

Longitudinal trends in child protection statistics in South Australia

A study of unit record data

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In Australia, it is commonly reported that rates of child protection notifications have increased over time. More and more children in any given year are subject to a child protection notification. On the whole, these conclusions have been based on cross-sectional notification counts or rates recorded in a given year (e.g. AIHW 2009). Although useful, such analyses are limited in that they do not account for the fact that child protection incidents are unevenly distributed across individual cases. Cross-sectional analyses also do not indicate the incidence of notifications within a given cohort of children.

In this paper, we summarise the longitudinal and comparative analysis of data relating to children born in 1991, 1998 and 2002. The results highlight the increasingly early involvement of child protection systems in children's lives, higher annual incidence rates, as well as increasingly steep cumulative involvement curves for cohorts tracked from their year of birth. The implications of these findings for mandatory reporting policies are discussed.

It is well established from national compilations of child protection statistics that rates of child abuse notification have steadily increased over time (AIHW 2009; Holzer & Bromfield 2008). In 2000-2001, the total number of child protection notifications recorded in Australia was 118,471 and this increased to 317,526 by 2007-2008 (a 2.68-fold increase). During the same period, substantiations increased from 27,367 to 55,921 (a 2-fold increase). As Holzer and Bromfield (2008) point out, this overall pattern of increase disguises significant jurisdiction-specific variations in the rate of increase. Very large increases in some states (e.g. NSW) significantly influence overall national figures. In some states (e.g. Victoria and Western Australia), the relative increase in notifications has been smaller. These variations are due to a number of factors, including differences in counting rules, the definitions and thresholds of abuse, the availability of family support services and the way in which reporting is undertaken (see Holzer and Bromfield [2008] for a comprehensive review).

Increases in child abuse and neglect have significant costs to the community. In addition to the often unquantified physical and psychological consequences experienced by victims of abuse, child abuse directly influences the demand for government services. An increasing number of children enter the out-of-home care system via the child protection pathway. Much of the growth in numbers of children in the care system has occurred in the younger age cohorts, mostly notably in infant populations (age 0-2), and it is usually child protection concerns that have contributed to this form of statutory intervention. In support of this, the AIHW (2009) reports that the number of children on care and protection orders increased from 16,449 in 1998 to 34,279 in 2008 (just over a 2-fold increase).

Although it is often difficult to draw causal inferences from aggregate statistical data, it is generally accepted that a number of factors are likely, in combination, to have contributed to these trends. Across Australia, there has been a growing public awareness of child abuse and neglect (how to recognise and report it); more stringent mandatory reporting requirements that extend to a wider range of notifiers; greater awareness of the long-term impacts of abuse; and highly publicised media accounts of institutional abuse (Braithwaite, Harris & Ivec 2009; Delfabbro 2009;

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Holzer & Bromfield 2008; Mulligan 2008; Scott & Swain 2002). More broadly, it is recognised that a number of social and economic factors have conspired to increase the complexity of problems experienced by families with children. Despite low unemployment and interest rates in Australia over the last decade, there has been a growing concentration of hardship in many areas caused by a combination of poverty, family disruption, substance abuse and domestic violence. Together these factors have created home environments that are more likely to lead to child abuse or the potential for child abuse (Australian Senate 2005; Barber & Delfabbro 2004; Crime and Misconduct Commission 2003; Layton 2003; Victorian Department of Human Services 2003).

QUANTIFYING CHILD PROTECTION EVENTS

In almost all analyses of child protection data (AIHW 2009; Holzer & Bromfield 2008), conclusions concerning longer-term trends are usually based on the comparison of static cohort data from different jurisdictions in particular financial years. In such analyses, researchers examine the total number of notifications, investigations and substantiations recorded for these reporting periods. As well as notification events, some reports (e.g. AIHW 2009) also present the number of children who have experienced at least one notification. Since some children have more than one notification or other event, the total number of children is typically lower than the total notifications. For example, in 2007-08, the total of 317,526 notifications Australia-wide related to 195,387 children (1.63 notifications per child) and 55,120 substantiations referred to 32,098 children (1.72 per child). Further insights are obtained when these aggregate statistics are converted into base-rates by dividing by the total number of children aged 0-17 in the Australian population or in a particular jurisdiction. These rates, often expressed as a rate of event/1000 children, indicate the proportion of the population which has come into contact with the child protection system at least once during the financial year period. Such statistics therefore provide a cross-sectional index of the prevalence and incidence¹ of child abuse in the general community and the degree to which it has been detected, investigated and/or substantiated.

