

KEEP THEM SAFE OUTCOMES EVALUATION

FINAL REPORT – ANNEX B
NSW DEPARTMENT OF PREMIER AND CABINET

JUNE 2014

UNIT RECORD ANALYSIS



Authors

This report was written by the evaluation team led by the Social Policy Research Centre (SPRC) at the University of NSW. The evaluation team includes researchers at the Bankwest Curtin Economics Centre (BCEC) at Curtin University, the University of Melbourne (UoM) and the Parenting Research Centre (PRC). Chief investigators for the Outcomes Evaluation are:
kylie valentine (SPRC)
Ilan Katz (SPRC)
Rebecca Cassells (Curtin)
Aron Shlonsky (UoM)

Authors of this report include Christine Eastman and Aron Shlonsky.

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Ethics and police clearance

The Outcomes Evaluation has received human research ethics clearance from the University of New South Wales Ethics Committee. Researchers involved in this project have obtained appropriate clearances (police checks) which are required to work with sensitive datasets.

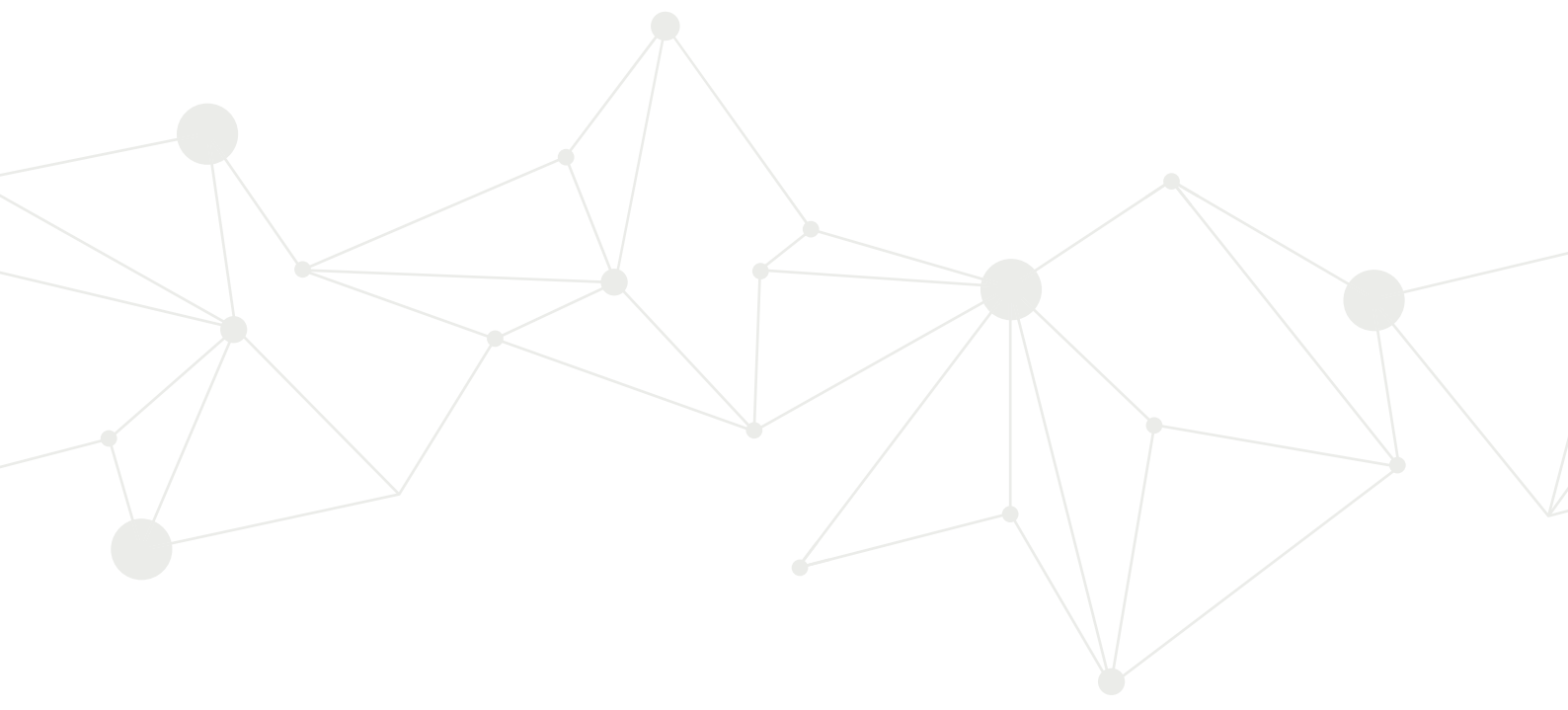


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Glossary

Aboriginal status	Children who are Aboriginal, Torres Strait Islander, Indigenous, Aboriginal/Torres Strait Islander in the KiDS database are recorded as being Aboriginal in this analysis. All other children including those for whom Aboriginal status is unknown are counted as being non-Aboriginal.
Child protection report	Report of suspected child maltreatment received by the Helpline.
CWU	Child Well-being Unit
CWU event	<p>For the purpose of this analysis, an event is a collection of appraisals over time that is related to a child reported to the CWU by a mandatory reporter from an agency belonging to the CWU.</p> <p>An event usually commences with a call in to the CWU which for our purposes we have called an appraisal (regardless of whether an assessment of need for the event was conducted during that call or subsequent to the call).</p> <p>We have taken this first appraisal date within the first event to be our initial event start date for our analysis group. Events and appraisals for which no child details have been recorded are not analysed here.</p>
CWU appraisal	<p>An assessment of need for an individual client after a referral from the Helpline or via a call directly from a mandated reporter from the agency belonging to the CWU.</p> <p>For the purpose of this analysis an appraisal is a record in which some activity has occurred. A series of appraisals comprise an event which primarily includes calls in to the CWU from mandatory reporters and associated calls made to and from the CWU to support the event.</p> <p>The first 'appraisal' within an event is usually a call in to the CWU and this is the trigger date for the event to start within our analysis.</p>
Child protection report streamed to CSC	A child protection report that meets the threshold for further child protection assessment.
CS	Community Services
CSC	Community Services Centre – responsible for investigating and responding to allegations of child maltreatment.
Known prior history	Marker for children who have had previous involvement with community services that resulted in a child protection report being streamed to a CSC for investigation.
Threshold change	KTS involved a system-wide threshold change for receiving a statutory child protection assessment that moved from 'risk of harm' (ROH) to 'risk of significant harm' (ROSH). We refer to pre-threshold change to mean the time prior to KTS commencing.

Censored	<p>Within this analysis an observation is censored if the event of interest has not occurred by the time the observation period finished. We have two observation periods – the first is for pre-KTS children in which observations are censored if the event of interest had not occurred prior to KTS commencing (i.e. 24 Jan 2010); the KTS cohort observations were censored if not observed by the administrative data file end date (30 Jun 2013). Additionally, observations were censored at their birthday if a child turned 16 at any time after their start date for initial investigation (reports analysis) or event (CWU events analysis).</p>
Age	Age at date of first high level report (i.e., first CWU event for CWU analysis and first child protection report streamed to CSC for reports analysis).
Investigation period	The period between the first CS report date and plan end or 60 days, whichever occurred first.
Censor date	For children reported prior to KTS, the censor date is 23 Jan 2010 (i.e. the day prior to KTS commencing). For children reported after KTS, the censor date is the 30 Jun 2013 (i.e. the last day of observation in the administrative data file).
OOHC episode	<p>An episode is a group of OOHC placements; for the purpose of this analysis, the episode start date is the date in which a child commences their first placement within an episode period. OOHC episodes are only included if the child in the cohort has an episode start date after their first report. Analyses of OOHC placement subsequent to the initial episode include any episodes that commenced following the initial investigation period, whether as part of a subsequent investigation or not. However, due to the complexity of matching reports to episodes, no consideration has been made for whether the child is in statutory care or non-statutory care, although episodes that indicate a 'placement' reason of restoration with parents have been excluded.</p>
Proxy ROSH	<p>A report received prior to KTS with a required response level of less than 24 hours or less than 72 hours, a required response level of less than 10 days with a high risk of harm rating, a report about children aged under 5 years with specified issues and those in OOHC at the time of the report. The specified issues were reported issues of 'carer drug or alcohol' or 'carer intellectual disability'; and a reported issue of 'neglect' or 'actual physical harm' or an OOHC history (in a small number of cases a child may have been placed in voluntary OOHC and therefore may not have received a report but may already be in OOHC).</p>
F2F	<p>Face-to-face assessment. In the case of the reports analysis, a child was counted as having a F2F if they either had a SAS2 (secondary assessment) start date in the analysis period, or during their initial report period they were placed in OOHC. The latter criteria was due to a number of children being placed in care without a recorded SAS2 start date. We considered the fact that they were placed in care to mean they had some type of face-to-face assessment.</p>

Abbreviations

CP	Child Protection
CPH	Cox Proportional Hazards
CS	Community Services
CSC	Community Services Centre
CWU	Child Wellbeing Unit
CYP	Children and young people
DET	Department of Education and Training
DV	Domestic violence
HR	Hazard Ratio
KiDS	Key Information Directory System (KiDS) – Community Services information management system
KTS	Keep Them Safe
NSW	New South Wales
OOHC	Out-of-home care
ROH	Risk of Harm
ROSH	Risk of Significant Harm

1 Executive summary



The NSW Government has made a substantial investment towards protecting children from harm through its \$750 million Keep Them Safe child protection initiative. Keep Them Safe (hereafter KTS) was introduced in 2009 as the NSW government's response to the Special Commission of Inquiry into Child Protection Services in NSW undertaken by Justice Wood (Wood Inquiry). A detailed description of KTS is provided in Section 2.1 of the Outcomes Evaluation Final Report.

This is one of eleven evaluation reports that make up the KTS outcomes evaluation. The evaluation involved nine separate yet complimentary methodologies that were designed to address eight evaluation questions and to analyse the various sources of data available to the evaluation team. A detailed description of the evaluation is provided in Outcomes Evaluation Final Report.

Keep Them Safe Outcomes Evaluation: Final report

Annex A. KTS Indicators

Annex B. Unit record Analysis

Annex C. Economic Evaluation

Annex D. Professional Perspectives

Annex E. Spatial Analysis Report

Annex F. Synthesis of Evaluations

Annex G. Report on Clients' Interviews

Annex H. Data Development

Annex I. Other NSW Strategies and Initiatives

Annex J. Literature Review

The KTS Indicators examined the numbers of children at different points in the child protection system. The unit record analysis supplements this analysis by tracking the pathways of individual children

through the system and therefore examining the factors which lead to children requiring higher levels of involvement with the system.

The analysis combined administrative data from three separate sources to model the pathways of children through the child protection system, from initial reports to the Helpline to placement in OOHC, obtaining measures of the independent effect of KTS while accounting for competing explanatory factors and the passage of time.

Our analysis focussed on two questions:

1. What are the trajectories of children at risk of harm but not at risk of significant harm (ROSH)?

If KTS was successful, we expected that among children screened out of CP (i.e. under the ROSH threshold) there should be relatively low levels of observed recurrence (e.g. subsequent CWU events or subsequent ROSH reports).

The two-part analysis begins with an evaluation of the extent to which children who are not at ROSH are diverted from the child protection system in the KTS period. This was done by examining the extent to which referrals of children below the significant harm threshold (non-ROSH) to the Child Wellbeing Unit (CWU) were subsequently re-referred to CWU or were reported to the Helpline, assessed as being at ROSH and streamed to Community Service Centres (CSC) for further investigation.

In order to evaluate the first question, children's first observed CWU contact period (called event in this report and in the CWU data) was selected and, moving forward in time, their pathways examined. These pathways were examined with respect to their basic demographic characteristics (age, Aboriginal status) and two types of recurrence: a new CWU event and a new Helpline report that exceeded the threshold for ROSH. Note that these are pathways of children seen for the first time at the CWU. Given that children seen at the CWU could have a child protection history prior to their first CWU event, prior history was also accounted for in analysis of CWU children.

We found:

- The majority of children seen at the CWU for the first time (74%) were not observed to have either a new CWU event or a ROSH report following their first CWU event by the end of the follow up period.
- Children reported to the CWU for the first time may have had a prior history in the child protection system. We found this was a major predictive factor for both subsequent CWU events (HR (Hazard Ratio) = 1.35) and subsequent ROSH reports (HR 3.71).
- Although there is an overall low chance of receiving a new CWU entry or ROSH report, following the initial CWU event, we found that recurrence of both ROSH report and new CWU event was most likely to occur within the first six months of the original event (15.1% of children received a new ROSH report, and 14.8% commenced a new CWU event within six months of their first CWU event).

- Older children were less likely than younger children to have a subsequent ROSH report following their first CWU event, even after accounting for observation time (HR = 0.9 for each year of age)
- Aboriginal children were much more likely than non-Aboriginal children to experience a new CWU event (HR = 1.73) and were also more likely to be reported at ROSH (HR = 1.34) following their first investigation at CWU.

2. What are the differences in the trajectories of children who are at ROSH between the current cohort of children in NSW and the cohort immediately predating KTS?

If KTS was successful, we expected that the rates of re-reporting amongst children screened in at ROSH would decrease following KTS, and that the rates of OOHC entry would also decrease.

In order to answer the second question, a comparison was made between the trajectories of similar groups of children who entered the child protection system before the threshold change and after the threshold change. Two groups of children were identified: one receiving their first a first report of harm that met the ROSH threshold (proxy-ROSH) prior to KTS; and one receiving their first ROSH report after the commencement of KTS. The two groups were mutually exclusive. That is, children could only be observed once – the first time they met the criteria for proxy-ROSH or ROSH. This was done to obtain a comparison condition of reported children who had not yet experienced KTS. In order to further obtain an independent measure of the effect of KTS, demographic, report and investigation characteristics were controlled for in the analysis. Both groups were followed after their initial investigation to observe whether they experienced a subsequent ROSH report, face-to-face investigation, or OOHC entry.

- Whilst considering follow up time, and holding a range of demographic and initial investigation characteristics statistically constant, KTS was associated with a decrease in the chance of being re-reported at ROSH (HR = 0.81), an overall increase in the likelihood of receiving a face-to-face investigation following a child's first investigation (HR = 1.15), and an overall decrease in the chance of being placed in OOHC (HR = 0.71). However, the likelihood of experiencing a new ROSH report or placement in OOHC substantially increased when children actually did receive a face-to-face visit during the course of their initial investigation.
- Aboriginal children, while still more likely to experience an OOHC placement than non-Aboriginal children, had a lower likelihood of being placed in care after the implementation of KTS.
- KTS was associated with an increase in the proportion of reports with sexual abuse as a primary reported issue. However, children with such a report were less likely to have a subsequent ROSH report (HR = 0.85) and were less likely to be placed in OOHC (HR = 0.58) than those who did not have an indication of sexual abuse as part of their initial investigation.

Conclusion

KTS appears to be marginally effective across a range of important child protection indicators for children newly involved with the child protection system. Both CWU events and ROSH reports were largely one-time incidents. Recurrences both within CWU and at ROSH are strongly influenced by prior history of child protection involvement, indicating that children referred to CWU without such histories may be receiving the types of services they need to stay out of the child protection system. Alternatively, children without recurrences may have been mistakenly referred in the first instance. For children reported at ROSH, KTS is associated with increases in the proportion of children who received a face-to-face visit during their initial investigation. As well, KTS is associated with decreases in report recurrence and placement into OOHC.

This analysis has revealed that children with prior histories likely have a different path through the system than children encountering the child protection system for the first time. Many analyses look backward and attempt to extrapolate what causes multiple interactions with the system. Looking forward with strong analytical techniques likely provides a better accounting of the causes and consequences of system involvement.

Age is a predominant factor in most of these analyses. While KTS has a greater focus on younger children, they remain more vulnerable to a host of poor child protection outcomes. Continued focus on this group is imperative.

Aboriginal children, even those facing their first encounter with the child protection system, do not fare as well as non-Aboriginal children, and this is true across almost all outcomes. While the provision of KTS appears to diminish poor outcomes for Aboriginal and non-Aboriginal children, and even diminishes the likelihood of placement into OOHC to a greater extent among Aboriginal children, it is inadequate for ameliorating the over-representation of Aboriginal children in the face of pervasive structural deficits that child protection is ill-equipped to deal with.

Extending past this evaluation of KTS and moving into solidifying and building upon some of the gains made in recent years, greater attention could be paid to whether services are effective for the specific problems, or sets of problems, that children and families experience, particularly for children and families coming into contact with the child protection system for the first time. In addition, the data contained in the unit record analysis, while powerful, does not contain any information on the types of services received or on the actual well-being of children. Enhancement to the data infrastructure that included such information, or that is linked to such data, could be used to great effect in continuing quality improvement efforts. The next step in the evolution of NSW child protection might also involve the increased use of reliable and valid tools that more accurately obtain risk of recurrence and, more importantly, screen for specific problems. Additionally, assessment tools that can accurately measure children's functioning, over time, are sorely needed to augment the broader trends described in this analysis. Combining these other sources of information with existing administrative data can yield increasingly sophisticated evaluations and real-time adjustments to the service mix. Such strategies may help build upon the initial positive findings detailed in this evaluation.

