCLS children have all been in OOHC at some point. To examine the effect of OOHC would require a different study design, for example, where a cohort of children who were the subject of a ROSH report was followed over time. Children who received the ROSH reports and did not have contact with the OOHC system can then be used as a control group. Nevertheless, it is still possible to examine whether there is a relationship between time in OOHC (i.e., the 'dosage') and first-time offending with the POCLS data.

Another issue when considering the relationship of OOHC and (re-)offending is the temporal order of events. An offence could occur at a time before a young person entered OOHC, during a placement in OOHC and/or after exit from OOHC. In addition, a young person could enter and exit OOHC multiple times and have multiple offences (i.e.,

re-offending) over a period of time. A history of OOHC placements might confound with a history of offending, making it difficult to discern what contributes to what. As such, the present study excluded the young people (14.4%) in the POCLS who had a history of offending prior to entry into OOHC. Focusing on first-time entries to care with no history of offending allows us to control for the potential confounding factors introduced by multiple entries and a history of offending.

This paper addresses the following research questions:

- To what extent does age shape the risk of first offence among young persons who come into OOHC for the first time?
- How does the risk of first-time offending differ between
    - male and female young persons?
    - Aboriginal and non-Aboriginal young persons?
- Is there an association between the risk of first offence and
    - child protection history (e.g., number of ROSH reports, type of reported issues)?
    - type of arrangement?
    - number of care episodes?
    - time in OOHC?

The analysis will focus on identifying early warning indicators of juvenile offending amongst young people who came into contact with the OOHC system.

4 Method

4.1 Data sources

Data for the study came from the POCLS's linkage data, namely DCJ child protection administrative data and the Bureau of Crime Statistics and Research's (BOCSAR) Reoffending Database (ROD). The two sets of data were linked by the NSW Centre for Health Record Linkage (CHeReL) using probabilistic record linkage methods.

The POCLS child protection administrative data includes child protection reporting and OOHC placement histories for the 4,126 children in the POCLS population cohort up to 30 June 2016 (which includes all children and young people who entered OOHC for the first time in NSW between May 2010 and October 2011). The linked ROD data includes records of all contacts with the criminal justice system for children aged 10 years and older at the time of the offence spanning the period from 1 January 2003 to 30 June 2015.

The endpoint of the observation period (i.e., during which we have the observed data on whether a young person in the POCLS offended for the first time) is 30 June 2015[6] . As young people entered the study at different time points, the follow-up period for each person in the sample varies from 3 years 8 months to 5 years 2 months.

4.2 The study cohort

Around a quarter of the children in the POCLS population cohort were aged 10 years and above (n=1,008) at the time of the first entry into OOHC. The reason for restricting the sample to those aged 10 to 17 years is to allow for a complete offending history before entry to OOHC for everyone in the sample[7]. Of these 1,008 young people, 85.6 per cent had no prior formal contacts with the criminal justice system before first entry to OOHC (n=863) and only 145 (14.4%) had a history of offences prior. These 863 young persons (i.e., first-time entries to care with no history of criminal justice contact) make up the

[6] This is the last observed offence date in the ROD data. Any offences after this point are not captured in the data.

[7] If a young person was aged 17 years at first entry in May 2010, he or she would have been aged 10 years in 2003 so his/her offending history prior to entry would be captured in the ROD data that is available in the study.

sample for the present study[8] and of these, 240 (27.9%) had a formal contact with the criminal justice system by 30 June 2015 following their entry into OOHC (between May 2010 and October 2011).

Table 1 shows the types of first most serious principal offences[9] committed by the 240 young persons who were observed to have at least one offence during the follow-up period. Most offences were related to assault, theft, breach of orders and property damage. The age of these young persons at the time of first offence ranges from 11 to 20 years old, with the average being 14 years.

Table 1: Type of first most serious principal offences (n=240)

Type of first offences	n	%
Acts intended to cause injury	72	30.0
Theft and related offences	46	19.2
Offences against justice procedures, government security and government operations (Breach of orders)	31	12.9
Property damage and environmental pollution	24	10.0
Unlawful entry with intent/burglary, break and enter	18	7.5
Public order offences	14	5.8
Traffic and vehicle regulatory offences	10	4.2
Illicit drug offences	9	3.8
Robbery, extortion and related offences	6	2.5
Sexual assault, dangerous or negligent acts endangering persons, fraud, deception abduction etc	10	4.2
Total	240	100

4.3 Statistical analysis

Given the focus of the present analysis is on whether and when the first offences occurred, this is a typical 'time-to-event' situation that lends itself to survival analysis. Survival analysis provides an appropriate statistical framework for investigating event occurrence with the presence of censored observations. In the present study, censored observations of time arise, for example, when offending can't be observed beyond the endpoint of the observation period. The Kaplan-Meier survival curve was used to

[8] Information on the date of offence is missing for four young persons (from ROD). These four persons were dropped in the subsequent analysis involving time, n=859).