Although comparisons of these cross-sectional figures are useful, such analyses have a number of important limitations. First, when one counts cases from one year to the next, it is possible that many of the same children are counted in different years. Therefore, old and new contacts with the system are combined in the same counts. Such

analyses do not indicate the incidence of new cases each year. Second, when base-rates are calculated by dividing by the total population aged 0-17 years, the rates cannot be related to specific ages. That is, because the overall population figures do not reflect the true size of each age cohort, one cannot indicate what proportion of children aged 2 or 3 will have come into contact with the system. A third difficulty is that it is not possible to examine the growing influence of the system on children over time, or at what age children are most likely to first come into contact with it. For example, at what age do children first receive a notification and how many children have received notifications by a certain age?

Accordingly, as Holzer and Bromfield (2008) point out, a more detailed and potentially insightful understanding of child protection trends might be obtained if analyses could be conducted using specific cohorts of children tracked over time. As they point out:

research employing a longitudinal methodology drawing on statistical local area data and unit record data for each jurisdiction would provide the most fruitful examination of these issues (p. X).

By using longitudinal methods in which specific birth cohorts of children are tracked over time, it may be possible to gain a greater understanding of the incidence of child protection events in different time periods, the age at which they occur, and their prevalence over time.

The purpose of this paper is to summarise the findings of a study that examined child protection trends using longitudinal data drawn from South Australia. In this study, data were drawn from children born in different years (up to over a decade apart) to allow comparative analyses of longitudinal trends commencing at different points in time. It was hypothesised that, if cross-sectional analyses are correct, then one could observe a differentiation of patterns for the different years under consideration. Children who were born in later (i.e. in more recent) years would attract notifications at a faster rate and at a younger age, so that one would observe a greater accumulation of notifications after X years from birth in later age cohorts than in earlier ones. In presenting these findings, the study would also provide insights into the rate at which notifications accumulate over time and at what age children are most likely to have received them.

CHILD PROTECTION IN SOUTH AUSTRALIA: BRIEF OVERVIEW

A brief history and summary of the South Australian system is provided to place this study into context and to show what conclusions have been drawn from conventional analyses. South Australia has a long history of statutory involvement in child protection. Although current policy and practice is informed by the *Child Protection Act 1993*, many provisions

¹ 'Prevalence' refers to how many members of a population share a characteristic at a particular point in time (e.g. a history of notification), whereas 'incidence' refers to the number of new cases in the population that come to acquire this characteristic over a certain period of time (e.g. X new cases notified over a period of Y years).

predate this legislation. For example, a form of mandatory reporting has been in operation since the early 1970s that has required many individuals, including medical practitioners, teachers, social workers and other professionals, to notify authorities if child abuse is suspected (Layton 2003). Notification numbers were further influenced by policy changes; for example, in 2000 when police were required to notify authorities if they encountered children living in situations where family violence was present. In 2006, an addendum to the Act extended notifier requirements to ministers of religion as well as people working, or volunteering, in religious, sporting and recreational organisations, and these provisions have been further extended following the findings of the Mulligan Inquiry into abuse in care (2008). South Australia has also a nurse home visitation scheme that can also increase the likelihood of vulnerable families and cases of abuse being detected very early in a child's life.

Since 1997, the response of the SA Department for Families and Communities to notifications has been based on a differential response, or tier system. Tier 1 relates to situations where the child's life or wellbeing is reported as being under immediate threat. Tier 2 refers to situations where children are reported as being at significant risk of harm, whereas Tier 3 relates to situations where the child is not reported to be at significant risk in the short-term, but the

family situation is adversely affecting children's wellbeing. Tier 1 and Tier 2 level notifications receive an investigatory response whereas Tier 3 receive a 'non-investigatory' response that focuses on the needs of families and children rather than trying to confirm whether abuse has occurred. The 1997 reforms also led to the formation of a central intake team and a 24-hour central intake line that facilitated the processing of incoming notifications.

Most published figures (e.g. AIHW 2009) provide details of changes that have occurred over the last decade rather than back to the early 1990s, but these figures are nonetheless instructive. An inspection of cross-sectional data (Figures 1 and 2) shows that the number of notifications in South Australia has increased dramatically in the last 8 years from 9,988 in 2000-01 to 20,847 in 2007-08. Substantiated abuse rates increased to a much lesser extent from 1,998 to 2,331 over the same period. This slower rate of growth may be due to a variety of factors, including changes in the threshold of abuse required for Tier 2 and 3 classifications, a lack of resources to mount investigations, or the introduction of a greater number of family support services (see Holzer & Bromfield 2008).