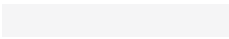
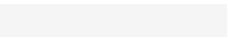
While there were some deviations from the findings in other components of the KTS evaluation, these were minimal and easily explained by the sample and methods used. There appear to be no large and unexplained departures, which gives us some level of confidence in both sets of results.

2 Introduction and rationale



The unit record analysis was designed to augment the larger KTS quantitative evaluation, which relies mostly on aggregate measures collected either at a single point in time or over a series of time points. While aggregate measures of outcomes are useful, they are unable to answer all questions. In particular, they are not generally able to detail the movement of children through the child protection system, nor are they able to adequately account for the repeated exposure of individual children to the child protection system at multiple points in time. This has implications for the degree to which valid claims of effectiveness can be made using such data and, to the greatest extent possible, the unit record data was used to examine whether observed outcomes can be attributed to KTS.

Unit record data was used to model the pathways of children through the child protection system from Helpline straight through to placement in OOHC. This was done in two stages: 1) Reports of concern to CWU including a description of the children and their recurrence outcomes (new CWU report and subsequent ROSH report); and 2) ROSH reports streamed to the CSC including a description of children and child protection outcomes such as the likelihood of face-to-face visits during investigation, likelihood of recurrence, and likelihood of placement into OOHC. For the second stage, two similar groups of children were selected differing only by their exposure to KTS in order to test the effect of KTS on these key child protection outcomes.



Analysis of Child Wellbeing Unit data



This section of the Unit Record Analysis will focus on contacts related to reports of concern about children that were initially or subsequently streamed to the CWU. Data were received and, after consultation with Community Services (CS) and CWU representatives, were structured for analytic purposes that fit with the evaluation of KTS.

The purpose of this analysis is to provide background information for the broader KTS evaluation about the background of children who were assessed by the CWUs due to a child maltreatment or risk-related concern and to ascertain whether, and the extent to which, involvement with the CWU prevents the escalation of child maltreatment to statutory levels.

The purpose of the analysis of CWU events is to:

1. Describe the demographic characteristics of children and young people referred to CWU.
2. Assess the extent to which children return to the CWU with a new concern after an initial event.
3. Assess the extent to which the children who had a CWU event have a subsequent allegation of child maltreatment that is serious enough to warrant further investigation by a CSC.
4. Ascertain the extent to which age, Aboriginal status, and known prior history with CS are related to a subsequent CWU event.
5. Ascertain the extent to which age, Aboriginal status, and known prior history with CS are related to a subsequent child protection report streamed to CSC.

Child Well-being Units

CWUs¹ were established in January 2010 in response to the Special Commission of Inquiry into Child Protection Services in NSW (the Wood Inquiry). CWUs operate in the government agencies that account for the majority of reports to the Community Services Helpline: The NSW Police Force, Department of Education and Communities, NSW Health (including Local Health Districts, affiliated health services, and certain general practitioners), and the Department of Family and Community Services (Housing; and Ageing, Disability and Home Care).

CWUs have a number of functions, including:

1. Help agency mandatory reporters identify the level of suspected risk to a child or young person, including whether matters require a report to the Helpline;
2. Provide advice to agency mandatory reporters about possible service responses by the agency or other services to assist children, young people, and families, and in some cases initiate direct referrals
3. Drive better alignment and coordination of agency service systems, to enable better responses to vulnerable children, young people, and families

Methodology

A longitudinal child dataset was constructed to enable an innovative and powerful approach to better understanding predictors of child concern reports, recurrences and pathways from CWUs to the CSC.

The CWU analysis examines the characteristics of children entering CWU for the first time, and subsequent events following this first entry. It is not an analysis of entry to the Child Protection system which means that it is possible a child entering the CWU for the first time may have been reported prior to the CWU. Because of this, analysis of 'prior child protection history' is included in this section. The second part of this report deals specifically with first entries into the Child Protection system where we only observe children when they are first reported.

Detailed technical information about the data cleaning process, analytical steps and modelling assumptions are outlined in Appendix A.

1 Source: Keep Them Safe Factsheet No. 4a.

The analysis begins with basic demographic and count information then proceeds to predictive modelling of two outcomes:

1. A new CWU event that occurred after an initial CWU event;
2. A new report of child maltreatment that is considered serious enough to be streamed to one of the CSCs.

Data are presented at the child level and are 'unduplicated' for all NSW children referred for the first time to a CWU between 2009/2010-2012/2013. That is, children are only represented once in any individual analysis. Data were analysed using the statistical analysis software SAS 9.4.

Throughout the analysis, three main characteristics are of central focus: age, Aboriginality, and known prior known history with Community Services. Age was chosen due to its importance within virtually all child protection and welfare analyses as well as KTS's objective to intervene early in the lives of children. Aboriginal children are also a major focus of KTS and the overall KTS evaluation and are known to be over-represented within the child protection system. Finally, the presence of children who have multiple involvements with the statutory child protection system indicates that known prior history is likely to be one of the stronger predictors of future interaction with child protection services. Failing to control for the past can mask the experience of people interacting with services for the first time and may lead to highly erroneous conclusions.

Data sources

Wellnet – a unit record extract was provided to the evaluation team that comprised individual records of CWU events and appraisals in which child details were recorded.

KiDS – the unit record extract utilised for this analysis was comprised of two primary data sources:

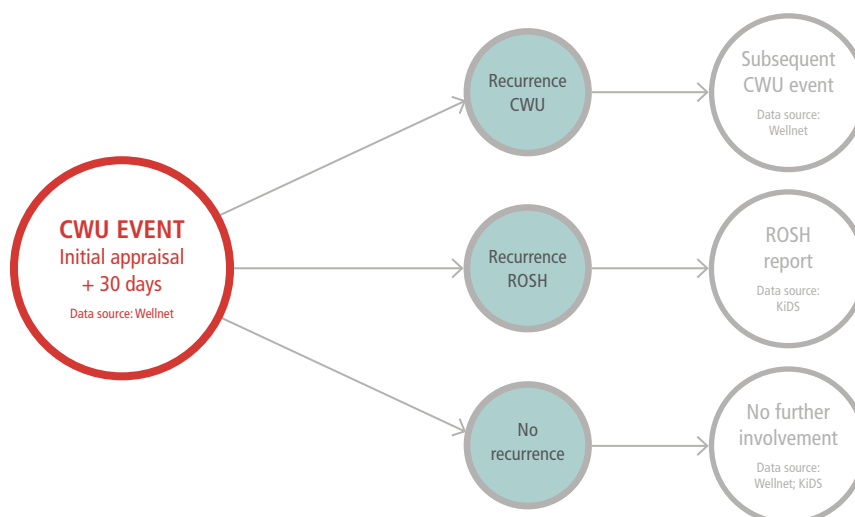
- 1) a combined year-on-year file of all child protection reports received by the CS Helpline containing associated data related to child information and casework dates; and 2) a file that contained placement and demographic information on all OOHC placement from 1999-2013.

Key variable construct

1. First CWU event: The first episode of CWU services observed for each child (event start date is the date of the first appraisal within the episode).
2. Age: child age at the initial event (derived from DOB).
3. Aboriginal status: File indicates in at least one place that a child is Aboriginal. All others designated as non-Aboriginal.
4. Known prior history: Records back to 1999 observed for a prior child protection report streamed into CSC for further assessment. Given this cohort at entering the CWU for the first time, it is feasible that children may have received a child protection report prior to their first CWU event.
5. Recurrence (see illustration on next page)
 - a. New CWU event: a new CWU event that occurred subsequent to the end of the initial CWU event period.
 - b. Subsequent allegation of child maltreatment that is streamed in to CSC for further assessment (may or may not receive a subsequent assessment).

Major assumptions/limitations

1. CWU event duration is often unclear due to overlapping events, making it difficult to know whether a subsequent event belonged to the current concern or to a subsequent CWU event for a new or re-emerging concern. We imposed a time limit on the duration of the initial episode: 30 days from the start of the initial event.
2. Not all CWUs operate in all agencies that have mandated reporters.
3. Known prior history is limited to the history for individual children. Siblings and other family members may have a history but this is not accounted for in the CWU analysis.



Statistical methods

Statistical methods were limited to recurrence data and were not applied to demographic and descriptive analyses. Event history techniques were used to account for differential exposure time to the possibility of having a subsequent CWU episode or suspected child protection report streamed to CSC. These methods allow us to model not only whether an event occurred, but to model the length of time it took for such events to occur.

The statistical analysis begins with a series of two-dimensional (category X time) life tables modelling time to recurrence by age, Aboriginality, and prior CS history. These same factors are then entered simultaneously into Cox Proportional Hazards (CPH) regressions (one for each recurrence type: subsequent CWU episode and subsequent suspected maltreatment report streamed to CSC), allowing us to model the independent effect of each of these three constructs on the likelihood of recurrence.

Results – CWU event analysis



Between 24 January 2010 and 30 June 2013, 124,885 children and young people commenced an initial event through the CWUs. The vast majority of these children were non-Aboriginal (83 per cent), though the number of Aboriginal children assessed far exceeds their relative number in the NSW population of children. That is, they are substantially over-represented with respect to their numbers in the overall population.

Due to the focus within KTS on very young children and our ability to conduct more fine-grained analysis on some children characteristics, we stratified age more finely for 0-5 year olds than was done for the *Performance Indicator* section of the report. The largest single grouping of children were the very youngest (younger than six), who represented more than 37 per cent of the Wellnet population (Table 1). A further 35 per cent of the sample of initial children with first CWU events were aged 6-12 years, and their involvement is likely to be related to contact with the education system. A substantial proportion of the sample was older (13-17 years), and their involvement is likely to be related to behavioural and other issues referred by the police.

Table 1 Children with a first CWU episode by age and Aboriginal status		
	N	%
Age		
< 2	19,395	15.5
2 to 3	13,568	10.9
4 to 5	13,312	10.7
6 to 12	43,863	35.1
13 to 17	32,925	26.3
Unknown/Invalid	1,822	1.5
Total	124,885	100.0
Aboriginal status		
Aboriginal	21,077	16.9
Non-Aboriginal	103,808	83.1
Total	124,885	100.0

Source: Wellnet

Note: Refer to methods for details of criteria for inclusion

When looking over time, a higher proportion of children aged younger than 2 years old were reported to the CWU for the first time, reflecting an almost 50 per cent increase between 2009/10 and 2012/13 for Aboriginal children (Table 2). The increase was also observed (28 per cent) but somewhat lower for young (< 2) non-Aboriginal children during the same time period.

There was a corresponding but small decrease in first-time CWU events for older children in the 6-12 and 13-17 years old age groupings while the 2-3 and 4-5 year old groupings remained about the same for both Aboriginal and non-Aboriginal children.

Table 2 Children with first CWU event by age and Aboriginal status

Age	Aboriginal				Non-Aboriginal			
	09/10	10/11	11/12	12/13	09/10	10/11	11/12	12/13
	%	%	%	%	%	%	%	%
< 2	16.6	17.1	21.8	24.9	12.8	13.2%	15.7	16.3
2 to 3	12.0	12.0	13.0	10.3	10.1	10.9%	10.9	10.5
4 to 5	10.6	11.4	11.8	10.2	10.3	10.6%	10.9	10.4
6 to 12	37.2	34.7	31.6	32.6	37.8	35.5%	34.7	34.6
13 to 17	22.8	23.5	19.9	20.3	28.0	28.7	26.1	26.4

Source: Wellnet

Note: Refer to methods for details of criteria for inclusion

Children and Young People (CYP) known to CS prior to CWU event

Recall that as explained earlier, a child can be known to the CWU for the first time but have a prior CS history i.e. they may have been reported prior to their first entry to CWU. This section of the analysis deals with first entries to CWU whereas the later analysis deals with first entry to the Child Protection system.

A majority of children were not known to CS prior to their first CWU event (59 per cent), but there were substantial differences based on age and known Aboriginal status – a higher percentage of Aboriginal children were known to CS (49 per cent) compared to non-Aboriginal children (39 per cent). Figure 1 shows that the chance of being known to CS on entry to CWU increases from birth until age 5 and then drops off, with 61 per cent of children aged 4 to 5 known prior to entry into CWU.

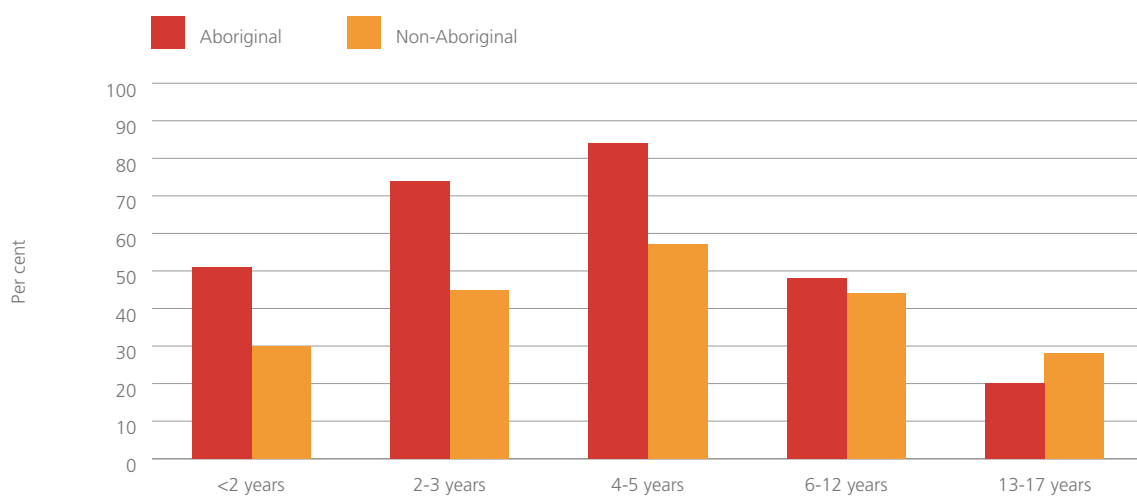
This is somewhat counterintuitive, but may be a reflection of a number of possibilities: 1) older children with long CS histories are more likely to be reported to CS instead of the CWU; 2) referrals to CWU for 13-17 year olds involve incidents that are largely not related to a maltreatment concern (i.e., related to risky behaviour); 3) older children are included in referrals of their younger siblings; 4) there is a pool of children who would have been picked up earlier had there been a greater focus (as there is now) on preventive services for young children.

The largest differences between Aboriginal and non-Aboriginal children occur in the younger age groups, with half of the Aboriginal children entering CWU being known to CS compared to 30 per cent of non-Aboriginal children, however older Aboriginal young people are less likely to be known to CS prior to their first CWU event compared to non-Aboriginal children.

This can be seen as both positive and negative. On the positive end, KTS and the CWU appear to be receiving a number of cases that, without the presence of the CWU, might have been serviced in a less preventive and more statutory manner. That is, the mandatory reporter guide may be sending them

to the correct location for services that better match need. In this sense, KTS may be functioning as intended. On the less positive side, the fact that the vast majority of Aboriginal children aged 3-5 have been seen before indicates a massive risk pool that, without effective services, is likely to feed into the statutory system over time.

Figure 1 Percentage of children with at least one prior streamed report amongst children at the time of their first CWU event



Source: Wellnet

Note: Refer to methods for details of criteria for inclusion

Subsequent CWU Event

Over time, children can have more than one concern leading to the commencement of a CWU event. While these are considered recurrences, the reason for a new CWU event commencing may be considered positive (i.e., the family may be getting help for a different problem or may be getting more help for the same problem) or negative (i.e., the family was reported for a problem that was not adequately addressed the first time). Of the 124,885 children with an initial event at a CWU between 2009/10 and 2012/13, 34,748 (28 per cent) experienced a subsequent CWU event within that time frame (Table 3). Children experiencing a new event were slightly less likely to have a prior CS history (48 per cent) than children with a known history (52 per cent). Children aged between 2 and 12 with a second CWU event were more likely to be known; 78 per cent of children aged 4 and 5 with a second CWU event were known to CS prior to their first CWU event.