[9] Where multiple offences occurred in the same event (i.e., same contact - offences that were dealt with in the same youth justice conference, court appearance, etc.), the most serious offence based on the most serious penalty received is listed here.

describe the overall trend when first offences had occurred at the observed time period. Both bivariate analyses and multivariate regression models were employed. The bivariate analyses aimed to identify factors (see list of explanatory factors below) that might be correlated with risk of offending and which might, therefore, be included as controls in the multivariate regression models.

To address the research questions and also account for the issue of censored observations, survival time regression models were constructed to examine the effects of multiple predictors (e.g., placement type, time in OOHC etc) simultaneously after controlling for the effects of age, gender and Aboriginality. The reason for choosing survival time regression models is that these models focus on the time to the first offence (i.e., survival time), which is more intuitive and easier to interpret and understand[10]. As such, this paper presents time ratios (i.e., effects on the time scale) from survival time regression models[11].

In the present study, the time to first offence is calculated as the number of days from the date a young person first entered OOHC to either the date a young person committed his/her first offence (as recorded in the ROD) or the end of the observation period (i.e., 30 June 2015) for those young people who did not go on to commit an offence by 30 June 2015[12] . The outcome variable in the regression models is the rate that a young person will commit the first offence following the entry into OOHC during the observation period, that is, how soon the first offence would take place at time t after entry given it had not occurred before time t.

Given that we measure time to the first offence as the number of days between a young person first entering OOHC, and the date of their first (subsequent) offence (or 30 June 2015), the length of time spent in OOHC during the follow-up period varied for each young person[13]. Some young persons may have left OOHC early and others may have

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[10] Semi-parametric regression models, such as the Cox proportional hazards model, focus on the hazard function while parametric survival time models, such as the Exponential and Weibull models, focus on the survival time. For more information about semi-parametric versus parametric regression models, see Hosmer and Lemeshow (1999).

[11] Cox regression analysis was also performed for cross-validation purposes and provided consistent results (not presented).

[12] This can also be expressed as months or years.

[13] Of the 240 young persons who were observed to have a formal contact with the criminal justice system after first entry, 33 per cent (n=80) were in an OOHC placement at the time of the offence. The rest were not in OOHC when the offence took place. These figures are based on those (n=240) who had an offence during

stayed in OOHC longer. Some may have returned to OOHC multiple times during the follow-up period. If OOHC were an effective intervention, a young person's risk of contact with the criminal justice system may be reduced while in OOHC and those in OOHC longer may have a reduced risk of contact or remain contact-free for a longer period of time. To explore this possible effect, we created a dichotomous internal time-varying covariate of whether the young person was in OOHC during the follow-up period[14] .

There were two steps involved in creating this time-varying covariate. The first step was to determine the duration in care prior to the first offence or 30 June 2015 for every young person in the sample by comparing the dates when a young person entered and exited OOHC and the first offence date or 30 June 2015. The second step was to construct the time-varying variable to indicate whether a young person was in OOHC at each failure time (i.e., at each follow-up time period whenever an offence occurred) using the indicator function z(t)=I(t□DUR_CARE), where DUR_CARE is the duration of OOHC from step 1[15].

Factors to be considered in the analysis

Informed by the literature, the following factors were examined in the present analysis. As the focus of this study is not on the differences in risk factors between males and females, we used the whole sample and included gender as a covariate in the model. Our purpose is to identify a common set of risk factors of first-time offending by not only controlling for gender but also other demographic characteristics in the model.

Demographic characteristics:

- Gender (female, male)
- Aboriginal status (Aboriginal, non-Aboriginal)
- Region of residence (metro, regional/remote).

Child protection history:

- Age at first ROSH report
- Number of ROSH reports prior to entry into OOHC

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the follow-up period. However, the survival time regression model presented later used the information from everyone (n=859, including those censored observations).

[14] Based on survival time and duration of OOHC for each young person in the data (n=859).

[15] To do that, we split the data (using the command 'stsplit' in Stata) into a series of risk sets for each young person in the data so that each has a line for each risk set that he/she appeared in (from _t0 to _t). This turned the data set from n=863 to n=157,799 observations as there were up to 219 failure times a young person had.

- Duration from first ROSH report to first entry into OOHC.
- Whether there was a history of reported issues involving:
  - Physical abuse
  - Sexual abuse
  - Neglect
  - Psychological abuse
  - Domestic violence
  - Carer mental health issue
  - Carer emotional issue
  - Carer drug or alcohol misuse
  - Child or young person risk behaviours.