METHOD FOR LONGITUDINAL ANALYSIS

Sampling procedure

The data for this study were drawn from the South Australian Families SA Client Information System in late 2007. This system records details of child protection notifications along with identifiers that allow the differentiation of individual children. All children who had received their first notification in 1991, 1998 and 2002 were selected for inclusion in the analysis. Data were available up until the end of 2006. The first year (1991) was chosen because it represents the first year when comparative system data first became available in South Australia; 2002 allowed data tracking for five years to allow comparative analysis of trends; and 1998 provide an intermediate year that was at the approximate midpoint of the other two starting points. The year 1998 was also the first year after the introduction of the tier system that differentiated the urgency of the child abuse allegations.

Available data fields

Using this system, it is possible to determine the notification history of individual children, the age at which each notification occurred, the type of abuse involved, and the outcome of the notification (investigation conducted, abuse confirmed/not confirmed). The types of abuse that lead to notifications fall into several categories: physical (non-accidental act inflicted on a child which results in a physical injury), sexual (child is a recipient of inappropriate sexual behaviour or is inappropriately exposed to sexual behaviour), neglect (any serious omission or commission by

Figure 1: Cross-sectional count of notifications 2000-01 to 2007-08 in South Australia

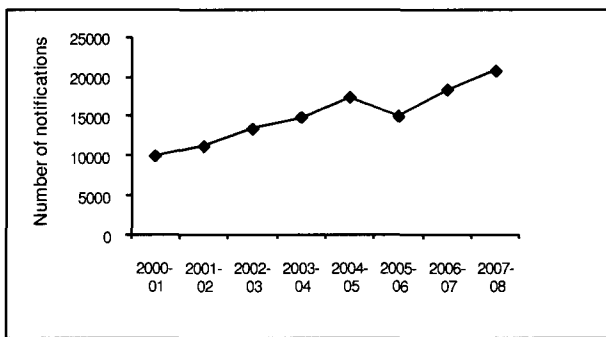


Figure 2: Cross-sectional counts of substantiations 2000-01 to 2007-08 in South Australia

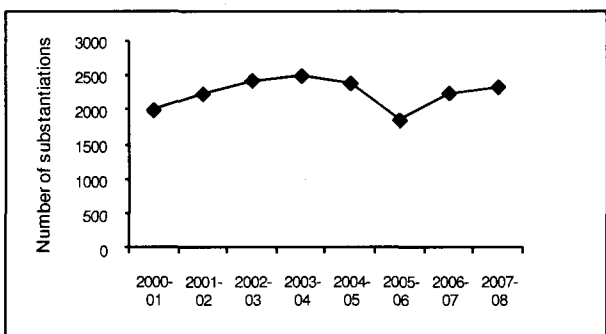


Table 1: Number of children with their first notification in each year between the 3 cohorts*

Years after birth year	Birth Year		
	1991 (N=19622)	1998 (N=18613)	2002 (N=17623)
0	96	320	545
1	202	390	517
2	256	348	457
3	276	337	459
4	287	399	441
5	279	388	
6	320	419	
7	320	355	
8	262	398	
9	287		
10	319		
11	313		
12	287		
13	302		
14	278		
15	322		

* As at January 2007

Table 2: The cumulative percentage of children with a CP notification for each year after birth year between the 3 cohorts

Years after birth year	Birth Year		
	1991 (N=19622)	1998 (N=18613)	2002 (N=17623)
0	0.5%	1.7%	3.1%
1	1.5%	3.8%	6.0%
2	2.8%	5.7%	8.6%
3	4.2%	7.5%	11.2%
4	5.7%	9.6%	13.7%
5	7.1%	11.7%	
6	8.7%	14.0%	
7	10.4%	15.9%	
8	11.7%	18.0%	
9	13.2%		
10	14.8%		
11	16.4%		
12	17.9%		
13	19.4%		
14	20.8%		
15	22.5%		

a person that jeopardises or impairs a child’s psychological or physical development.

It was possible to compare all the child protection data against the total number of live births recorded for South Australia in the same years as recorded by the Pregnancy Outcome Statistics Unit at the Department of Health, South Australia. The number of live births in SA was 19,622 in 1991, 18,613 in 1998 and 17,623 in 2002.

RESULTS

As indicated below, the principal analytical approach was to consider children born in 1991, 1998 and 2002. The total number who had a child protection notification was then tracked over time and described as a cumulative distribution. Notification percentages and rates were then calculated based on the number of children in the respective birth cohorts and, as explained below, using indices based on the total number of person years to account for the different durations of the tracking periods for each cohort.