Table 3 Children with first CWU event who have a subsequent CWU event by prior CS history, age and Aboriginal status

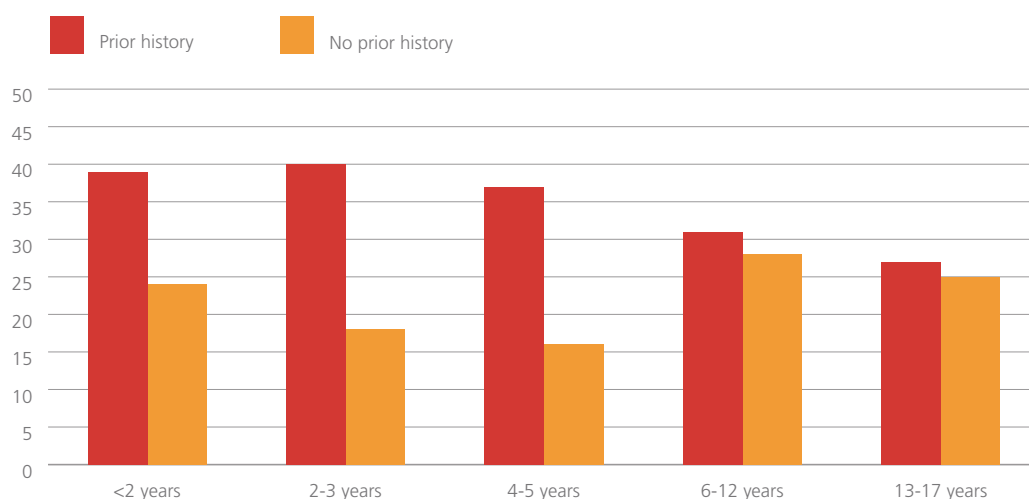
	Prior CS history, with subsequent event		No prior CS history, with subsequent event		Total with second CWU event	
	N	% within prior	N	% within no prior	N	% all
Total	16,862	33.4	17,886	24.1	34,748	27.8
Age						
< 2	2,605	38.7	3,095	24.4	5,700	29.4
2 to 3	2,719	39.5	1,188	17.8	3,907	28.8
4 to 5	3,003	36.8	841	16.3	3,844	28.9
6 to 12	6,138	31.4	6,731	27.7	12,869	29.3
13 to 17	2,395	26.6	6,022	25.2	8,417	25.6
Aboriginal status						
Aboriginal	4,411	42.6	4,196	39.1	8,607	40.8
Non-Aboriginal	12,451	31.0	13,690	21.5	26,141	25.2

Source: Wellnet

Note: Refer to methods for details of criteria for inclusion

As Figure 2 clearly shows, the association between prior CS history and age is almost exclusively reflected in younger children ages 0-5. That is, younger children with a subsequent CWU event are more likely to have a CS history than their older counterparts. In addition, a high proportion of re-reports involve school-aged and teen children (60%), possibly reflecting the involvement of DET with the CWU.

Figure 2 Percentage of children with prior CS history and no prior CS history that had a subsequent CWU event



Re-entry rates – time to new CWU event

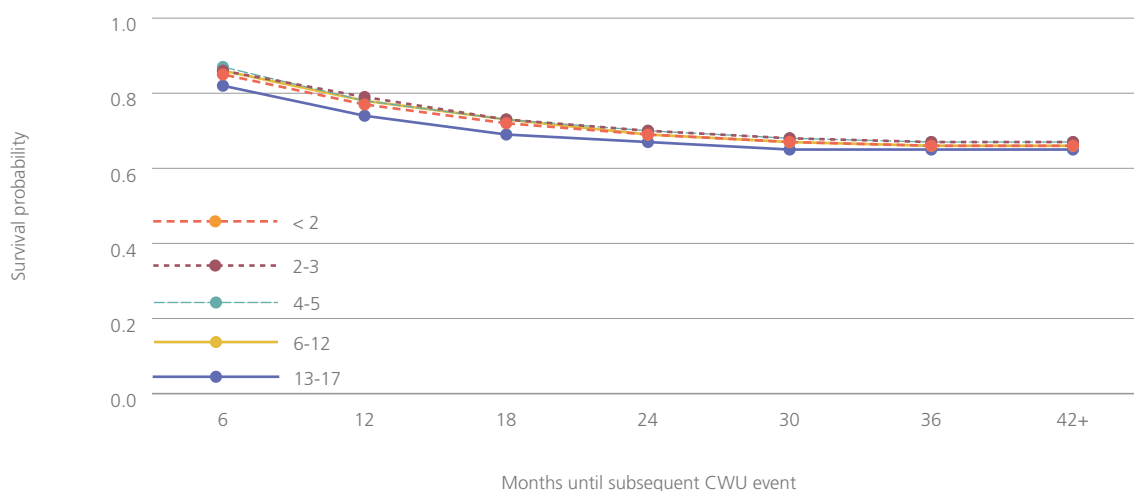
One of the most important considerations when examining longitudinal data is the extent to which time influences the observations of events. For instance, if it is observed that children in early 2010 have much higher rates of subsequent events than children with initial events commencing at the end of 2012, this may be a function of the maturation of KTS over time. In addition, the rate at which children have a subsequent event may vary as a function of time (i.e., if children are going to have a subsequent event, this might be more likely to occur within the first year after an initial event). In both cases, the amount of time each child is observed can also influence the observed rate, and must be accounted for. That is, even if the rate between years remains constant in reality, it will look like the rate is decreasing in later years because children have not had time to ‘experience’ the event. The unit record data allow us to look at both trends by modelling the effect of observation time without constraining length of follow-up to be the same for each child.

This analysis describes how recurrence of CWU event unfolds by detailing the number of eligible children that ‘survive’ or make it to the next time period without commencing a subsequent CWU event.

Overall, recurrence occurred more quickly in the months immediately following an initial event. That is, if a new event was going to commence, it was far more likely to happen within the first 6 months than in later months, and the rate of new events continued to diminish over time.

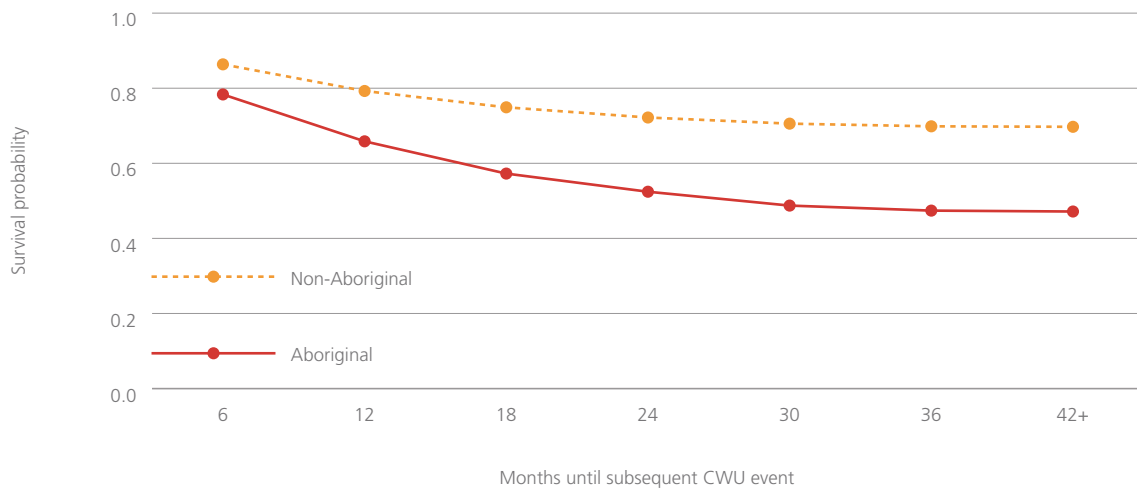
As Figure 3 indicates, age at initial CWU event did not appear to make much discernable difference with respect to both whether and when a new CWU event was likely to occur (i.e., the rate of recurrence was similar over time for all age groups).

Figure 3 Probability of commencing a subsequent CWU event following initial CWU event by age, by months since the end of the first CWU event



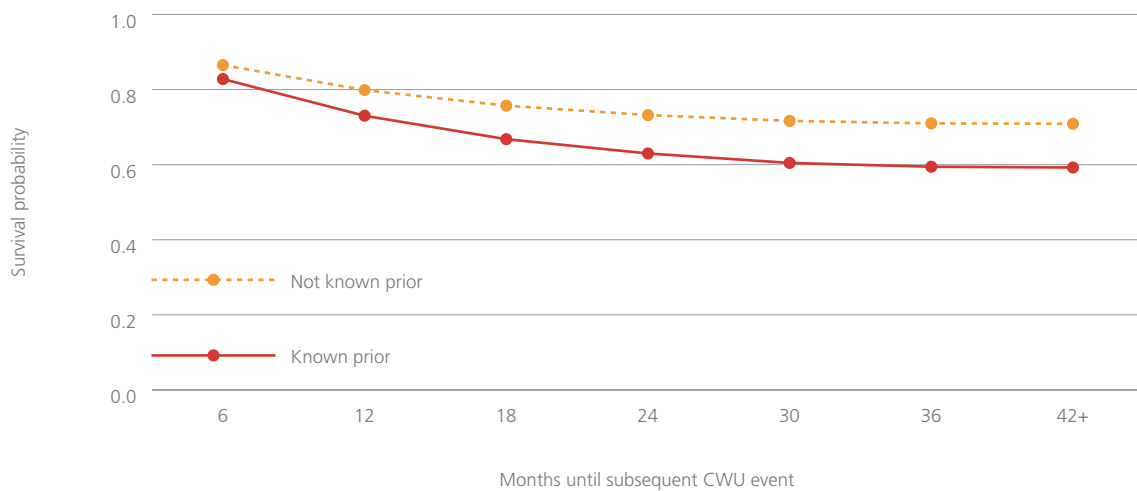
Aboriginal children were more likely to commence a subsequent event than non-Aboriginal children, and this difference tended to increase over time (Figure 4 – lower y-axis scores for survival probability reflects a higher rate of recurrence). At six months, 78.3 per cent of Aboriginal children and 86.4 per cent of non-Aboriginal children had not experienced a subsequent CWU event. Every 6 month period of follow up showed more children from each group experiencing their first subsequent CWU event. By 42 months, less than half (47.2 per cent) of Aboriginal children had not experienced a new event compared to about 70 percent (69.7 per cent) of non-Aboriginal children.

Figure 4 Probability of commencing a subsequent CWU event following initial CWU event, Aboriginal and non-Aboriginal children, by months since the end of the first CWU event



Similarly, a prior history of a previous report streamed to CSC made a difference in both the likelihood of having a new event commence and the rate at which new events commenced. Children who were known prior were more likely to commence a new event and this difference tended to increase over time.

Figure 5 Probability commencing a subsequent CWU event following initial CWU event, children known and not known to CS prior to initial CWU event by months since the end of the first CWU event



Regression results

In order to model the independent effect of age, Aboriginal status and prior CS history whilst simultaneously accounting for observation time, we ran a simple Cox Proportional Hazards regression. This technique provides us with an estimate of how important each of these factors are, over time, for explaining the likelihood of new CWU event. The effect is most easily shown in the Hazard Ratio (HR), a number that is bounded by zero on the lower end and infinity on the upper. Scores between 0 and 1 indicate that the presence of the factor is associated with a lower likelihood that a new event will occur. Scores closer to zero indicate a lower likelihood than scores closer to one. Scores above one indicate that the presence of the factor is associated with a higher likelihood that the event will occur. The higher the score, the more likely the event will occur; a score close to one means that there is likely to be little or no effect.

Hazard Ratio (HR)	
∞	Will always happen
2	More likely
1	Equally likely
0.5	Less likely
0	Will never happen

A key assumption of Cox Proportional Hazards regression is that the hazard functions are proportional over time. We tested these assumptions through descriptive analysis and analysis of martingale residuals for age, both of which indicated that there were very minor violations of the proportional hazards which means the analysis should be interpreted with caution. However due to the large sample and strong results for most covariates we expect that the overall results would not change substantially if steps were taken to accommodate these violations. Moreover, such changes would make an already complex interpretation of findings much more difficult to convey.

These models include the following variables.

1. Age: child age at the initial event (derived from DOB).
2. Aboriginal status: File indicates in at least one place that a child is Aboriginal. All others designated as non-Aboriginal.
3. Known prior history: Records back to 1999 observed for a prior child protection report streamed into CSC for further assessment (did not necessarily receive the assessment).

4. Recurrence

- a. New CWU event: a new CWU event that occurred subsequent to the end of the initial CWU event period.
- b. Subsequent allegation of child maltreatment that is streamed in to CSC for further assessment (may or may not receive a subsequent assessment).

Given the large sample size, it is not surprising that all three factors were significantly related to subsequent events. However, there were substantial differences in the effects of each factor when considered together. When accounting for Aboriginal status and prior history, age was only weakly associated with the hazard of experiencing a new event. For every year increase in age children had a slightly greater hazard (about one per cent; $HR=1.01$) of commencing a new event. Even when children were considerably older, their likelihood of having a new CWU event was only slightly higher than very young children (about 12% higher for every 10 year increase). Children with a prior CS history had a 35 per cent greater hazard ($HR=1.35$) than those without a prior CS history of experiencing a new event. The strongest single predictor of a new CWU event was Aboriginal status. Aboriginal children had a 73 per cent higher hazard ($HR=1.73$) of experiencing a new event than non-Aboriginal children. While all of these individual estimates were significant, they were not all that substantial, and this is especially true for age at the start of the initial CWU event.

Table 4 Cox Proportional Hazards regression: Time from end of initial CWU event to subsequent CWU event

	Estimate	SE	Wald	p-value	Hazard Ratio	Lower 95% CI	Upper 95% CI
Age in years at entry	0.011	0.001	85.13	<.001	1.01	1.01	1.01
Aboriginal	0.546	0.013	1837.15	<.001	1.73	1.68	1.77
Prior history	0.297	0.011	710.14	<.001	1.35	1.32	1.38

Source: Wellnet

Note: Refer to methods for details of criteria for inclusion

Subsequent report to CS Helpline streamed to CSC

Children can have an initial CWU event that is then followed by a later report that crosses the threshold into ROSH and the case is streamed to the CSC for further investigation. This section of the evaluation takes advantage of unit record-level data that spans CWU and child protection data that are linked by a common child-level identifier. We examined the number of children that were reported at ROSH following their first CWU event, regardless of whether they were reported or not during their first event, in order to determine the influence of the first event on subsequent child protection notifications.

Overall, the majority of children (75 per cent) who experienced an initial CWU event were not reported following the first event, regardless of whether they were known to CS prior to CWU on starting their first CWU event, but children with a prior history were more likely to be reported (Table 5).

About 12 per cent of children who had no prior child protection history prior to their first event at the CWU were reported at ROSH following their initial CWU event, whereas the remaining 88 per cent did not experience a subsequent ROSH report following their initial CWU event. Within the group that had previously been reported to CS prior to their first CWU event, 43 per cent were reported after the event and 57 per cent had not been reported at ROSH by the time the observation period ended.

Within the group of children not known to CS prior to their first report, children younger than two were most likely to receive a ROSH report after their first CWU event. The likelihood then dropped with age.

Within the group of children that had a prior child protection history before their first CWU event, we see that the re-notification rate is firstly higher than those not known to CS prior to CWU, but we also see a similar pattern of decreasing likelihood of being reported at ROSH with age.

This indicates that age has a strong association with reporting, however prior CS history has a stronger effect in terms of the likelihood of being reported at ROSH after CWU involvement.

Amongst Aboriginal children, we see an increased rate of reporting after the first CWU event compared to non-Aboriginal children, and again children who were known to CS prior to their first CWU event were much more likely to receive a ROSH report following CWU compared to those without a child protection history.

Table 5 Children with first CWU event and subsequent report streamed to CSC by age and Aboriginal status						
	Prior CS history, with subsequent ROSH		No Prior CS history, with subsequent ROSH		Total with subsequent ROSH report	
	N	% within prior	N	% within no prior	N	% all
All children	21,005	42.6	8,639	12.1	29,644	24.6
Age						
< 2	3,673	55.7	3,459	28.0	7,132	37.6
2 to 3	3,483	51.2	1,184	18.1	4,667	35.0
4 to 5	3,793	47.0	836	16.7	4,629	35.4
6 to 12	7,642	40.0	2,073	8.7	9,715	22.6
13 to 17	2,413	27.6	1,077	4.6	3,490	10.9
Aboriginal status						
Aboriginal	5,633	55.6	1,474	14.4	7,107	34.9
Non-Aboriginal	15,372	39.2	7,165	11.8	22,537	22.5

Source: Wellnet and KiDS

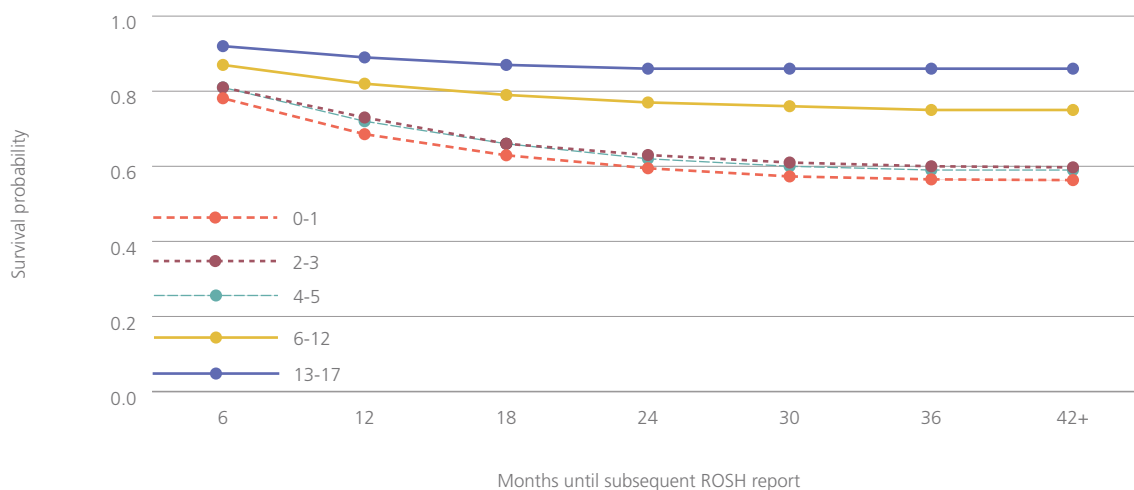
Note: Refer to methods for details of criteria for inclusion

Re-report rates – time to subsequent ROSH report

The following analysis describes the length of time it takes for children to experience a first ROSH report subsequent to their first CWU event. Children age out of the system and they are thus unable to experience any other outcome within the system. In order to make sure that outcomes are measured only for those children who can experience them, only children under 16 years of age were included in this stage of the analysis.