OOHC placements:

- Age at first entry into OOHC
- Final vs. interim order status, that is, whether the child received a final order from the Children's court by 30 April 2013[16]
- Predominant placement type of first care period (i.e., foster care, kinship care, residential care, parents and other). A young person may enter and exit placements multiple times over a period of time. When the placements overlap or have a gap of fewer than 30 days between the end of one placement and the start of another, these placements are joined to form a care period. Therefore, a care period is a continuous time period in OOHC and may consist of multiple placements. The predominant placement type here refers to the type of the longest placement in the first care period
- Whether the young person had multiple care episodes over the observation period (0=one care episode only, 1=two or more care episodes). A new care period indicates a re-entry into OOHC
- Whether in OOHC during the follow-up period (0=not in OOHC, 1=in OOHC). This is the time-varying variable in the present study which changes depending on the length of follow-up and the duration of OOHC.

[16] All POCLS children and young people entered OOHC for the first time between May 2010 and October 2011. Most of these children were on interim Children's Court care and protection orders when entering OOHC. Those children who went on to receive final orders by 30 April 2013 were eligible to participate in the interview component of the study. Children on interim orders usually stayed in OOHC for a short period of time before they returned home. Some of these children moved between their natural home and foster homes and some received final orders and were placed in a long-term OOHC placement after April 2013. These children were still classified in the 'Interim orders' group. This variable is therefore not a good indicator of the dosage of OOHC.

5 Results

5.1 Sample characteristics

As mentioned, the cohort consists of 863 children in the POCLS population cohort who were aged 10 years or older when they entered OOHC for the first time, and had no prior formal contacts with the criminal justice system. Table 2 shows there were more females (56.1%) than males and close to a quarter were Aboriginal. There were fewer young people aged 16 and 17 at entry in the cohort compared to other ages. More than two-thirds of young people lived in regional or remote areas.

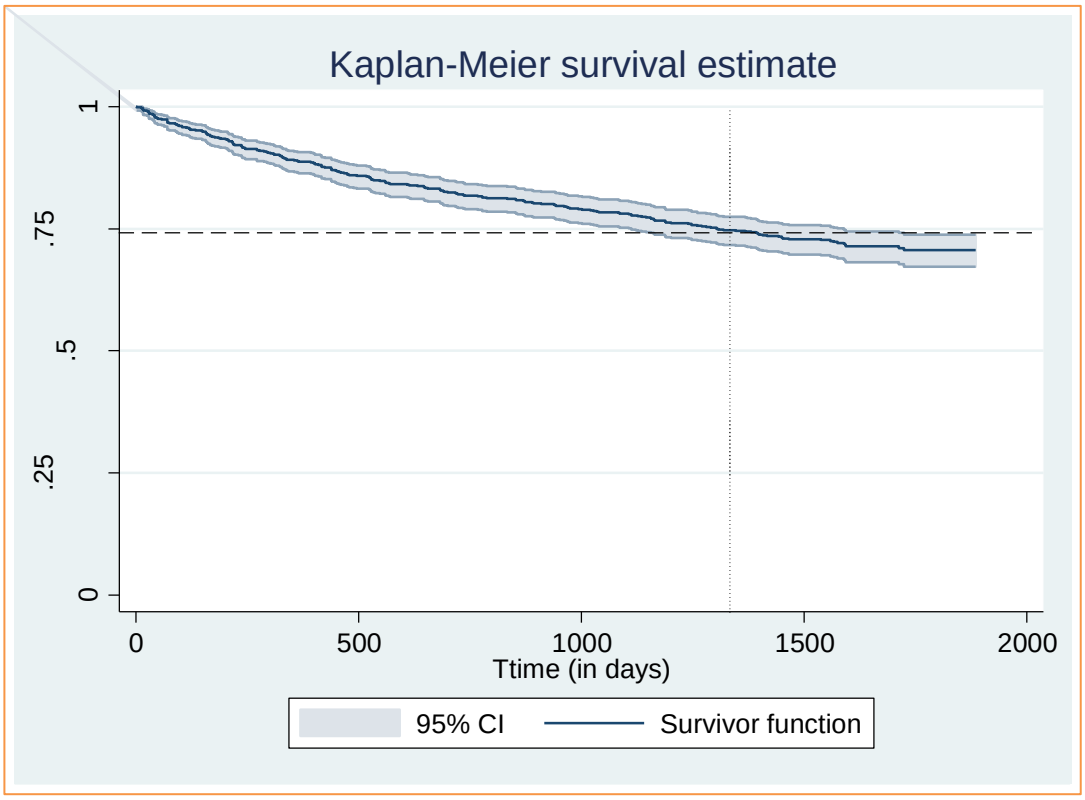
Table 2: Demographic characteristics of the study cohort