Cumulative notification rates

The number of children who had received at least one notification for alleged child abuse or neglect in each of the three birth cohorts (1991, 1998 and 2002) is summarised in Table 1. Table 2 converts these figures into a cumulative percentage by summing the progressive totals (e.g. 96 + 202/19,622 = 1.5% for + 1 years in the 1991 cohort). A further graphical depiction of these cumulative percentages is provided in Figure 3.

The data clearly show that children in the more recent birth cohorts are increasingly more likely to have been notified by a given age. This difference is most strikingly observed in the infant cohorts. Infants (children aged 0-2 years) born in 2002 are 3.1/1.7 = 1.8 times more likely to have been the subject of a notification than those born in 1998, and 3.1/0.5 = 6.2 times more likely than those born in 1991. By the age of 4, the cumulative rate is almost two and a half times higher for 2002 children than 1991 children. If these trends observed for the 1998 and 2002 cohorts continue, a significantly higher proportion of these children will have been notified by age 15 than those born in 1991.

Figure 3: Cumulative percentage of children with a notification for children born in 1991, 1998 and 2002

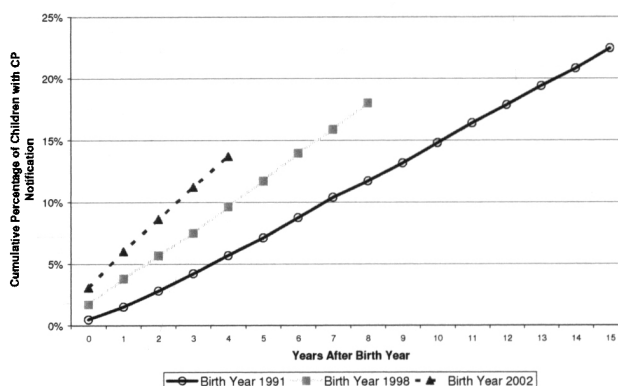
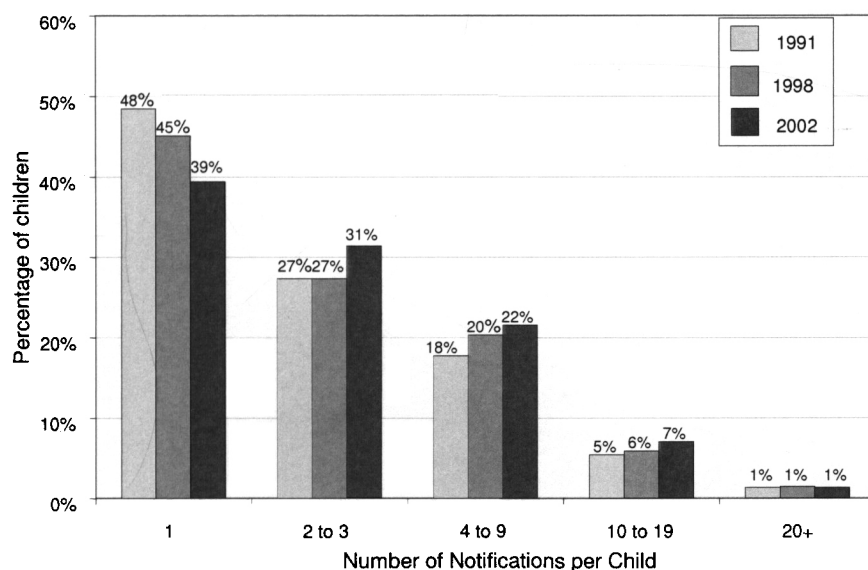


Figure 4: Distribution of number of notifications per child within cohorts



Notification rates per child

There is also evidence that the total number of notifications per child is increasing. Thus, children aged 5 (born in 2002) have more notifications in their lifetime than those born in 1991 (Figure 4). At the time of the data extraction, the mean number of notifications per child was: 3.1 for children born in 1991, compared to 3.4 for children born in 1998 and 4.1 for children born in 2002.

The average number of notifications per year and average number of notifications per child per year between the 3 cohorts is shown in Table 3. The average number of notifications per year has almost doubled for children born in 2002 compared to children born in 1991. Further, the average number of notifications *per child per year* has increased by 3.6 times.²

Notification outcomes

As might be expected given the increase in notifications, there has also been an increase in the number of children born in 1998 and 2002 who have had abuse investigated and substantiated (Table 4). The calculations in Table 5 are based on the total number of each outcome (Column 3) and the total number of person years. The person years is calculated based on the total number of children in each live-birth cohort multiplied by the number of years of tracking that applies to each cohort (16 years for 1991, 9 for 1998 and

² The average number of notifications per child per year was 0.20 notifications (Table 3). This indicates that children with a notification born in 1991 would on average experience 0.2 notifications in a 1 year period (or 1 notification in a 5 year period). The average number of notifications per child per year was 3.6 times higher for children born in 2002 and 1.9 times higher for children born in 1998 compared to children born in 1991.