Overall, the rate of subsequent ROSH reports occurred far more quickly in the six months immediately following an initial CWU event. Roughly half of all ROSH reports occurring after 30 days post initial CWU event occurred within the first six months.

Age at initial CWU event was a factor in whether children were subsequently reported at ROSH (Figure 6). Younger children were more likely to have a subsequent report, and these differences increased over time for some age groups. By 42 months, 44 per cent of children aged younger than two were subsequently reported at ROSH compared to 14 per cent of children aged 13-15 at first CWU event. Prior report being streamed to a CSC for investigation was a large factor in whether children were reported for subsequent ROSH, and the differences between those with a history and those without increased over time. By 42 months, 37 per cent of children with a known prior streamed report had a subsequent ROSH report after their first CWU event while 19 per cent of those without such a history experienced a ROSH report.

Figure 6 Probability of survival to subsequent ROSH report by age group, by time since end of first CWU event

Aboriginal children were more likely to be reported and sooner than non-Aboriginal children (Figure 7). By 42 months, 37 per cent of Aboriginal children had commenced a subsequent event whereas only 24 per cent of non-Aboriginal children had commenced a new event. Both Aboriginal and non-Aboriginal children were most likely to commence a new event in the six months following their first CWU event.

Figure 7 Probability of survival to subsequent ROSH report by Aboriginal status, by time since end of first CWU event

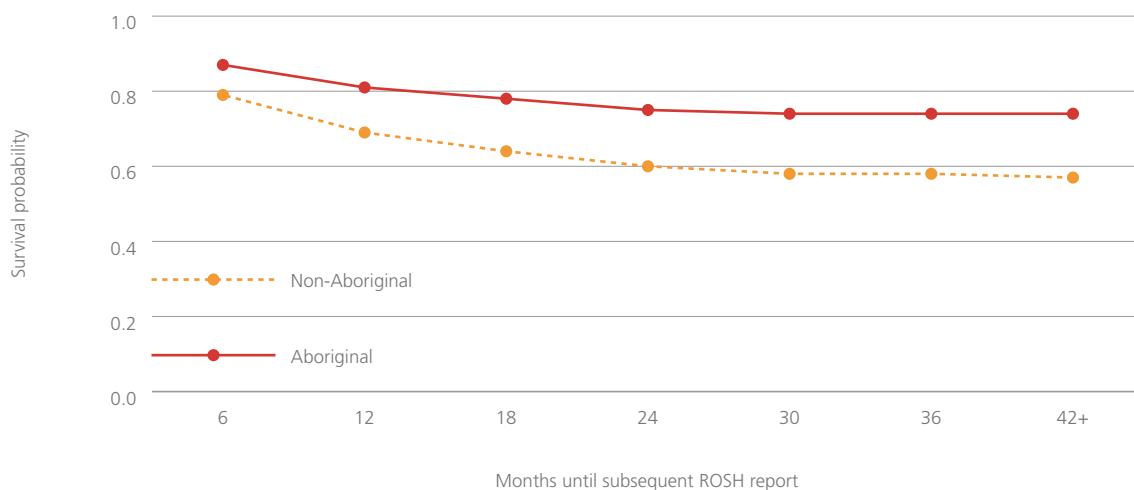
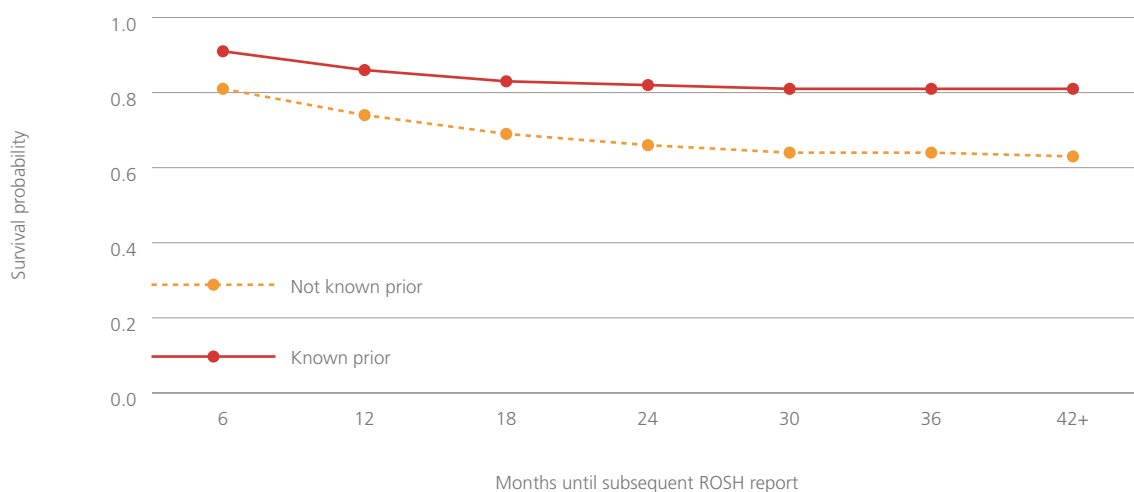


Figure 8 illustrates the survival probability for children known and not known prior to CWU. Children known to CS prior to CWU were more likely to commence a new CWU event – 44 per cent had commenced a new event by 42 months compared to only 13 per cent of children not known to CS prior to their first CWU event.

Figure 8 Probability of survival to subsequent ROSH report by whether child was known to CS prior to CWU event, by time since end of first CWU event



These same factors were entered into a Cox Proportional Hazards regression in order to model the independent effect of each of the factors in the presence of the others. As described above, assumption testing was conducted for the regression (descriptive and analysis of martingale residuals for age) and there were minor violations of the proportional hazard assumption. As mentioned above, we felt that modifying the analysis to address these minor violations would lead to unnecessary complications when interpreting the model whilst not substantially changing the results of the analysis.

Each factor was significant and the effect sizes tended to be much larger than they were for the similarly structured CWU new event analysis. By far the largest effect was prior history. Children with at least one prior streamed report had 3.7 times the hazard of experiencing a subsequent ROSH report after an initial CWU event than children without a prior history. This would be considered a large effect.

Age was moderately associated with the likelihood of a subsequent ROSH report. Contrary to the CWU event analysis, for each increase in year of age there was a corresponding eight per cent decrease in the hazard of experiencing a subsequent ROSH report ($HR=0.92$). In this model, a ten year increase in age would result in less than half the hazard of experiencing a new report (which is also substantial).

Finally, controlling for prior history and age, Aboriginal children had only a slightly higher hazard (38% increase) of experiencing a subsequent ROSH report (Table 6).

Table 6 Cox Proportional Hazards regression: Time from initial CWU event to subsequent ROSH report

	Estimate	SE	Wald	p-value	Hazard Ratio	Lower 95% CI	Upper 95% CI
Age in years	-0.08	0.001	3673.06	<.001	0.92	0.92	0.92
Aboriginal	0.32	0.014	539.67	<.001	1.38	1.34	1.42
Prior history	1.31	0.01	10186.73	<.001	3.71	3.62	3.81

Source: Wellnet

Note: Refer to methods for details of criteria for inclusion

Summary – CWU event analysis

The following summarises our main analysis goals and findings:

1. Describe the demographic characteristics of children and young people referred to CWU.

We found that amongst children seen at the CWU for the first time:

- Children aged five and younger comprised 40 per cent of the population
- One in six children were Aboriginal (17%)
- Amongst Aboriginal children, the proportion of children under two increased over time; in 2012/13 they comprised 25 per cent of the Aboriginal CWU entrants (but only 16% of non-Aboriginal entrants)
- Most children entering the CWU (59%) were not previously 'known to CS' (i.e. had not been reported to CS and streamed to a CSC for investigation prior to being seen at the CWU for the first time).
- Almost half of Aboriginal children were known to CS compared to only 39 per cent of non-Aboriginal children.
- The chance of being known to CS prior to CWU increases from birth and peaks at age 5 then decreases sharply (i.e. children aged 5 were more likely than other age groups to be known to CS) – 61 per cent of five year olds known to CWU in their first event were known to CS prior.
- In the oldest age group (13-17) Aboriginal children were less likely to have a prior CS history upon entering CWU than non-Aboriginal children. This may be due to a number of factors including a higher likelihood of being streamed to CSC prior to CWU involvement.

2. Assess the extent to which children return to the CWU with a new concern after an initial event.

We imposed a 30 day window of investigation following the event commencing and then examined whether a child had a subsequent CWU event (i.e. were re-reported/re-referred to the CWU). We found that:

- The majority of first-time entrants to CWU did not have a subsequent CWU event following the initial investigation period, even when follow-up time was accounted for. Only 28 per cent of children entering the CWU for the first time had a subsequent CWU event.

3. Ascertain the extent to which age, Aboriginal status, and known prior history with CS are related to a subsequent CWU event.

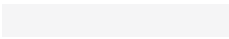
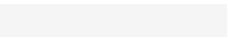
- Aboriginal children were more likely than non-Aboriginal children to have a subsequent CWU event.
- Children with a known prior history with CS were slightly more likely to have a subsequent CWU event.
- Age made very little difference in terms of which children had a subsequent CWU event.

4. Assess the extent to which the children who had a CWU event have a subsequent allegation of child maltreatment that is serious enough to warrant further investigation by a CSC.

- We found that most children entering the CWU for the first time are not reported at ROSH following their first event (regardless of what happens during their first event).

5. Ascertain the extent to which age, Aboriginal status, and known prior history with CS are related to a subsequent child protection reportstreamed to CSC.

- Children who are known to CS prior to entering CWU are far more likely to have a subsequent ROSH report.
- Age can have a considerable effect on whether children have a subsequent ROSH report. Older children are far less likely than younger children to have a subsequent ROSH report.
- When accounting for prior history of CS involvement and age, Aboriginal children are only slightly more likely than non-Aboriginal children to have a subsequent ROSH report.



Analysis of child protection report data



KTS involved a system-wide threshold change for receiving a statutory child protection assessment that moved from ‘risk of harm’ (ROH) to ‘risk of significant harm’. Prior to the KTS threshold change, the vast majority of Helpline reports were streamed to CSC for further assessment. One component of the KTS threshold change was to reconfigure the mandatory reporting rules in an effort to stream non-ROSH reports to non-statutory, preventive services.

The main challenge involved with evaluating the effect of the KTS threshold change is that children received services both before and after KTS was implemented, making attribution to KTS (either positive or negative) difficult. One solution to resolving this problem was to look only at children who had never before come into contact with the child protection system, then model their pathways before and after the implementation of KTS. This has the benefit of looking at a group of children, post KTS implementation, whose outcomes would not be affected by their exposure to the pre-KTS system. This means that children with a long history of involvement in the child protection system were not included in this portion of the overall KTS analysis (though they are included in most other parts of the evaluation). Getting an indication of the experience of children first coming into contact with child protection, pre and post the threshold change, provides a much clearer picture of how things will look in the future since this sample represents the group of children who may (or may not) become the group with a long history. Determining what they look like at the beginning of the process offers a far better prevention opportunity than could otherwise be established.

The main purpose of the reports analysis is to:

1. Describe the change to the demographic characteristics of children and young people reported for the first time at ROSH during or prior to KTS.
2. Describe the reported issues of children and young people reported for the first time at ROSH during or prior to KTS, and any change to this following KTS commencement.
3. Describe the characteristics of the first investigation received by children – whether they received a face-to-face investigation or not, and whether they entered OOHC.
4. Assess the extent to which children progressed to a subsequent ROSH report following their first investigation.
5. Ascertain the extent to which age, Aboriginal status and characteristics of their first investigation are related to progression to a subsequent ROSH report.
6. Assess the extent to which children progressed to a subsequent face-to-face assessment following their first investigation.
7. Ascertain the extent to which age, Aboriginal status and characteristics of their first investigation are related to progression to a face-to-face assessment.
8. Assess the extent to which children progressed to an OOHC episode following their first investigation and the extent to which age, Aboriginal status and characteristics of their first investigation are related to OOHC entry.

Methodology

This analytic approach requires a comparison group of children who were referred for the first time before the threshold change and would have received statutory services according to the ROSH threshold if it had been in place. After extensive investigation that involved cleaning, restructuring and querying the data, as well as numerous conversations with the data custodians, we conclude that the most reliable, valid and practical tool to construct this comparison group was the response priority assigned to the suspected child protection report, both before and after the threshold change.

Both pre and post threshold change, there are four response priority levels for a Helpline report ('less than 24 hours'; 'less than 72 hours'; 'less than 10 days'; '10 days or more/No response required'). Following advice from FaCS corporate services, we have used the following definition to compute a proxy for the ROSH threshold for children entering the system prior to KTS:

- A required response level of less than 24 hours or less than 72 hours
- A required response level of less than 10 days with a high risk of harm rating
- A report about children aged under 5 years with specified issues and those in OOHC at the time of the report. The specified issues were reported issues of 'carer drug or alcohol' or 'carer intellectual disability'; and a reported issue of 'neglect' or 'actual physical harm' or an OOHC history².

In addition to this criteria for the 'proxy' ROSH threshold, the pre-KTS group contains children who had never received a report that was streamed to a CSC prior to KTS implementation.

This is our group of children in the pre-KTS group who were most like the children at ROSH after the threshold change. For the rest of this analysis, they are the proxy ROSH group to be used for comparative purposes.

The post-threshold group contains children who:

1. Were streamed to CSC after KTS began;
2. Were assessed by the Helpline at a response priority level of 'less than 24 hours', 'less than 72 hours', or 'less than 10 days';
3. Had not had a previous ROSH report;
4. Had not had a previous referral to CWU within 30 days of the initial report streamed to CSC;
5. Had not been streamed to CSC, at any response priority level, prior to KTS.

For the rest of this analysis, this is the ROSH group that will be compared to the proxy ROSH group.

The sample selection rules described above resulted in a sample of 175,340 unique CYP, with 111,591 selected pre-KTS and 63,749 selected during KTS (Table 7). This sample represents children who met the proxy ROSH threshold, for the first time, either pre-KTS or after KTS had commenced.

2 Note that in a small number of cases a child may have been placed in voluntary OOHC and therefore may not have received a report but may already be in OOHC.

Table 7 Number and percentage of children meeting the ROSH threshold, by age and Aboriginal status			
	Pre-KTS	KTS	Total
All children	111,591	63,749	175,340
Age			
<1	26,286	14,410	40,696
1 to 2	18,548	9,447	27,995
3 to 5	20,576	11,496	32,072
6 to 12	31,932	19,002	50,934
13 to 15	14,249	9,394	23,643
Aboriginal status			
Aboriginal	12,262	7,288	19,550
Non-Aboriginal	99,329	56,461	155,790

Source: KiDS

Note: For children reported prior to the threshold change, a ROSH report is counted as one with a response level of less than 72 hours.

Refer to reports analysis methods for additional criteria for inclusion.

Data sources

Wellnet – a unit record extract was provided to the evaluation team that comprised individual records of CWU events and appraisals in which child details were recorded.

KiDS - the unit record extract utilised for this analysis was comprised of two primary data sources: 1) a combined year-on-year file of all child protection reports received by the CS Helpline containing associated data related to child information and casework dates; and 2) a file that contained placement and demographic information on all OOHC placement from 1999 to 2013.