Demographics	Young people n	Total %
Gender		
Female	484	56.1
Aboriginal status		
Aboriginal	204	23.6
Age at entry (years)		
10	137	15.9
11	156	18.1
12	124	14.4
13	132	15.3
14	156	18.1
15	107	12.4
16	36	4.2
17	15	1.7
Region		
Regional/remote	583	67.6
Total	863	100

5.2 Overview of the length of time from entry to first offence

Of the 859[17] children included in the analysis, 240 or 27.9% were shown to have committed a first offence following their first entry into care. In other words, 72.1% did not commit an offence as of June 2015. This is reflected in Figure 1, which shows a slow descending survival curve with a flat right tail.

Figure 1: Kaplan-Meier survival estimates of the time from first entry to first-time offending



The overall rate of first offence was estimated to be 76.7 per 1,000 person-years-at-risk[18]. This suggests that there are around 76 young people who are at risk of having a first offence per 1,000 first-time entries per year. In other words, of every 1,000 young persons aged 10-17 years who entered OOHC for the first time over a typical period of

[17] Table 2 refers to all young people in the sample, n=863. As noted, information on the date of offence is missing for four young persons (from ROD). These four persons were dropped in the subsequent analyses involving time.

[18] Rate was calculated using the formula: rate = $\frac{Number\ of\ events}{Total\ person\ years\ of\ obversation}$.

time, 76 are at risk to have their first contact with the justice system at some time each year within the following five years.

By the end of the observation period, a quarter of the young persons (i.e., the 25th percentile) who entered OOHC for the first time committed an offence and did so within 1,304 days (about 3 years 7 months)[19].

5.3 Bivariate analysis of first-time offending

Table 3 provides the summary statistics that describe first-time offending within the study cohort. The analyses presented here are bivariate only, which means that the relationship between the covariates and risk of offending are examined one covariate at a time. Bivariate results alone could be potentially misleading as there is no adjustment for potential confounders and/or effect modifiers in the analysis. These issues will be addressed by the multivariate analysis through the survival time regression models, the findings from which are presented in the next section.

Table 3 shows[20] that the following groups of young people were more likely to come into contact with the criminal justice system and did so in a relatively shorter period of time after entry into OOHC:

- Male
- Aboriginal people
- Those aged 12-14 at the entry to OOHC
- Those with a larger number of ROSH reports prior to entry to OOHC
- Those with a longer duration (i.e. 2 years or more) from first ROSH report to entry to OOHC
- Those with a history of physical abuse, neglect, psychological abuse, carer emotional or child risk behaviour
- Those living predominantly in residential care or supported accommodation.

[19] With a 95% Confidence Interval of (1,112, 1,590). The 50th and 75th percentile can't be estimated as there were still some 72% of young persons who did not commit an offence within the follow-up period.

[20] Time to first offence indicates how much time elapsed before 25 per cent of the young persons committed a first offence after entry to OOHC. Both Log-rank test and Wilcoxon test were performed to examine the bivariate relationships between first-time offending and each of the explanatory factors. In all cases, the two tests provided consistent results.

The following factors are not found to be associated with first-time offending:

- Region of placement
- Age at first ROSH report
- History of sexual abuse, domestic violence, carer mental health issues and carer drug/alcohol misuse
- Final order status
- Multiple care episodes.

Table 3: Offending after entry by child, child protection history and placement characteristics

Variables	Total n of young people	Total n of young people with first offence	% of young people with first offence[#]	Time to first offence (years)	Sig.
All young people	859	240	27.9	3.6	
Gender					***
Female	481	111	23.1	.	
Male	378	129	34.1	2.8	
Aboriginal status					**
Aboriginal	202	73	36.1	2.7	
Non-Aboriginal	657	167	25.4	4.3	
Age at first entry					***
10 years	137	24	17.5	.	
11 years	155	32	20.6	.	
12 years	123	44	35.8	1.9	
13 years	132	42	31.8	2.7	
14 years	155	58	37.4	1.4	
15-17 years	157	40	25.5	4.4	
Region					n.s.
Metro	268	71	26.5	4.0	
Regional/remote	580	164	28.3	3.6	
ROSH reports prior to entry					***
<3 reports	215	37	17.2	.	
3-6 reports	206	53	25.7	4.3	
7-13 reports	207	69	33.3	3.0	
14+ reports	231	81	35.1	2.1	
Age at first ROSH					n.s.
<6 years	224	60	26.8	3.8	
6-11 years	449	138	30.7	3.1	
12-17 years	147	35	23.8	4.7	

Table 3: Offending after entry by child, child protection history and placement characteristics (cont)

Variables	Total n of young people	Total n of young people with first offence	% of young people with first offence[#]	Time to first offence (years)	Sig.
Duration ROSH to Entry					*
<2 years	184	36	19.6	.	
2-<5 years	196	62	31.6	3.2	
5-<7 years	313	95	30.4	3.1	
7+ years	127	40	31.5	2.2	
Reported issue prior to entry - Physical abuse					**
No	222	45	20.3	.	
Yes	637	195	30.6	3.2	
-Sexual abuse					n.s.
No	509	134	26.3	3.9	
Yes	350	106	30.3	3.2	
-Neglect					***
No	248	39	15.7	.	
Yes	611	201	32.9	2.7	
-Psychological abuse					***
No	264	52	19.7	.	
Yes	595	188	31.6	3.0	
-Domestic violence					n.s.
No	406	102	25.1	4.4	
Yes	453	138	30.5	3.0	
-Carer mental health issues					n.s.
No	697	203	29.1	3.4	
Yes	162	37	22.8	.	
-Carer emotional issues					*
No	501	123	24.6	4.7	
Yes	358	117	32.7	2.8	
-Carer drug/alcohol misuse					n.s.
No	431	113	26.2	4.0	
Yes	428	127	29.7	3.3	
-CYP risk behaviour					***
No	552	120	21.7	.	
Yes	307	120	39.1	1.5	

Table 3: Offending after entry by child, child protection history and placement characteristics (cont)

Variables	Total n of young people	Total n of young people with first offence	% of young people with first offence#	Time to first offence (years)	Sig.
Predominant placement type – first care period od					***
Foster care	278	67	24.1	4.7	
Kinship	331	72	21.8	.	
Residential	60	30	50.0	0.6	
Parents	61	21	34.4	2.7	
Other	129	50	38.8	1.4	
Final order status					n.s.
Interim order	475	134	28.2	3.6	
Final order	384	106	27.6	3.3	
Multiple entries to OOHC					n.s.
No multiple entries	764	205	26.8	3.8	
One or more	95	35	36.8	2.6	

Notes: 1) # This is based on the 25th percentile of the time from first entry to first offence. If the time is missing (“.”), it means that 25 per cent of the persons in that group did not commit an offence by 30 June 2015 2) * p<.05; ** p<.01; *** p<.001; n.s. – not significant 3) ^ The significance level is based on the Log-rank test although Wilcoxon tests were also performed. Both tests provide consistent results 4) # The %’s in this column were calculated within each category (i.e., the row %). They do not add up to 100%. For example, 23.1% for female means that, of all young females, 23.1% were observed to have their first offence during the observation period. Same for males.

5.4 Multivariate analysis of risk and timing of offending

A series of survival time regression models were constructed to examine the effects of the above predictors on the risk and timing of offending simultaneously while accounting for censored observations. When interpreting the results in Table 4, it is worth noting that the risk of offending and time to offend are just different ways of expressing the same thing. For example, saying females were slower to offend than males is the same as saying females were less likely than males to offend within a given period of time. A longer time to offend implies a relatively lower risk of offending while a shorter time to offend implies a higher risk of offending. Hence, the lower the value in the column ‘time ratio’ in Table 4, the faster the first-time offending.

Many factors that were significant in the bivariate analysis were not significant in the regression models when other factors are present. The findings from the final survivial

time regression model are presented in Table 4[21], which shows seven significant predictors: age at first entry, a history of neglect and child risk behaviour (e.g., drug/alcohol misuse, self-harming) prior to first entry, placement type, gender, Aboriginal status and whether the young person was in OOHC at the follow-up time.

The model shows that, while holding the other variables constant in the model (Table 4):

- The older a young person, the more likely he or she would offend and would do so in a shorter period of time. This is generally so for ages at entry between 12 and 14 (although 13-year-olds are on the border of significance (p=0.05)). For example, the time to first offence for a 12-year-old at entry is estimated to be approximately one-third (35.6%) that of a 10-year-old at entry. In other words, the 12-year-olds were more likely to offend and did so in a shorter period of time than the 10-year-olds, i.e., by shortening the time to first offence by 64.4 per cent. There seems to be no difference between 10 and 11, and 10 and 15-17 year olds at entry.
- There is an association between child protection history and the risk of first-time offending. Young people with a history of neglect prior to entry to OOHC were more likely to offend and did so in a shorter period of time. The effect of having been exposed to neglect is estimated to shorten the time to first offence by 65.0 per cent. Young people with a history of risk behaviours prior to entry to OOHC were more likely to offend and did so in a shorter period of time. The effect of that exposure is estimated to shorten the time to first offence by 58.4 per cent.
- There is an association between placement type and risk of first-time offending. For example, the time to first offence for a young person who was predominantly placed[22] in residential care is estimated to be about a quarter (25.8%) that of a young person who was placed in foster care. In other words, young people who were predominantly placed in residential care after they entered OOHC were more likely to offend and did so in a shorter period of time. The effect of being placed in residential care is estimated to shorten the time to first offence by 74.2 per cent. Similarly, young people who were predominantly placed in 'other' type of placement (mainly supported accommodation) after they entered OOHC were more likely to offend and did so in a shorter period of time. Other placement types are not statistically significant.
- Males were more likely to offend than females and did so in a shorter (i.e., around half) period of time.