Key variable construct

One of the main purposes of the evaluation is to determine the effect of KTS on a number of outcomes, some of which are included here. All models include:

1. KTS: Whether children are in the KTS or pre-KTS groups.
2. Face-to-face: Whether a child had a face-to-face assessment as part of the original investigation of their first ROSH report (initial face-to-face) or a subsequent investigation following the initial investigation (subsequent face-to-face).
3. Age at event: child age in years at the time of the ROSH report.
4. Aboriginal: child indicated as being Aboriginal, Torres Strait Islander, Indigenous or a combination of these. All other children including those with unknown Indigenous status are categorised as being non-Aboriginal.
5. Physical: At least one report during the first investigation period had physical abuse as a primary reported issue.
6. Sexual: At least one report during the first investigation period had sexual abuse as a primary reported issue.
7. Psychological: At least one report during the first investigation period had emotional/psychological abuse as a primary reported issue.
8. Neglect: At least one report during the first investigation period had neglect as a primary reported issue.
9. Domestic violence (DV): At least one report during the first investigation period had exposure to domestic violence as a primary reported issue.
10. KTS*face-to-face: two-way interaction term that allows us to better determine the effect of face-to-face assessments when observed prior to and after the threshold change.

Statistical Methods

Statistical methods were limited to recurrence data and were not applied to demographic and descriptive analyses. Event history techniques were used to account for differential exposure time to the possibility of having a subsequent proxy ROSH report, face-to-face investigation or entry to OOHHC. These methods allow us to model not only whether an event occurred, but also to model the length of time it took for such events to occur.

The analysis begins with a series of two-dimensional (category X time) life tables modelling time to recurrence with KTS as the main independent variable. Covariates include age, Aboriginality and first investigation characteristics. These same factors are then entered simultaneously into Cox Proportional Hazards (CPH) regressions (one for each recurrence type: subsequent ROSH episode, subsequent face-to-face and entry to care, allowing us to model the independent effect of each of these three constructs on the likelihood of recurrence).

Major assumptions/limitations

The major limitation of this analysis is that it does not include children with a prior history of involvement in child protection (see above detailed explanation). This results in decreased external validity (the degree to which findings can be extrapolated to the wider population of children reported to the Helpline), but improvements in internal validity (the degree to which we can say that any improvement or diminution is related to KTS).

In simple terms, what this means is that we were able to make a stronger case that our assessment of KTS is correct, but only for those children without a prior history of involvement with child protection. In addition, the results are only as good as the data. While community services and our evaluation team have gone to heroic efforts to understand and structure these data, there may be systematic errors. We have, to the best of our ability, selected data that we anticipate are reliable and valid, however there is always a chance that one or more are not. In particular, the proxy ROSH construct may suffer from being built from components that underwent undocumented changes in definition over the years. In all, we are confident that, given the limitations of time and data quality, the proxy ROSH is a fairly good instrument for establishing similar groups and for measuring outcomes over time.

Results – reports analysis



The sample selection rules described above resulted in a sample of 175,340 unique children, with 111,591 children selected pre-KTS and 63,749 selected during KTS (Table 8). This sample represents children who met the proxy ROSH threshold, for the first time, either pre-KTS or after KTS had commenced.

Table 8 Children meeting the proxy ROSH threshold for pre-KTS (2005/06 – 2009/10) or KTS (2009/10-2-12/13) by age and Aboriginal status

	Pre-KTS	KTS	Total
All children	111,591	63,749	175,340
Age			
<1	26,286	14,410	40,696
1 to 2	18,548	9,447	27,995
3 to 5	20,576	11,496	32,072
6 to 12	31,932	19,002	50,934
13 to 15	14,249	9,394	23,643
Aboriginal status			
Aboriginal	12,262	7,288	19,550
Non-Aboriginal	99,329	56,461	155,790

Source: KiDS

Note: Refer to reports analysis methods for additional criteria for inclusion.

Child demographics and first report characteristics

When considering age only, the two groups (pre-KTS and KTS) were fairly similar in terms of their focus on young and very young children. More than half of both the pre-KTS (58.6%) and KTS (55.5%) children were five years of age or younger, and a substantial portion of these (pre-KTS=23.6%; KTS=22.6%) were younger than one year of age. Hence, it would appear as though the vulnerability of very young children was strongly considered when assessing risk of substantial harm both pre-KTS and during KTS. This difference was more pronounced for Aboriginal children, both pre-KTS and during KTS (Table 9).

Both prior to and during KTS, Aboriginal children were more likely to be younger than their non-Aboriginal counterparts when first investigated (Table 9). Both prior to and during KTS, Aboriginal children were twice as likely (pre-KTS=41.2%, KTS=46.5%) to be younger than one compared to non-Aboriginal children (pre-KTS=21.4%, KTS=19.5%). Non-Aboriginal children (pre-KTS=13.4%, KTS=15.8%) were twice as likely than Aboriginal children (pre-KTS=7.6%, KTS=6.7%) to be in the oldest age bracket both prior to and during KTS.

Table 9 Distribution of age amongst Aboriginal and non-Aboriginal children, prior to and during KTS

Age	Aboriginal				Non-Aboriginal			
	Pre-KTS		KTS		Pre-KTS		KTS	
	N	Col %	N	Col %	N	Col %	N	Col %
< 1	5,056	41.2	3,388	46.5	21,230	21.4	11,022	19.5
1 to 2	2,273	18.5	1,269	17.4	16,275	16.4	8,178	14.5
3 to 5	1,786	14.6	974	13.4	18,790	18.9	10,522	18.6
6 to 12	2,213	18.0	1,169	16.0	29,719	29.9	17,833	31.6
13 to 15	934	7.6	488	6.7	13,315	13.4	8,906	15.8
Total	12,262	100.0	7,288	100.0	99,329	100.0	56,461	100.0

Source: KiDS

Notes: Refer to reports analysis methods for criteria for inclusion.

Maltreatment type

Children reported through Helpline and streamed to CSC can have a number of different primary report types, and these have been classified into four alleged maltreatment types: physical abuse, sexual abuse, emotional/psychological abuse, neglect and one vulnerability (domestic violence).

Due to the potential for a child to be reported more than once during the first investigation period, we have counted the child as being reported for that issue if any of the reports during their first

investigation period indicate that as a primary issue (Table 10). Thus the reported issues are not only for the very first report received for the child, but any of the reports during the initial investigation period (the same can be said about the report receiving a face-to-face assessment and entering care).

Looking firstly within maltreatment / vulnerability type (Table 10), we see little difference in the composition of age in the KTS group compared to the pre-KTS group. The largest changes were an increase in reports of sexual abuse and a drop in domestic violence reports. We observed a seven percentage point increase in reports of sexual abuse, from 10.5% prior to KTS to 17.6% during KTS (17.6%). Domestic violence reports dropped from 33.4% prior to KTS to 23.6% during KTS – a decrease of 9.8 percentage points.

There were only minor changes in the distribution of age and in the distribution of Aboriginal status within reported issue, as Table 10 shows.

Table 10 Children meeting the proxy ROSH threshold by age and Aboriginal status: Primary reported issue prior to and during KTS

	Pre-KTS					Post-KTS				
	Phys.	Sex.	Emot.	Neg.	DV	Phys.	Sex.	Emot.	Neg.	DV
All children	37,257	11,728	28,182	27,857	37,254	20,694	11,220	10,015	14,689	15,056
Age										
<1	7,611	470	4,025	6,590	10,934	4,245	613	1,248	3,077	4,548
1 to 2	5,737	872	3,903	5,351	7,757	3,283	891	1,388	3,002	2,978
3 to 5	6,467	2,340	5,143	5,298	7,110	3,734	2,415	1,791	2,963	2,593
6 to 12	12,088	4,566	10,277	7,539	8,929	6,456	4,197	3,793	3,993	3,807
13 to 15	5,354	3,480	4,834	3,079	2,524	2,976	3,104	1,795	1,654	1,130
Total	37,257	11,728	28,182	27,857	37,254	20,694	11,220	10,015	14,689	15,056
Aboriginal status										
Aboriginal	3,538	799	2,324	4,091	4,666	2,027	758	811	2,158	1,961
Non-Aboriginal	33,719	10,929	25,858	23,766	32,588	18,667	10,462	9,204	12,531	13,095
Total	37,257	11,728	28,182	27,857	37,254	20,694	11,220	10,015	14,689	15,056
	Pre-KTS					Post-KTS				
	Phys.	Sex.	Emot.	Neg.	DV	Phys.	Sex.	Emot.	Neg.	DV
	%	%	%	%	%	%	%	%	%	%
All children	33.4	10.5	25.3	25.0	33.4	32.5	17.6	15.7	23.0	23.6
Age										
<1	20.4	4.0	14.3	23.7	29.3	20.5	5.5	12.5	20.9	30.2
1 to 2	15.4	7.4	13.8	19.2	20.8	15.9	7.9	13.9	20.4	19.8
3 to 5	17.4	20.0	18.2	19.0	19.1	18.0	21.5	17.9	20.2	17.2
6 to 12	32.4	38.9	36.5	27.1	24.0	31.2	37.4	37.9	27.2	25.3
13 to 15	14.4	29.7	17.2	11.1	6.8	14.4	27.7	17.9	11.3	7.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Aboriginal status										
Aboriginal	9.5	6.8	8.2	14.7	12.5	9.8	6.8	8.1	14.7	13.0
Non-Aboriginal	90.5	93.2	91.8	85.3	89.0	90.2	93.2	91.9	85.3	87.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: KiDS

Notes: Primary reported issue has been computed as a primary issue in any report received during the initial investigation. An investigation can therefore have more than one primary issue. Refer to reports analysis methods for criteria for inclusion.

Looking within age categories at the types of reports received within each age group and by Aboriginal and non-Aboriginal children, we see several notable differences once KTS commenced (Table 11). Within the youngest age group (children younger than one), there was a 10 percentage point decrease in the proportion of children reported for domestic violence. Similar increases were seen amongst children up to and including five years of age. Amongst children aged three to five years, there was a 9.6 percentage point increase in the proportion of children reported for sexual abuse, and similar increases for children aged six to 12 (7.8 percentage points) and 13 to 15 (8.6 percentage point increase). At the same time, we observed a relatively large reduction in the proportion of children aged 13 to 15 who were reported for emotional/psychological abuse (14.8 percentage point reduction), with corresponding but smaller reductions in each age group, with the reductions more pronounced amongst older children.

Table 11 Number and percentage point change in reported issue within age groups and within Aboriginal and non-Aboriginal children, pre-KTS to KTS

Pre-KTS						
	Phys.	Sex.	Emot.	Neg.	DV	All
	Row%	Row%	Row%	Row%	Row%	N
All children	33	11	25	25	33	111,591
<1	29	2	15	25	42	26,286
1 to 2	31	5	21	29	42	18,548
3 to 5	31	11	25	26	35	20,576
6 to 12	38	14	32	24	28	31,932
13 to 15	38	24	34	22	18	14,249
Aboriginal	29	7	19	33	38	12,262
Non-Aboriginal	34	11	26	24	33	99,329
Post-KTS						
All children	32	18	16	23	24	63,749
<1	29	4	9	21	32	14,410
1 to 2	35	9	15	32	32	9,447
3 to 5	32	21	16	26	23	11,496
6 to 12	34	22	20	21	20	19,002
13 to 15	32	33	19	18	12	9,394
Aboriginal	28	10	11	30	27	7,288
Non-Aboriginal	33	19	16	22	23	56,461
Percentage point change						
All children	-0.9	7.1	-9.5	-1.9	-9.8	
<1	0.5	2.5	-6.7	-3.7	-10.0	
1 to 2	3.8	4.7	-6.4	2.9	-10.3	
3 to 5	1.1	9.6	-9.4	0.0	-12.0	
6 to 12	-3.9	7.8	-12.2	-2.6	-7.9	
13 to 15	-5.9	8.6	-14.8	-4.0	-5.7	
Aboriginal	-1.0	3.9	-7.8	-3.8	-11.1	
Non-Aboriginal	-0.9	7.5	-9.7	-1.7	-9.6	

Source: KiDS

Notes: Primary reported issue has been computed as a primary issue in any report received during the initial investigation. An investigation can therefore have more than one primary issue. Refer to reports analysis methods for criteria for inclusion. This also means that the row % total will not add to 100, rather it represents the proportion of children within each age group reported for that issue.

Change is the difference between KTS and pre-KTS proportions.

Investigation details

This section details the type of investigation for the first report received by children reported at ROSH or the proxy for ROSH. We assumed that each child who was included in our analysis had an initial assessment at Helpline that indicated the report should be streamed to a CSC for further assessment. We then computed an indicator of whether the child received a face-to-face assessment during the investigation period (which you will recall from our methods discussion is the period between the first report being received and the plan closure date or 60 days, whichever occurred first).

As Table 12 indicates, looking at the characteristics of children who did and did not receive a face-to-face investigation, we see that on average, there were minimal differences in the age distribution of children that did not receive a face-to-face assessment prior to and during KTS. During KTS, a higher proportion of face-to-face assessments were for younger children with a corresponding reduction in the proportion of face-to-face for children aged 6 to 12.

There is minimal difference in the proportion of investigations without a face-to-face that are related to Aboriginal children compared to non-Aboriginal children, a slight increase in the proportion of face-to-face assessments related to Aboriginal children, and a minimal difference in the proportion of OOHC entries (during first investigation) that relate to Aboriginal children.

Table 12 Characteristics of first investigation and age and Aboriginal status within each report type, prior to KTS and during KTS

	Pre-KTS				During KTS			
	No F2F	F2F	OOHC	All	No F2F	F2F	OOHC	All
	N	N	N	N	N	N	N	N
All children	98,949	12,642	1,570	111,591	54,492	9,257	738	63,749
Age								
<1	22,560	3,726	723	26,286	11,404	3,006	392	14,410
1 to 2	16,856	1,692	200	18,548	8,021	1,426	102	9,447
3 to 5	18,515	2,061	171	20,576	9,967	1,529	81	11,496
6 to 12	28,609	3,323	291	31,932	16,967	2,035	88	19,002
13 to 15	12,409	1,840	185	14,249	8,133	1,261	75	9,394
Aboriginal status								
Aboriginal	10,509	1,753	317	12,262	5,654	1,634	144	7,288
Non-Aboriginal	88,440	10,889	1,253	99,329	48,838	7,623	594	56,461
	No F2F	F2F	OOHC	All	No F2F	F2F	OOHC	All
	Col %	Col %	Col %	Col %	Col %	Col %	Col %	Col %
Age								
<1	22.8	29.5	46.1	23.6	20.9	32.7	53.1	22.6
1 to 2	17.0	13.4	12.7	16.6	14.7	15.5	13.8	14.8
3 to 5	18.7	16.3	10.9	18.4	18.3	16.6	11.0	18.1
6 to 12	28.9	26.3	18.5	28.6	31.1	22.1	11.9	29.8
13 to 15	12.5	14.6	11.8	12.8	14.9	13.7	10.2	14.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Aboriginal status								
Aboriginal	10.6	13.9	20.2	11.0	10.4	17.7	19.5	11.4
Non-Aboriginal	89.4	86.1	79.8	89.0	89.6	82.3	80.5	88.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: KiDS

Notes: Refer to reports analysis methods for criteria for inclusion.

Progression through child protection system following first investigation

This section details the number and percentage of children with a new ROSH report, face-to-face assessment or OOHC episode following their first investigation period. Analysis of the progression to each point includes a description of the characteristics of children in the group that progressed, a life table analysis of the time to the event and finally results of a multivariate Cox Proportional Hazard regression that examines demographic characteristics, first investigation characteristics and the time to the event whilst simultaneously accounting for time spent in the follow-up period and censoring.

Children re-reported at ROSH following their first investigation

This first section describes the recurrence of ROSH reports amongst children following the investigation of their first report. We start with descriptive characteristics of children who were re-reported, and then we show results of the analysis of the time to re-report and the results of a multivariate regression of time to re-report³.

Table 13 shows the overall number of children whose first investigation was complete prior to the censor date and the number of children who were subsequently reported at ROSH. There has been an overall reduction in the proportion of children receiving a subsequent ROSH report following the threshold change, pre-KTS, 33.5 per cent of initial investigations had a subsequent investigation that met the proxy ROSH and during KTS this figure decreased to 20.4 per cent. For pre-KTS children, those who received a face-to-face visit were more likely to have a subsequent proxy ROSH report (39.2%) than those who did not (32.8%). Following the threshold change, there was almost no difference in the re-report rates of children who receive a face-to-face (20.5%) compared to those who did not (20.4%), which means that there has been a larger reduction in the re-report rate for children who had a face-to-face. Note that these tables do not account for the effect of follow up time.

3 A description of our criteria for investigation time and time-to-event are detailed in the methods section and Appendix A.

Table 13 Subsequent proxy ROSH following initial investigation between children who did and did not receive a F2F as part of their initial investigation prior to and during KTS

	Pre-KTS		During KTS	
	Subsequent proxy ROSH	All children	Subsequent proxy ROSH	All children
First investigation				
No F2F	32,476	98,949	11,120	54,492
F2F	4,345	11,072	1,749	8,519
Total	36,821	110,021	12,869	63,011
%				
No F2F	32.8%		20.4%	
F2F	39.2%		20.5%	
Total	33.5%		20.4%	

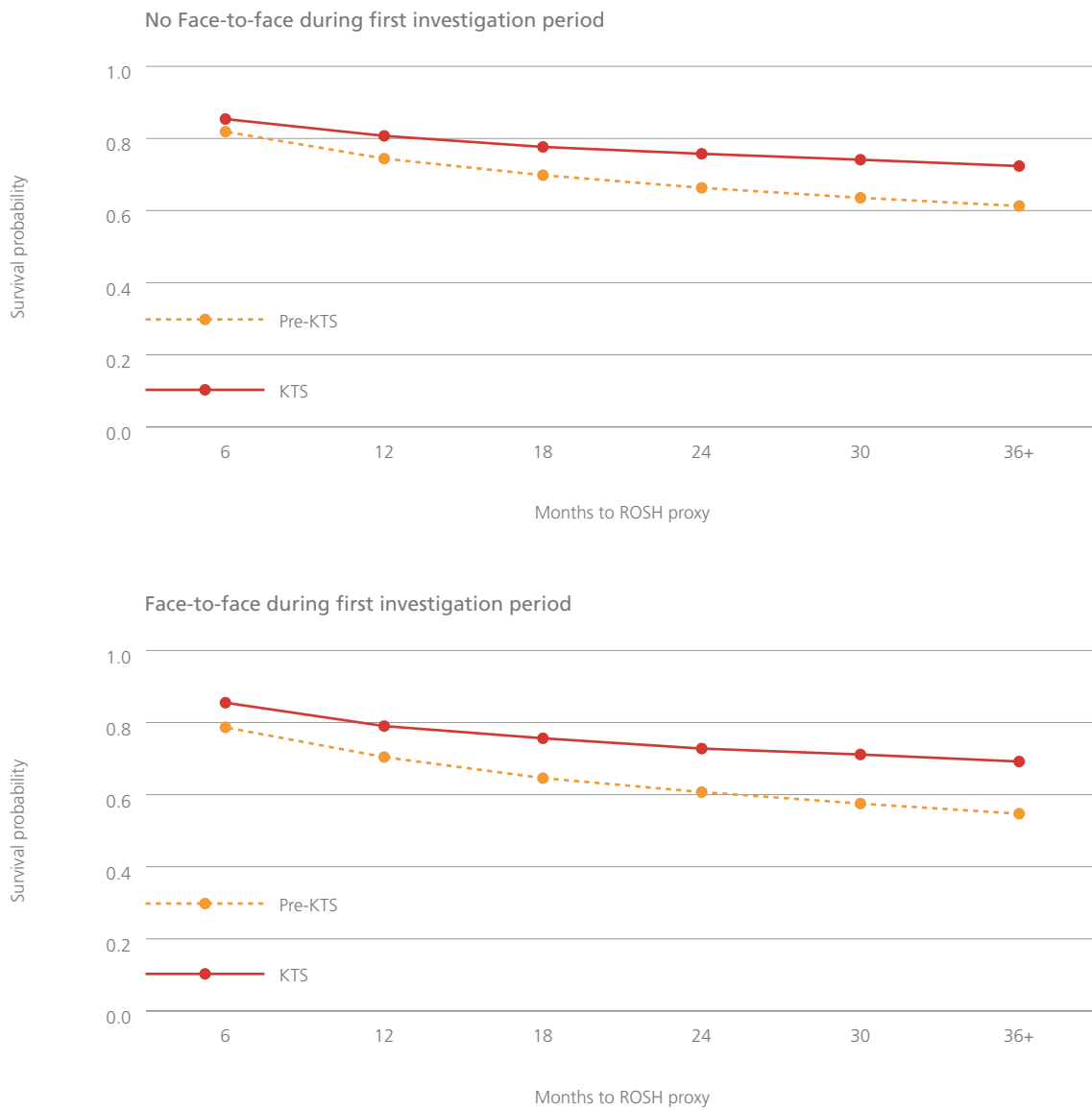
Source: KiDS

Notes: Row total will not add to 100% as a child can experience more than one of these points after their first investigation. Excludes children who entered OOHC during their first investigation. Children in the pre-KTS group were not observed (censored) following KTS commencement. Refer to reports analysis methods for criteria for inclusion.

Life table analysis

The pathways of children through the child protection system are influenced by the amount of time they are observed. That is, if children are observed for longer, they are more likely to experience a transition, even if their likelihood of transition is similar to children observed for shorter periods of time. In addition, it is sometimes helpful to know when transitions are likely to occur and for whom. Similar to the CWU analysis, this portion of the reports analysis details the time to event, in this case time to re-report, whilst accounting for observation time. This life table analysis illustrates on how quickly children are re-reported at ROSH after their first report is investigated.

As Figure 9 illustrates, subsequent ROSH reports were far more likely to occur within the first year after the original investigation, and this was true both prior to the threshold change (80%) and after the change (87%). However, children in the KTS group were less likely, overall, to have a subsequent ROSH report. By 24 months, KTS children returned about 20 per cent of the time compared to the pre-threshold change group who returned about 26 per cent of the time. Children who had a face-to-face included in their original assessment fared differently pre and during KTS. Pre-KTS children returned to CSC with a new proxy ROSH more often (31%) than those without a face-to-face (25%). However, KTS children had the same rate of return after 24 months (20%) whether or not they had a face-to-face assessment.

Figure 9 Survival time to ROSH following first investigation, prior to and during KTS

Source: KiDS

Note: Refer to reports analysis methods for criteria for inclusion.

Regression results – time to new ROSH report

This section of the unit record analysis uses multivariate methods that account for both time and the presence of a number of competing, interrelated, and potentially causal factors (i.e., age, maltreatment type) on the likelihood of outcomes (in this case, a new ROSH report). Prior to this, we were only looking at two constructs at a time, at most stratified by a third construct. In essence, this more complex analysis models the independent effect of KTS with respect to whether there was a new ROSH report (and in the following sections, a new ROSH report that involved a face-to-face visit or a placement into OOHC). The main reason for doing this type of analysis is that, often, important elements of a case act in concert, making it difficult to ascertain what is causing a certain trend. By bringing them together in a multivariate statistical analysis, we are able to estimate the effect of each construct independent of the other. In practice, this means that these results can differ, sometimes substantially, from the results of prior univariate and bivariate analyses.

Table 14 Cox Proportional Hazards regression results: Time to subsequent ROSH / proxy ROSH

Factor	Estimate	SE	Chi-Square	p-value	Hazard Ratio	95% HR Confidence Limits	
KTS	-0.21	0.01	313.89	<.001	0.81	0.80	0.83
F2F	0.20	0.02	132.17	<.001	1.23	1.18	1.27
Age at first report	-0.05	0.00	1702.70	<.001	0.95	0.95	0.95
Aboriginal	0.54	0.01	1579.66	<.001	1.72	1.67	1.76
Physical	0.04	0.01	13.23	<.001	1.04	1.02	1.06
Sexual	-0.16	0.02	76.92	<.001	0.85	0.82	0.88
Psychological	0.11	0.01	88.00	<.001	1.12	1.09	1.14
Neglect	0.13	0.01	107.10	<.001	1.13	1.11	1.16
Domestic violence	0.05	0.01	17.40	<.001	1.05	1.03	1.07
KTS * F2F	-0.17	0.03	30.31	<.001	0.84	0.79	0.90

Source: KiDS

Notes: Refer to reports analysis methods for criteria for inclusion.

Overall, children who are reported for the first time for a concern that met the ROSH threshold during KTS had a substantially lower likelihood (HR=0.81) of experiencing a subsequent report that meets the proxy ROSH threshold than pre-KTS children (Table 14). This runs contrary to the effect of face-to-face visit during the original assessment period, which is associated with a higher hazard (HR=1.23) of experiencing a subsequent proxy ROSH report. The significant and strong interaction between KTS and face-to-face (KTS*face-to-face=0.84) indicates that the effect of face-to-face cannot be considered without also considering the effect of KTS. When modelled together, children who had a face-to-face assessment during KTS were less likely to have a subsequent ROSH report (HR=0.84) than pre-KTS children who either had a face-to-face (HR=1.23) or did not have a face-to-face (reference category),

and were about as likely to experience a subsequent proxy ROSH report as KTS children who did not have a face-to-face assessment (HR=0.81).

Age and Aboriginal status had a fairly strong effect in this analysis. For every year increase in age, children had a 0.05 lower hazard (HR=0.95) of experiencing a subsequent ROSH report. Interpreted over years, 10 year old children would have twice the hazard (HR=0.61) of newborns. All else being equal, Aboriginal children had a higher likelihood (HR=1.72) of a subsequent ROSH report as non-Aboriginal children.

Maltreatment type also had an effect, though not to the same extent as the other listed factors. Children with at least one indication of suspected physical abuse in the original investigation were slightly more likely than those without an indication of physical abuse to experience a subsequent proxy ROSH report (HR=1.04); children with at least one indication of primary report of suspected sexual abuse were less likely to experience a recurrence (HR=0.85) than those without an indication of sexual abuse; children with an indication of psychological abuse were somewhat more likely to experience a recurrence (HR=1.12) than those without an indication of psychological abuse; children with an indication of neglect were somewhat less likely (HR=1.13) to experience a recurrence than those without an indication of neglect; and children with an indication of exposure to domestic violence were slightly more likely to experience a recurrence (HR=1.05).

Subsequent face-to-face investigation

This section builds on the analysis of re-reports by examining children who progressed to a new face-to-face investigation following their first investigation. As with the re-reports analysis, we first describe the children in this group, then illustrate the time to event and then show the results of multivariate regression analysis.

Looking at the percentage of children who received a subsequent face-to-face assessment following their initial investigation (Table 15), we see a relatively small drop in these re-investigation rates during KTS compared to pre-KTS. For both pre-KTS and KTS, those who had a face-to-face assessment during the initial investigation were more likely to have a subsequent face-to-face than those who did not have an initial face-to-face, though the proportion was somewhat lower for the KTS sample (13.4%) than the pre-KTS sample (17.2%).

Table 15 Subsequent face-to-face following initial investigation between children who did and did not receive a F2F as part of their initial investigation

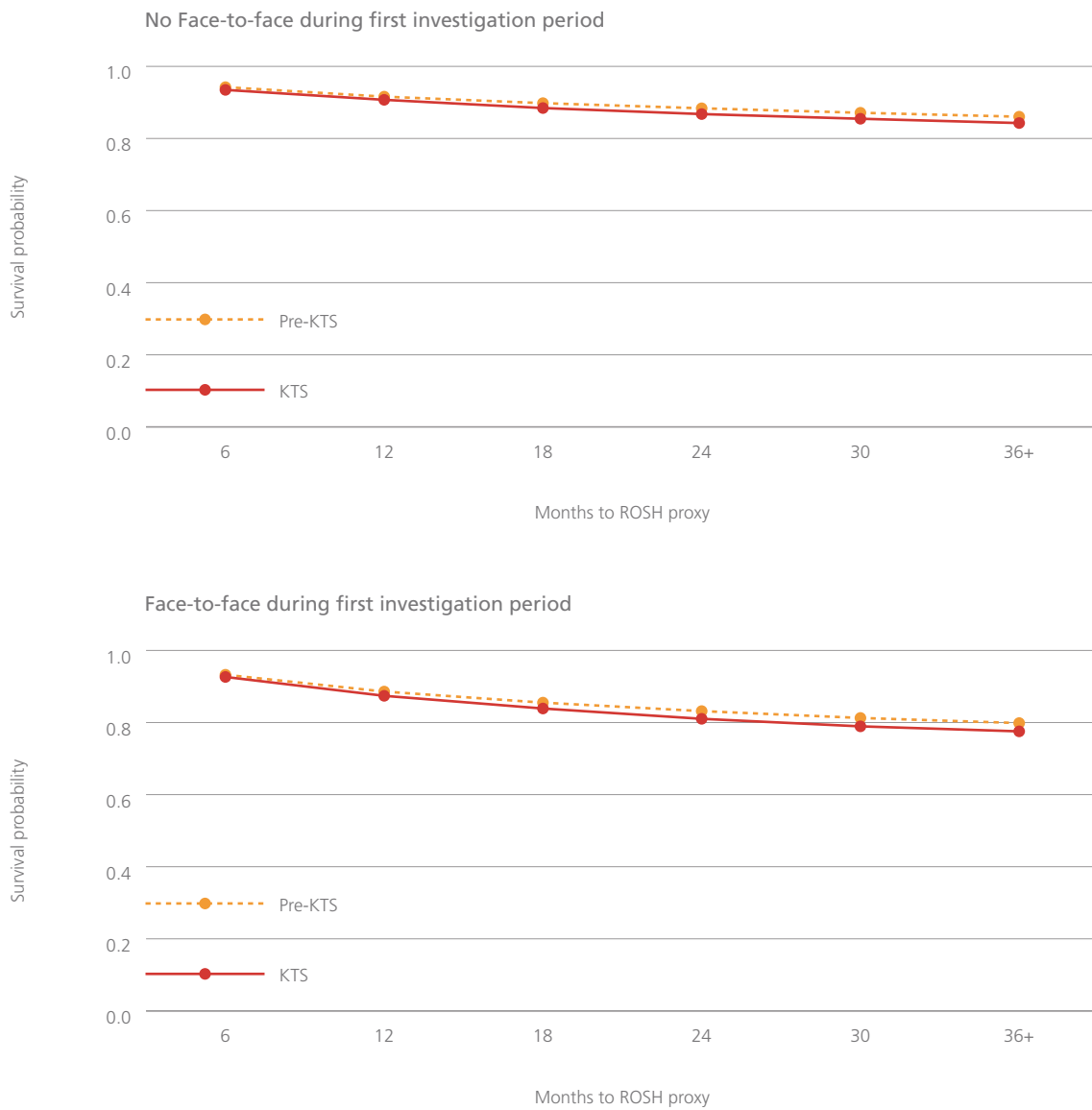
	Pre-KTS		KTS	
	New F2F	All children	New F2F	All children
First investigation				
No F2F	11,654	98,949	5,856	54,492
F2F	1,905	11,072	1,138	8,519
Total	13,559	110,021	6,994	63,011
%				
No F2F	11.8%		10.7%	
F2F	17.2%		13.4%	
Total	12.3%		11.1%	

Source: KiDS

Notes: Row total will not add to 100% as a child can experience more than one of these points after their first investigation. Excludes children who entered OOHC during their first investigation. Children in the pre-KTS group were not observed (censored) following KTS commencement. Refer to reports analysis methods for criteria for inclusion.

Life table analysis

As with the reports analysis, we see that subsequent face-to-face assessments were also more likely to occur within the first year of the original investigation, and this was true both pre-KTS (77%) and during KTS (79%). However, unlike subsequent ROSH reports, there were no differences by KTS group for the overall rate of recurrence of a report with a subsequent face-to-face (Figure 10).

Figure 10 Survival time to a new face-to-face assessment following first investigation, prior to and during KTS

Source: KiDS

Refer to reports analysis methods for criteria for inclusion.

Regression results – time to new face-to-face assessment

A short reminder that this section of the unit record analysis uses multivariate methods that account for both time and the presence of a number of competing, interrelated, and potentially causal factors. As a result, analyses can differ, sometimes substantially, from the results of prior univariate and bivariate analyses as they do here.

Overall, children who are reported for the first time for a concern that met the proxy ROSH threshold during KTS, but who did not have a face-to-face visit during their original investigation, had a higher likelihood ($HR=1.15$) of having a subsequent face-to-face assessment than pre-KTS children (Table 16). That is, if children had a new ROSH report during KTS, they were more likely to have a face-to-face visit in the subsequent report (thus, they can be less likely to have a new report, but more likely that a new report, if there is one, will be responded to with a face-to-face visit). Also higher, a face-to-face visit during the original assessment period is associated with a higher hazard ($HR=1.32$) of experiencing a subsequent face-to-face assessment. That is, children who had an initial face-to-face were more likely to have a subsequent face to face if they had a new ROSH report. The significant and strong interaction between KTS and initial face-to-face ($KTS*face-to-face$) indicates that the effect of face-to-face cannot be considered without also considering the effect of KTS. When modelled together, children who had a face-to-face assessment during KTS ($HR=1.32$, calculation not shown) were somewhat more likely to have a subsequent face-to-face assessment than pre-KTS children who did not have a face-to-face assessment (reference group). The children least likely to have a subsequent face-to-face were pre-KTS children who did not originally have a face-to-face. That is, even though pre-KTS children were more likely to have a subsequent ROSH-proxy report than KTS children (see prior ROSH regression), pre-KTS children were less likely than KTS children to have a face-to-face assessment if they had a subsequent report.