[21] Results from the Cox proportional hazards model are not presented here given it provides consistent results to the survival time regression (also called 'Weibull') model.

[22] Predominant placement refers to the placement with the longest duration within a care period.

- Aboriginal young people were more likely to offend and did so in a shorter (i.e., around half) period of time. This does not suggest that Aboriginal young people were more likely to offend because they are Aboriginal. Rather, it might be a function of the socioeconomic disadvantages that these young people and their families have experienced before they entered care.
- There is an association between time in OOHC and the risk of first-time offending. The time to first offence for a young person who was in OOHC is estimated to be almost four times (390.0%) that of a young person who was not in OOHC at the follow-up time. In other words, young people who stayed in OOHC longer had a reduced risk of offending or remained offending free for a longer period of time.

Table 4: Final survival time regression model for first-time offending among young people who entered OOHC for the first time, POCLS (n=859)

Variable	Time ratio (95% CI)
Age at first entry	
10 years	1.000
11 years	0.775 [0.357, 1.681]
12 years	0.356 [0.170, 0.745]**
13 years	0.476 [0.224, 1.013]
14 years	0.354 [0.168, 0.747]**
15-17 years	0.832 [0.371, 1.866]
Reported issue prior to entry – neglect	
No	1.000
Yes	0.350 [0.206, 0.595]***
Reported issue prior to entry – CYP risk behaviour	
No	1.000
Yes	0.416 [0.280, 0.617]***
Predominant placement type	
Foster care	1.000
Kinship care	0.752 [0.451, 1.252]
Residential	0.258 [0.129, 0.516]***
Parents	0.580 [0.279, 1.204]
Other	0.489 [0.276, 0.868]*
Gender	
Female	1.000
Male	0.469 [0.316, 0.696]***
Aboriginality	
Aboriginal	1.000
Non-Aboriginal	2.012 [1.319, 3.071]**
Whether in OOHC during the follow up time	
Not in OOHC	1.000
In OOHC	3.895 [2.250, 6.745]***
Constant	32565.00 [12560.08, 84432.53]***
ln(Sigma)	-0.37 [-0.51, -0.24]***
Sigma	0.69 [0.60, 0.79]

Note: The estimate of the shape parameter, Sigma, is significantly different from 1 (p=0.000), suggesting the inclusion of the additional Weibull shape parameter is worthwhile.

* p<.05; ** p<.01; *** p<.001.

6 Discussion

Knowing when to act is important for effective policies. The present study was set up to investigate whether and when vulnerable young people committed their first offence after entering OOHC. It examined the correlations between a number of child and system characteristics and risk of first-time offending, with the aim to identify risk factors that provide information about the risk of offending after a young person enters OOHC. The study findings and their implications for policy are discussed in this section.

Given the study design and the availability of the data, this study did not attempt to directly examine the effect of intervention by OOHC. Nor did it attempt to utilise the POCLS survey data or to examine whether young people who had a history of offences before entry to OOHC would re-offend. It is shown that the proportion of young people aged 10 and above who first entered OOHC with a history of offences is 14.4%. Given the POCLS cohort is a typical entry cohort, one would expect to see a similar proportion from any other entry cohort although this figure should be treated as indicative only. Re-offending among young people with a history of offences prior to entry to OOHC is an important topic in itself and warrants a separate study.

Consistent with the literature, this study found that the three key demographic characteristics, age at entry, Aboriginal status and gender, are significant predictors of first-time offending. The findings show that young persons who first entered OOHC between 12 and 14 years are most vulnerable to first offences (compared with 10-year-olds at entry). For example, the effect of being fourteen years old (rather than 10) at first entry into OOHC is estimated to shorten the time to first offence by 64.6 per cent (taking into account other predictors in the model at the same time). This finding is consistent with what Baskin and Sommers (2011) found that young persons who were older at placement were more likely to offend and shows that this effect only applies to the ages of 12-14. Not surprisingly, males were at a higher risk of first offence and did so within a much shorter timeframe (i.e., close to half of that for females). Similar findings apply to Aboriginal young people. This should not be interpreted as Aboriginal young people were at a higher risk of first offence because they are Aboriginal. Rather, it might be a function of the socioeconomic disadvantages that these young people and their families have experienced before they entered care. Unfortunately, this is not captured in the POCLS data.