Age and Aboriginal status had a fairly strong effect in the subsequent face-to-face analysis. For every year increase in age, children had a 0.09 lower hazard ($HR=0.90$) of experiencing a subsequent face-to-face assessment. Interpreted over years, Newborn children would have 0.41 times the hazard of having a face-to-face than 10 year old children. All else being equal, Aboriginal children had a higher likelihood ($HR=2.01$) of a subsequent face-to-face assessment than non-Aboriginal children.

Maltreatment type also had an effect, though not to the same extent as the other listed factors. Children with at least one indication of suspected physical abuse in the original investigation virtually no more likely than those without an indication of physical abuse to experience a subsequent face-to-face assessment ($HR=1.01$); children with at least one indication of a primary report for suspected sexual abuse were more likely to experience a subsequent face-to-face ($HR=1.30$) than those without an indication of sexual abuse; children with an indication of psychological abuse were somewhat more likely to experience a new face-to-face ($HR=1.07$) than those without an indication of psychological abuse; children with an indication of neglect were somewhat less likely ($HR=1.15$) to experience a subsequent face-to-face than those without an indication of neglect; and children with an indication of exposure to domestic violence were somewhat less likely to experience a new face-to-face ($HR=0.90$).

Table 16 Cox Proportional Hazards regression results: Time to subsequent face-to-face assessment

Factor	Estimate	SE	Chi-Square	p-value	Hazard Ratio	95% HR Confidence Limits	
KTS	0.14	0.02	71.74	<.001	1.15	1.11	1.19
F2F	0.28	0.03	123.41	<.001	1.32	1.26	1.39
Age at first report	-0.10	0.00	2842.17	<.001	0.90	0.90	0.91
Aboriginal	0.70	0.02	1621.13	<.001	2.01	1.94	2.08
Physical	0.01	0.02	0.58	0.45	1.01	0.98	1.04
Sexual	0.26	0.02	116.05	<.001	1.30	1.24	1.36
Psychological	0.07	0.02	15.93	<.001	1.07	1.04	1.11
Neglect	0.14	0.02	65.65	<.001	1.15	1.11	1.18
Domestic Violence	-0.11	0.02	42.03	<.001	0.90	0.87	0.93
KTS * F2F	-0.14	0.04	11.35	<.001	0.87	0.80	0.94

Source: KiDS

Notes: Refer to reports analysis methods for criteria for inclusion.

OOHC entry

This section details the number, proportion and characteristics of children who entered OOHC following their first investigation amongst children who did not enter care before or during their first investigation. As with previous analyses above, we then examine the time to OOHC entry and show the results of a Cox Proportional Hazards regression detailing the likelihood of entering care accounting for follow up time and censoring.

Amongst the relatively few entrants to OOHC, the rates of entry following initial investigation dropped from 4.4 per cent to 2.2 per cent during KTS (Table 17). The reduction was higher amongst those who received a face-to-face as part of their initial investigation.

Table 17 Subsequent face-to-face following initial investigation between children who did and did not receive a F2F as part of their initial investigation

	Pre-KTS		KTS	
	New F2F	All children	New F2F	All children
First investigation				
No F2F	3,966	98,949	1,135	54,492
F2F	858	11,072	247	8,519
Total	4,824	110,021	1,382	63,011
%				
No F2F	4.0%		2.1%	
F2F	7.7%		2.9%	
Total	4.4%		2.2%	

Source: KiDS

Notes: Row total will not add to 100% as a child can experience more than one of these points after their first investigation. Excludes children who entered OOHC during their first investigation. Children in the pre-KTS group were not observed (censored) following KTS commencement. Refer to reports analysis methods for criteria for inclusion.

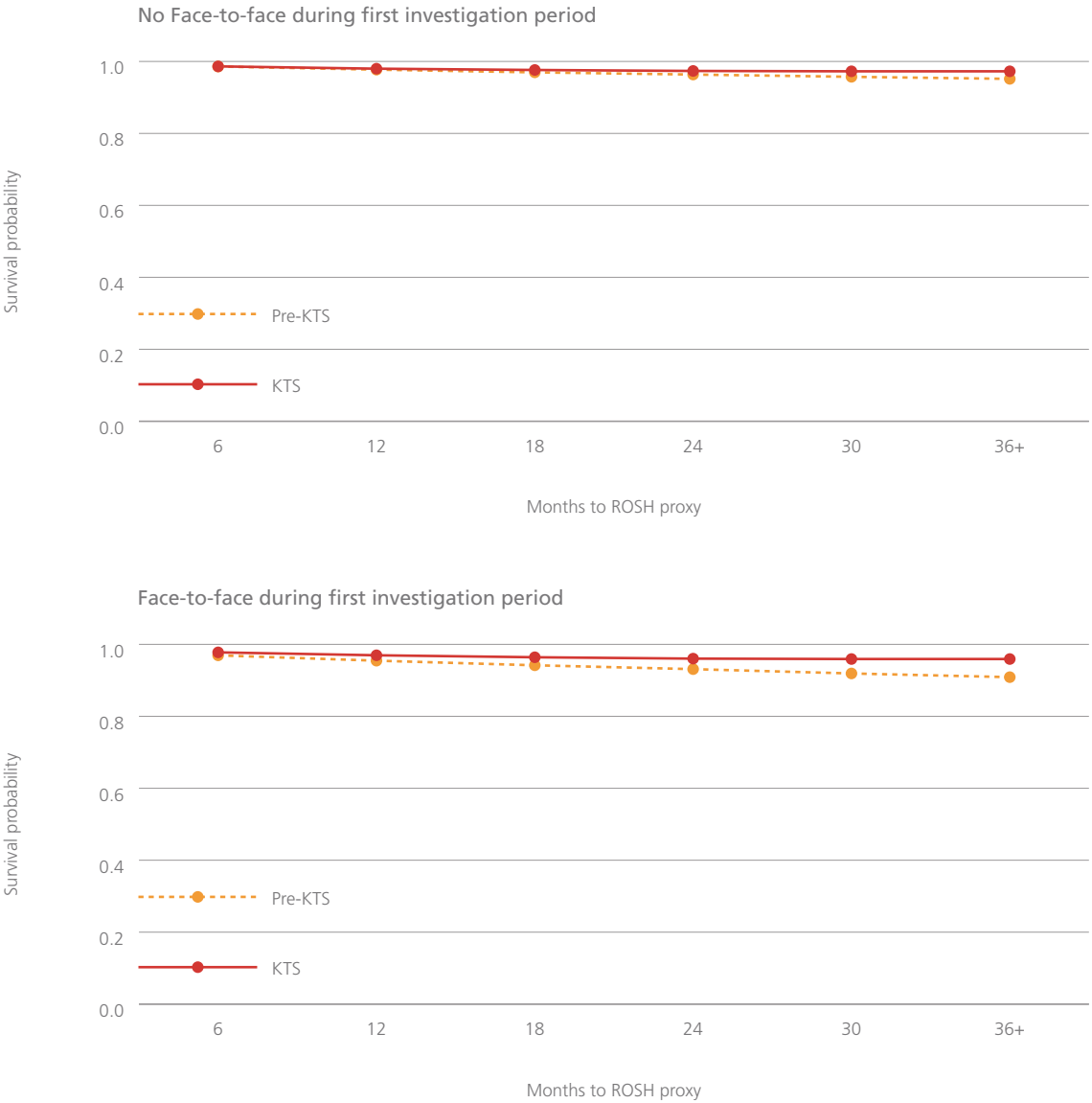
Life table analysis OOHC

Placement into OOHC after the close of investigation occurred relatively infrequently, and this was true both pre (3%) and during KTS (2%). However, it is important to remember that placement could have occurred during the investigation period and such placements would not be counted in these figures. The rate of recurrence differed substantially by whether children had a face-to-face visit as part of the original investigation (Figure 11). In the pre-KTS group, children who had a face-to-face assessment were more likely to have an OOHC episode within 24 months (5%) than children who did not have a face-to-face assessment (2%). Similarly but less apparent, children in the KTS group who had a face-to-face assessment were more likely to have an OOHC placement episode (3%) than children who did not have a face-to-face assessment (2%).

It appears there was an increase in the proportion of Aboriginal children receiving a face-to-face following initial investigation during KTS compared to pre-KTS, whereas non-Aboriginal children were less likely to receive a face-to-face during KTS compared to pre-KTS.

Amongst the small numbers entering OOHC following their first investigation, there was a decrease for both groups; however a larger proportion of Aboriginal children entered care than non-Aboriginal children.

Figure 11 Survival time to a new OOHC entry following first investigation, prior to and during KTS



Source: KiDS

Regression results – Time to subsequent OOHC placement

The OOHC models are less stable than the other regression models due to the relatively infrequent placement of children within this sample (i.e., low base rate event). In addition, as indicated in the prior time to event analysis, placement in OOHC does not include children who were placed during the investigation period (i.e., prior to investigation end or 60 days from placement start, whichever came first). As a result, these findings should be interpreted with caution. As with the previous results, this section of the unit record analysis uses multivariate methods that account for both time and the presence of a number of competing, interrelated, and potentially causal factors. As a result, analyses can differ, sometimes substantially, from the results of prior univariate and bivariate analyses.

Overall, as Table 18 shows, children who were reported for the first time for a concern that met the proxy ROSH threshold during KTS had a lower likelihood (HR=0.71) of having a subsequent placement in OOHC than pre-KTS children. The opposite was true for face-to-face visit during the original assessment period, which was associated with a higher hazard (HR=1.79) of experiencing a subsequent placement in OOHC. The significant interaction between KTS and face-to-face (KTS*F2F, $p<0.0001$) indicates that the effect of face-to-face cannot be considered without also considering the effect of KTS. When modelled together, children who had a face-to-face assessment during KTS (HR=0.92, calculation not shown) were slightly less likely to have a subsequent placement in OOHC than pre-KTS children who did not have a face-to-face assessment (reference group). That is, KTS children who did not have a face-to-face appear to be less likely to have a subsequent placement in OOHC (HR=0.71) than KTS children who had a face-to-face assessment in the original proxy ROSH investigation.

Age and Aboriginal status had an association with subsequent placement in OOHC. For every year increase in age, children had a lower hazard (HR=0.84) of experiencing a subsequent placement in OOHC. This is a substantial effect. Newborn children would have 0.18 times the hazard of having a face-to-face than 10 year old children. Given the strength of this estimate, it should be interpreted with great caution. All else being equal, Aboriginal children also had a very high likelihood (HR=2.38) of a subsequent placement in OOHC when compared to non-Aboriginal children.

Maltreatment type also had an effect, though again caution is warranted due to the sparsity of placements. Children with at least one indication of suspected physical abuse in the original investigation were less likely than those without an indication of physical abuse to experience a subsequent placement in OOHC (HR=0.87); children with at least one indication of a primary report that included suspected sexual abuse were far less likely to experience a subsequent placement in OOHC (HR=0.58) than those without an indication of sexual abuse; children with an indication of psychological abuse were no more likely to experience a subsequent placement in OOHC (not significant) than those without an indication of psychological abuse; children with an indication of neglect were somewhat more likely (HR=1.13) to experience a subsequent placement in OOHC than those without an indication of neglect; and children with an indication of exposure to domestic violence were less likely to experience a subsequent placement in OOHC (HR=0.71).

Table 18 Cox Proportional Hazards regression results: Time to subsequent face-to-face assessment

Factor	Estimate	SE	Chi-Square	p-value	Hazard Ratio	95% HR Confidence Limits	
KTS	-0.35	0.03	102.87	<.001	0.71	0.66	0.76
F2F	0.58	0.04	229.42	<.001	1.79	1.66	1.93
Age at first report	-0.17	0.00	1581.34	<.001	0.84	0.84	0.85
Aboriginal	0.87	0.03	895.20	<.001	2.38	2.25	2.52
Physical	-0.14	0.03	23.28	<.001	0.87	0.82	0.92
Sexual	-0.55	0.06	80.02	<.001	0.58	0.51	0.65
Psychological	-0.01	0.03	0.11	0.74	0.99	0.93	1.06
Neglect	0.12	0.03	16.91	<.001	1.13	1.06	1.19
Domestic Violence	-0.34	0.03	131.06	<.001	0.71	0.67	0.75
KTS * F2F	-0.31	0.08	15.35	<.001	0.73	0.63	0.86

Source: KiDS

Notes: This excludes children placed in care during their first investigation.

Refer to reports analysis methods for criteria for inclusion.

Summary – reports analysis

The following summarises our main analysis goals and findings:

1. **Describe the change to the demographic characteristics of children and young people reported for the first time at ROSH level during and prior to KTS**
 - More than half of the children receiving services for the first time pre-KTS and during KTS were aged five and younger, and a substantial proportion were younger than one, indicating that younger children have been a focus for many years.
 - Within this focus on young children across the years, young children under six who are Aboriginal were more likely to be reported compared with non-Aboriginal children.
 - There was an increase amongst Aboriginal children under one during KTS compared to pre-KTS.

2. Describe the reported issue of children and young people reported for the first time at ROSH during and prior to KTS, and any change to this following KTS commencement

We counted the primary issue of reports during the investigation period and found:

- On average, just over one third of reported issues in this analysis group were related to physical abuse; about a quarter were neglect and emotional/psychological abuse. Domestic violence was indicated in around one third of reports and was higher amongst younger children.
- Although absolute numbers remained low compared to other reported issues, there was an increase in the proportion of children with reports involving sexual abuse both within each age group and between Aboriginal and non-Aboriginal children. That is, even though children were, overall, less likely to be reported for child sexual abuse during an investigation that was over the proxy-ROSH threshold, the new threshold appears to have resulted in a larger number of children being reported for sexual abuse within an investigation where at least one of the reports was over the proxy-ROSH threshold. In all likelihood, this is a function of the seriousness with which such allegations are taken when compared to other forms of maltreatment.
- There were reductions in every other form of reported issue, with the largest reductions being for Emotional/Psychological abuse (a 40% decrease in proportion of reports with this as a reported issue during at least one report receiving in their first investigation).
- We observed minimal change, pre-KTS to KTS, to the composition of age and Aboriginal status within each reported issue (i.e., for each reported issue, we observed roughly the same proportions of Aboriginal and non-Aboriginal children within each age group).

3. Describe the characteristics of the first investigation received by children pre-KTS and during KTS – whether they received a face-to-face investigation or not, and whether they entered OOHC.

During the initial investigation period of the first proxy-ROSH report received by children who had not had a prior proxy-ROSH report, we found that:

- The overall proportion of children who received a face-to-face investigation during their first investigation increased slightly from pre-KTS to KTS.
- Compared to pre-KTS, there was an increase during KTS in the proportion of young children five and under who received a face-to-face.
- Although absolute percentages remained low, there was a relatively larger increase in the proportion of Aboriginal children with face-to-face investigations during their initial investigation (40% increase compared to 11% increase amongst non-Aboriginal children).

- A very small number of children entered OOHC both pre-KTS and during KTS.
- The proportion of the very small number of children who entered OOHC during their first investigation dropped substantially after the commencement of KTS, and this was particularly the case for older children.
- Though small in actual number (274 pre-KTS; 144 KTS) and absolute percentage (1.51% pre-KTS; 1.16% KTS), the proportion of Aboriginal children placed in OOHC decreased by 23 per cent.

4. Assess the extent to which children progressed to a subsequent ROSH report following their first investigation (NOTE: these findings do not account for exposure time or the influence of other known explanatory factors. Please see sections 5 for comprehensive analysis).

For children without a prior history of child protection who were not placed in OOHC as part of their initial investigation, we found:

- The vast majority (74%) of children who were reported for the first time at proxy-ROSH were not the subject of a subsequent proxy-ROSH report.
- Amongst the children who did receive a subsequent proxy-ROSH report, they were more likely to receive it within 6 months of the end of their first investigation period – this did not change following KTS commencement.
- The overall chance of receiving a new proxy-ROSH report decreased after KTS commenced regardless of whether a face-to-face was conducted during the first investigation.
- A face-to-face investigation as part of a child's first investigation was associated with a higher chance of receiving a subsequent proxy-ROSH both before and during KTS.
- After KTS commenced, the chance of receiving a subsequent proxy-ROSH report following a face-to-face decreased, meaning that a face-to-face during KTS was still associated with a higher chance of a new proxy-ROSH but this chance was smaller than it was pre-KTS.

5. Ascertain the extent to which age, Aboriginal status, known prior history and characteristics of their first investigation are related to progression to a subsequent ROSH report

We found that once observation time and other explanatory factors were accounted for:

- Aboriginal children had a greater chance than non-Aboriginal children to receive a subsequent ROSH report. Following KTS this chance decreased slightly but remained high.
- Age only had a slight influence on the chance of receiving a new report once Aboriginal status and type of investigation were accounted for. Small decreases in the likelihood of receiving a new report were observed for children who tended to be older at the time of the initial investigation.
- Reported issue (for first investigation) has little influence on whether a child receives a subsequent report. However, the small number of children who had an indication of sexual abuse had a lower chance of having a subsequent proxy-ROSH report.