A history of neglect or risk behaviour is a significant predictor of first-time offending. Young people who had a history of neglect prior to entry to OOHC were at increased risk of first offence and did so within a much shorter timeframe than those who did not have a history of neglect. Young people who had a history of risk behaviours, such as drug and alcohol misuse or self-harm, before entry to OOHC also had a shorter time to first offence

than those who did not have a history of risk behaviour. More research is needed to understand how the neglectful experiences or their risk behaviours affect these young people and increase their risk of offending. Other forms of maltreatment, such as physical or sexual abuse, were not found to be associated with first-time offending.

Type of OOHC arrangement also predicts first-time offending. Young people who were predominantly placed in residential care or 'other' types of placement (e.g., supported accommodation) were at increased risk of first offence and did so within a shorter timeframe. For example, the time to first offence for a young person who was predominantly placed in residential care is estimated to be about a quarter (25.8%) that of a young person who was placed in foster care. The faster time to offending found for residential care and other (mainly supported accommodation) is of concern. Note that these are the effects of residential care/supported accommodation even after the demographic characteristics of the young persons and other factors are controlled in the model. Placing together a group of similarly vulnerable young people who may have pre-existing behaviour problems in a residential care unit increases the likelihood of offending behaviour (Victoria Legal Aid, 2018).

Multiple entries to OOHC were not found to be a significant predictor of first-time offending. While descriptive analysis shows that young persons who had at least one care episode had a higher proportion of first offences and a shorter time to first offence in comparison to those without multiple care episodes, significance testing and regression modelling ruled it out as a significant predictor. This is consistent with the finding by Ringland et al. (2015). Similar results are found for the final versus interim order status (i.e. not significant).

Time in OOHC was found to be a significant predictor of first-time offending after adjusting for the effects of other covariates in the model, including that of placement type. Compared with those who left early, young people who stayed in OOHC for longer are at a decreased risk of first offence (all else being equal). While this might sound potentially contradictory with the finding on residential care above, the model is showing that for two young persons who were predominantly placed in the same type of placement (such as in a residential care placement) while in care and everything else being equal, the young person who stayed in OOHC longer was at a decreased risk of first offence. This is not to suggest that we should keep young people in OOHC unnecessarily. It means premature restoration and/or early transitioning to independent living may expose them to additional pressures.

The above findings suggest that when a young person first enters OOHC, attention should be paid to the presenting risk factor(s), that is, aged between 12-14, male, Aboriginal, exposed to neglect and/or risk behaviour. These young people may have specific needs and need extra support and supervision. For young people who are placed in residential care and/or supported accommodation, better support and training

for staff in residential care units and more therapeutic environments may help manage challenging behaviours without the need to involve police and the criminal justice system (Vitoria Legal Aid, 2016). The NSW joint protocol to reduce the contact of young persons in residential care with the criminal justice system is a good example of that (FACS, 2016).

One important policy implication from the present study is the potential to develop risk assessment tools for juvenile involvement in crime for young people who enter OOHC based on the predictors of offending found in this research. Factors like age at entry, gender, Aboriginality and a history of neglect and risk behaviour by the young person before entry are important early warning signs of offending. The cost of obtaining this information is minimal as it is readily available from DCJ's administrative data system. The regression model we developed indicated a decelerated failure time, which means that the risk of first offence is higher in the early follow-up period after entry to OOHC. This suggests that the risk assessment of possible juvenile involvement in crime should form part of the overall assessment for young people aged 10 years or older to address their needs when they are being placed in OOHC and this should be completed as early as possible. Knowing their trauma history (i.e., neglect/ risk behaviour) may provide an opportunity for intervention and ensure referrals being made to relevant services. This assessment should be included in the case plans for these young people. If restoration occurs, adequate support and reviews should be put in place.

Finally, it should be noted that our study is constrained by the availability and quality of the administrative data. There is a lack of meaningful data on some important variables which might influence offending, such as levels of social skills or externalising behavioural issues of the young people, relationships between the young people and their carers and any service/support they received when/after they entered care. Although we have included many factors and established a clear temporal order of events in the survival time regression models, it is important to note that the study is observational. Any correlation found in the analysis should not be interpreted as a causal relationship. It indicates association only, not causality. For ease of modelling and interpretation, the present study did not include interaction terms (e.g., between Aboriginality and age, gender or placement type etc) in the model. Further research can explore if there are any interaction effects on offending (e.g., if the effect of placement type on offending is modified by Aboriginality or age etc). More research is needed to improve our understanding of the link between OOHC and juvenile offending and whether OOHC has beneficial or adverse effects on juvenile offending.

References

Australian Institute of Health and Welfare (AIHW) (2017). Young people in child protection and under youth justice supervision 2015-16. Data linkage series no. 23. Cat. no. CSI 25. Canberra: AIHW. Retrieved 20 August 2018 from https://www.aihw.gov.au/reports/youth-justice/young-people-in-youth-justice-supervision-2015-16/contents/table-of-contents

Baskin, D. & Sommers, I. (2011), Child maltreatment, placement strategies, and delinquency. American Journal of Criminal Justice, 36(2), 106-119.

Bromfield, L., Lamont, A., Parker, R. & Horsfall, B. (2010). Issues for the safety and well being of children in families with multiple and complex problems. National Child Protection Clearinghouse issues, No.33.

Bromfield, L., Higgins, D., Osborn, A., Panozzo, S. & Richardson, N. (2005). Out-Of-Home Care in Australia: Messages from Research, National Child Protection Clearinghouse, Australian Institute of Family Studies, Commonwealth of Australia.

Charles Sturt University News, 11 January 2017. What are our most vulnerable children turning to crime? Retrieved 1 Aug. 2018 from http://news.csu.edu.au/latest-news/society/why-are-our-most-vulnerable-children-turning-to-crime.

Keeny, D.T. and Nelson, P.K. (2008). Young offenders on Community Orders: Health, welfare and criminogenic needs. Sydney, Australia: Sydney University Press. Retrieved 24/08/2018 from http://www.justicehealth.nsw.gov.au/publications/ch1-3.pdf

Lind, B. (2011). Screening cautioned young people for further assessment and intervention. Crime and Justice Bulletin No. 149. Retrieved 24/08/2018 from http://www.bocsar.nsw.gov.au/Documents/CJB/cjb149.pdf

McFarlane, K. (2017). Care-criminalisation: The involvement of children in out-of-home care in New South Wales, Australian and New Zealand Journal of Criminology, vol. 51(3), https://doi.org/10.1177%2F0004865817723954.

Mersky, J.P. Topitzes, J., & Reynolds, A.J. (2012). Unsafe at any age linking childhood and adolescent maltreatment to delinquency and crime. Journal of Research in Crime and Delinquency, 49(2), 295-318.

NSW Ombudsman (2016). Joint Protocol to reduce the contact of young people in residential out-of-home-care with the criminal justice system. Retrieved 24/08/2018 from https://www.facs.nsw.gov.au/download?file=585726.

Queensland Family and Child Commission (2018). The criminalisation of children living in out-of-home care in Queensland. qfcc.qld.gov.au | talkingfamilies.qld.gov.au,

https://www.qfcc.qld.gov.au/sites/default/files/The%20criminalisation%20of%20children%20living%20in%20out%20of%20home%20care%20in%20Queensland.pdf.

Ringland, C., Weatherburn, D. and Poynton, S. (2015). Can child protection data improve the prediction of re-offending in young persons? Contemporary Issues in Crime and Justice, NSW Bureau of Crime Statistics and Research. Retrieved 1 Aug. 2018 from http://www.bocsar.nsw.gov.au/Documents/CJB/Report-2016-Can-child-protection-data-improve-the-prediction-of-reoffending-in-young-persons-cjb188.pdf.

Smith, N.E., & Jones, C. (2008). Monitoring trends in re-offending among adult and juvenile offenders given non-custodial sanctions. Crime and Justice Bulletin No. 110. Retrieved 24/08/2018 from http://www.bocsar.nsw.gov.au/Documents/CJB/cjb110.pdf

Stewart, A., Dennison, S. & Waterson, E. (2002). Pathways from Child Maltreatment to Juvenile Offending. Trends and Issues in Crime and Criminal Justice, no. 241. Australian Institute of Criminology, Canberra.

Victoria Legal Aid (2016), Care not Custody: A new approach to keep kids in residential care out of the criminal justice system. Retrieved 23 August 2018 from http://www.legalaid.vic.gov.au/about-us/research-and-analysis/care-not-custody-new-approach-to-keep-kids-in-residential-care-out-of-criminal-justice-system

Weatherburn, D., Cush, R. & Saunders, P. (2007). Screening juvenile offenders for further assessment and intervention. Crime and Justice Bulletin No. 109. NSW Bureau of Crime Statistics and Research, Sydney.

Widom, C. S. (1989). Child abuse, neglect, and violent criminal behavior, Criminology, vol. 27, no. 2, pp. 251-271.

Widom, C. S. (1991). The role of placement experiences in mediating the criminal consequences of early childhood victimization, American Journal of Orthopsychiat, vol. 61, no. 2, pp. 195-209.

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