6. Assess the extent to which children progressed to a subsequent face-to-face investigation following their first investigation (NOTE: these findings do not account for exposure time or the influence of other known explanatory factors. Please see sections 7 for comprehensive analysis).

Given the overall re-report rate was low amongst our analysis groups, few children were observed to have a face-to-face investigation after their first investigation. Amongst the children who did receive a subsequent face-to-face:

They were more likely to receive it within 6 months of the end of their first investigation period – this did not change following KTS commencement.

A face-to-face investigation as part of a child's first investigation was associated with an increased chance of receiving a subsequent face-to-face investigation.

After KTS commenced, children were slightly more likely to receive a subsequent face-to-face investigation if, during their first investigation, they did not receive a face-to-face investigation. Thus, the system is slightly more likely to increase its response if it did not respond adequately in the first instance.

Before and during KTS, children were more likely to receive a subsequent face-to-face if they received a face-to-face in their first investigation.

7. Ascertain the extent to which age, Aboriginal status, known prior history and characteristics of their first investigation are related to progression to a face-to-face investigation

Given the overall re-report rate was low amongst our analysis groups, few children were observed to have a face-to-face investigation after their first investigation. Amongst the children who did receive a face-to-face and once follow-up time and the influence of known competing factors were accounted for:

- Aboriginal children had twice the chance of receiving a face-to-face investigation after their first investigation than non-Aboriginal children, and this increased following KTS.
- Age only had a strong influence on the chance of receiving a face-to-face investigation after the first investigation once Aboriginal status and type of investigation were accounted for, with major decreases in the likelihood of receiving a new face-to-face for children who tended to be older at the time of the initial investigation.
- Although there was less of a chance of receiving a subsequent proxy-ROSH report amongst children who were reported for sexual abuse in their first investigation, there was an increased chance they would receive a subsequent investigation involving a face-to-face assessment. There was also a slightly increased chance of a subsequent face-to-face amongst those who were first reported for neglect, and a slightly decreased chance of a face-to-face following a first investigation that involved domestic violence.

8. Assess the extent to which children progressed to an OOHC episode following their first investigation and the extent to which age, Aboriginal status, known prior history and characteristics of their first investigation are related to OOHC entry

The absolute numbers of children placed in OOHC⁴ following their first investigation is very low, and particularly low amongst Aboriginal children, so these results should be interpreted with some caution. Results may appear to be stronger than they would be had we observed a larger group of children.

- The overall likelihood of entering OOHC is very low, even for Aboriginal children.
- KTS is associated with an overall decrease in the number of children entering care for the first time after the completion of a first investigation.

⁴ As noted above, due to the differences in reporting patterns and complexity around attribution for children in care we have removed the small number of children who were placed in care during their first investigation – this is only an analysis of the chance of a child being placed in care for the first time following their first investigation.

- Having had a face-to-face assessment during the initial investigation increased the likelihood of having a subsequent placement in OOHC for pre-KTS children, but this effect was not nearly as strong for KTS children. KTS children who did not have a face-to-face assessment in the initial investigation period were less likely to have an OOHC placement than KTS children who had a face-to-face and pre-KTS children whether they had a face-to-face or did not have a face-to-face.
- Younger children were far more likely to enter care compared to older children.
- Aboriginal children were more likely to enter care regardless of KTS or whether they had a face-to-face during their first investigation.

Discussion



A complex social intervention generally requires sophisticated research methods in order to ensure it is comprehensively and rigorously evaluated. KTS is no exception. The unit record analysis is an important component of the overall evaluation, lending to it a sophisticated investigation of the extent to which observed changes in child protection outcomes can be attributed to KTS. The unit record analysis has a unique role in the quantitative evaluation of KTS. While other evaluation components used point-in-time estimates or time series to ascertain the success of the initiative, the unit record analysis used individual-level information to monitor children's progress through the child protection system before and after the implementation of KTS.

Additionally, the evaluation team selected a unique subset of children to examine the effect of KTS in order to maximise our ability to attribute changes in outcome to KTS, namely children who had no prior history of reports to the Helpline that would have crossed the ROSH threshold. In essence, this group of service recipients enables us to establish what it is like for children at the beginning of their service history and what is likely to occur for them in the near term.

The comparison of pre-KTS and during KTS, enables us to better isolate the effect of KTS independent of a number of other systems changes as well as the effects of exposure to the system prior to KTS implementation. Multivariate event history analysis was used to determine independent contribution of KTS to a host of important child protection outcomes.

CWU Analysis

The component began with an analysis of the pathways of children assessed at lower risk, post-KTS, who were diverted to the CWU. Pathways of children seen for the first time at the CWU were examined with respect to their basic demographic characteristics (age, Aboriginal status), their prior child protection history, and two types of recurrence: a new CWU event and a new Helpline report that exceeded the threshold for ROSH.

We found that the majority of children seen at the CWU for the first time do not go on to have either a new CWU event or a ROSH report following their first CWU event. This indicates that the CWU may be playing an important role in terms of facilitating services for children who are initially screened out of the statutory child protection system.

The multivariate analysis revealed some key findings. First, prior history was a major predictive factor for both subsequent CWU events and ROSH reports. Moreover, both types of recurrence were most likely to occur within the first six months of the original event. Clearly, the time to intervene with preventive services is either before the first event or just after. Age was an important factor for new ROSH reports, but it was not nearly as important a factor for new CWU reports. Older children were less likely than younger children to have a subsequent ROSH report. In all likelihood, this reflects both the system's increased efforts to focus on younger children as well as substantial differences in age-related risk of harm. Aboriginal children were much more likely to both experience a new CWU event and were also more likely to be reported at ROSH following their first investigation at CWU.

Reports analysis

Our analysis focused on two separate groups of children: those reported at a proxy for ROSH for the first time pre-KTS, and those reported at ROSH for the first time during KTS. Neither group was known to CS prior to meeting these criteria, and both groups were followed after their initial investigation to observe whether they experienced a subsequent ROSH report, face-to-face investigation, or OOHC entry.

KTS was associated with an increase in the proportions of children who received a face-to-face as part of the investigation into their first ROSH report, and this was particularly true for younger children. Overall, this group of children was far less likely to have a subsequent ROSH report than was the case for the broader population of reported children, many with known histories (as detailed in the indicators section of the evaluation). Recurrence of a new report at ROSH and placement into OOHC were more likely to occur during the first 6 months after the initial investigation, again pointing to a prime spot for secondary prevention services.

Overall, KTS was associated with a decrease in the chance of being re-reported at ROSH, an increase in the likelihood of receiving a face-to-face investigation following a child's first investigation, and a decrease in the chance of being placed in OOHC. However, the likelihood of experiencing a new ROSH report or placement in OOHC substantially increased when children actually did receive a face-to-face visit during the course of their initial investigation. Children receiving a face-to-face visit in the initial

investigation were more likely to be seen in a subsequent investigation both before and during KTS. Although somewhat counterintuitive, this is likely due to the fact that those selected for face-to-face visits that do not get placed in OOHC during the initial investigation tend to be more serious cases with higher levels of risk of recurrence. Surprisingly, receipt of a face-to-face visit during KTS made only a small difference in the likelihood that children would experience a new ROSH report or placement in OOHC, indicating that screening procedures could be substantially improved (perhaps by better utilising reliable and valid tools earlier in the assessment process).

One of the big stories with this analysis is the fact that placement in OOHC was very rare for this group of children, and this was true both before and after the implementation of KTS. Much of the increases in the number of children in OOHC in NSW have likely involved: 1) children with extensive histories (i.e., numerous ROSH reports, entries to care, etc); or 2) lengthy spells in care without restoration; or 3) both. The decrease in entry of children into OOHC for the KTS group, though small in actual number, is a trend worth noting. Few interventions in child protection tend to produce such strong results.

As with most other child protection analyses, Aboriginal children tended to be more likely to experience any and all of these outcomes. However, the proportion of the very small number of children who entered OOHC during their first investigation dropped, and it dropped more for Aboriginal children indicating a trend toward closing the gap on this important measure. However, the chance of entering care as an Aboriginal child was still very high even after accounting for the decreased likelihood of entry associated with KTS.

Interestingly, KTS was also associated with an increase in the proportion of reports with sexual abuse as a primary reported issue, although there is a lower prevalence of these reports compared to other types of reported issues. Amongst children reported for sexual abuse (during their first investigation), KTS was associated with a lower chance in receiving a new ROSH report, but a higher chance of receiving a face-to-face investigation following the completion of their first investigation. These findings might reflect a belief that child sexual abuse is more serious than other forms of maltreatment or may also be a function of mandatory reporters trying to 'game' the system if they know that there is likely to be an increased likelihood of response to child sexual abuse. There is a concern that this finding is an artefact of the system rather than a function of maltreatment since children are less likely to have a recurrence and are less likely to enter care, but are more likely to have a face-to-face.

Implications

This analysis of children exposed for the first-time to child protection has a number of implications both for the overall child protection system and with respect to the success of KTS. More attention is being given to younger children which, if effective at preventing future harm, will yield major positive benefits in the future. While the performance indicators for the broader population reflect fairly high recurrence rates for new ROSH reports the rate of subsequent ROSH reports is far lower in this sample, especially for KTS. If they do not return, they cannot progress through the system. Similarly, the rate of placement into OOHC, particularly for Aboriginal children in the KTS group, is very low and, if maintained, will lead to decreases in the number of children residing in OOHC over time. The early time to recurrence of ROSH and OOHC point to the implementation of secondary prevention efforts that occur during the initial investigation.

The number of ROSH reports is still quite large and indicates that efforts to reform the system have only just begun to take root. Furthermore, there may need to be a redoubling of effort to ensure that these early gains are maintained and improved upon. Some of the differences in findings between this sample and broader samples that involve children previously exposed to the child protection system may indicate that mandatory reporters have developed strategies to prompt an investigatory response from a system that is perceived to be unresponsive. Efforts to undo this perception are crucial if the correct response is to be provided and future evaluations are to detect the signal from the noise.

The number of Aboriginal children involved with the child protection system, although improving in some areas, is still unacceptably high. While a good deal of child protection involvement may have its origins in the large structural inequities experienced by Aboriginal children and families in NSW and Australia, more needs to be done to support these families through difficult times.

In particular, more attention needs to be paid to whether services are effective for specific children and families experiencing specific problems or combinations of problems. The data contained in the unit record analysis, while powerful, does not contain any information on the types of services received or on the actual well-being of children. The next step in the evolution of NSW child protection should involve the increased use of reliable and valid tools that more accurately get at risk of recurrence and, more importantly, screen for specific problems. Additionally, assessment tools that can accurately measure children's functioning, over time, are sorely needed. Combining these other sources of information with existing administrative data can yield increasingly sophisticated evaluations and real-time adjustments to the service mix. Coupled with effective interventions, implemented well, these steps are bound to lead to continued improvement in outcomes for children and families.

Appendix A

Data structuring steps and detailed criteria for inclusion –

CWU analysis

A number of steps were taken to clean and structure the data for analyses that are specific to the KTS evaluation. The rationale for these steps was either practical (i.e., the structure or content of the data only allowed us to look at things in certain ways) or methodological (i.e., certain biases, such as longer observation windows for children seen at the beginning of an observation period as compared to children seen toward the end, can be controlled for through the ordering or augmenting of records). In an effort to be transparent, these decisions are detailed here. It is important to note that these decisions may lead to different results than were found in previous studies or reports.

1. The dataset referring to events and appraisals was used as the source for this analysis. This was linked to CS reports data for parts of the analysis. These were imported into the statistical package SAS 9.4 for analysis.
2. The first report for a child was selected as the starting point for the analysis. The first episode was determined to be the first event start date within each individual child's records. Within this CWU event, the first recorded appraisal was selected.
3. Age at first event was computed as the child age at the CWU episode start date. Children with no date of birth (DOB), or who had a DOB outside of the range (-1 (unborn) to 17 years) were retained unless otherwise specified. However, their ages were labelled as 'Unknown/Invalid'.
4. Financial year of event is the financial year in which the first appraisal within the first CWU episode occurred.
5. CWUs did not begin to operate until January 2010. Therefore, data for the 2009/2010 represents only six months.
6. Each CWU event can contain many appraisals, each with a different end date. Many of these overlap. In order to ascertain whether a new CWU event occurred after the initial event (rather than continuing work related to the initial event) we artificially substituted an initial event end date as occurring 30 days from the initial event start date.
7. Prior known history was obtained by ascertaining whether a child common identifier in the CWU database was present in our CS data (our records include all reports streamed in to CSC dating back to 1999). If a screened-in report about an individual child with the same child identifier was made prior to the initial CWU appraisal date, then the child was considered 'known' prior to the initial CWU appraisal. Children who had interactions with CS subsequent to the initial CWU episode or who were not counted as 'known'.
8. Subsequent CWU episode was defined as a new CWU episode that occurred 30 days after the initial CWU episode.

9. Subsequent child protection report streamed to CSC was established by examining the CS database for all streamed in reports that occurred after the initial CWU event end date (CWU event start date + 30 days) where there was a match of child common identifier. All matches using were sorted by date and the first report was selected. It is important to note here that the CWU data included information about whether the event led to a CS report. However, since we had the full CS reports data available, we based our analysis on this. As a result, our recurrences may include children who received a report that was not recorded in CWU. Likewise, we may miss some children who were reported in the CWU but were not, for some reason, recorded in the CS reports data.
10. We are in the position of analysing recurrence for a sample of children with different follow-up times. That is, some children had their initial CWU episode in 2010 while others had their first episode in 2012. All else being equal, children who were observed later had less of an 'opportunity' to have a recurrence. In order to use all of the information at our disposal and to control for this major methodological issue, we used event history analysis techniques. These allow us to observe each person's contribution of 'event free time' without imposing similar observation periods (i.e., following all children for only 12 months even though some children were observed for longer and some shorter). To this end, 'censoring' variables (i.e., dates where we stopped observing and the event had not yet occurred) were created.
 - a. Extract date (30 June 2013 to align with the CS reports data). This is the final observation for which the evaluation team had access. Children may have had a recurrence after this date, but that information is not included. This is still an unbiased estimate since what is being measured is time to an event rather than simply whether the event occurred.
 - b. Child age. A young person will not be observed after they turn 18, and the likelihood of receiving a report is very low for children 16 years or older, so ageing was accounted for in two ways. Firstly, children who turned 18 during the initial event period were dropped from the analysis. Secondly, for the life tables and Cox Proportional Hazards regressions, children 16 years and older at their first event date, or where their age was unknown, were omitted from the analysis (440 children, just under 1.5% of children with a valid age). Children who turned 16 during the observation period were retained however, and their observations were censored at their 16th birthday. These children were, however, retained for the basic descriptive analysis and are presented in their own row/rows.

Data structuring steps and detailed criteria for inclusion –

Reports analysis

As with the CWU analysis, the reports analysis involved a number of steps to clean and create data ready for analysis. The following section provides details about the choices we made and counting rules. Again, the rationale for these steps was either practical (i.e., the structure or content of the data only allowed us to look at things in certain ways) or methodological (i.e., certain biases, such as longer observation windows for children seen at the beginning of an observation period as compared to children seen toward the end, can be controlled for through the ordering or augmenting of records). In an effort to be transparent, these decisions are detailed here. It is important to note that these decisions may lead to different results than were found in previous studies or reports.

1. The unit record extract utilised for this analysis was comprised of two primary data sources: 1) a combined year-on-year file of all child protection reports received by the CS Helpline containing associated data related to child information and casework dates; and 2) a file that contained placement and demographic information on all out-of-home care placement from 1999 to 2013.
2. The first ROSH report for a child was selected as the starting point for the analysis. Prior to KTS commencing, a ROSH report was counted if it had a response level of <72 hours. After KTS commenced, reports with a response level of <10 days were included. Further detail about the rationale for this decision can be found in the reports method section.
3. The first ROSH report was determined to be the first event start date within each individual child's records. Children appear once in the analysis based on whether their first report date is prior to or post the KTS threshold change.
4. The first investigation period for a child was considered to be from the date of the child's first ROSH report until the plan closure date or 60 days, whichever occurred first.
5. Age at first event was computed as the child age at the CWU episode start date. Children with no date of birth (DOB), or who had a DOB outside of the range (-1 (unborn) to 17 years) were retained unless otherwise specified. However, their ages were labelled as 'Unknown/Invalid'.
6. Child must have their first observed interaction with the child protection system to be at Community Services
7. For the KTS cohort, child must not have an open investigation at the end of the file (30 Jun 2013)
8. For the pre-KTS cohort, the child must not have an open investigation at the start of the KTS reform period (24 Jan 2010)

9. A child must not have been reported to the CWU prior to being reported at a high level at CS (however if the child was first reported within 30 days of being first reported at CWU then they are included)
10. Child must have a valid DOB
11. Child must not be older than 16 when reported for the first time
12. Child must not have turned 16 between their first report and the censor date
13. Unborn children (subject of prenatal reports) are considered to be < 1