5 for 2002). It is calculated to allow comparisons between cohort tracking frames of different duration. For example, for 1991, there were 19,622 live births and therefore $19,622 \times 16 = 313,952$ person years. If 2187 (the number of investigations for 1991) is divided by 313,952 and multiplied by 100, this yields the percentage of person years with a notification event. A figure of 100% would mean that every child in the live cohort had been investigated in every year.

Based on these calculations, the results show that children born in 1998 were found to be 1.3 times more likely to have an investigation and 1.2 times more likely to have at least one substantiation of abuse compared to those born in 1991. Children born in 2002 were 1.8 times more likely to

have an investigation and 1.6 times more likely to have a substantiation compared to children born in 1991. An average of 69 children per year born in 1991 experienced a substantiation of abuse, compared to 77 children per year (1998 cohort) and 99 children per year (2002 cohort).

However, the increase in the number of children in each cohort who have abuse substantiated does not necessarily mean that there is also an increase in the proportion of notified children for whom abuse is substantiated. Rather, whilst the increased number of children with a notification may lead to an increase in the total substantiated abuse, this appears to be accompanied by a decrease in the proportion of total notifications that are both investigated and substantiated (Table 5). As indicated in the top part of Table 5, the proportion of notifications that was investigated changed little between 1991 and 2002 (49.6% down to 45.6% in 2002). Similarly, the substantiation rate only decreased from 24.9% to 20.1% of total notifications from 1991 to 2002. However, when one looks at the actual number of children in the birth cohort, the investigation rate can be seen to drop from 11.1% to 6.3% from 1991 to 2002. In the same period, the substantiation rate halves from 5.6% to 2.8%. The difference between the upper and lower parts of Table 5 exists because the top part of the table relates to total reports (that may involve many children multiple times) whereas the lower part of the table refers to individual children in the birth cohort. Many substantiations may involve the same families or children already subject to multiple notifications rather than a larger number of children in general being investigated and having substantiations.

Table 3: Summary of total number of notifications between cohorts

Year of birth	Total number of notifications	Study Period (years)	Average notifications per year	Children with a notification	Average notifications per child per year
1991	13813	16	863	4410	0.20
1998	11435	9	1271	3382	0.38
2002	8569	5	1714	2452	0.70

Table 4: Number of children and rate of children with at least 1 notification outcome per 100 children per year between cohorts

Notification Outcome	Year of birth	Number of children with at least 1 outcome	Person-years (live births)	Rate with outcome per 100 children per year
Investigation	1991	2187	313,952	0.70
	1998	1466	167,517	0.88
	2002	1120	88,115	1.27
Substantiated Abuse	1991	1097	313,952	0.35
	1998	692	167,517	0.41
	2002	494	88,115	0.56

Table 5: Percentage of children with at least 1 notification outcome within each cohort

	Year of birth		
	1991 (n=4,410)	1998 (n=3,382)	2002 (n=2,452)
Base (total notifications)			
Investigation	49.6	43.3	45.6
Substantiated Abuse	24.9	20.5	20.1
Base (total birth cohort)	1991 (n=19,622)	1998 (n=18,613)	2002 (n=17,623)
Investigation	11.1	7.9	6.3
Substantiated abuse	5.6	3.7	2.8

DISCUSSION

Before undertaking this research, cross-sectional analysis was already available (e.g. AIHW 2009) to show that the number, and proportion, of children receiving child protection notifications has been increasing over the last decade. According to the AIHW, child protection notifications doubled over the last decade (see Figure 1). The figures presented in this paper are generally consistent with this view, but also show that this increasing trend extends back almost 20 years. As shown in Table 2, around 4% of children born in 1991 received at least one child protection notification by the age of 3 as compared with 7.5% for the 1998 cohort and 11.2% for the 2002 cohort. In other words, children born after the millennium are over 2.5 times more likely to be subject to notifications than their counterparts a decade earlier. Such differences are perhaps not surprising given that this period encompassed several important changes in child protection legislation. These changes included the strengthening of mandatory reporting provisions in the *Children's Protection Act 1993*, the

introduction of the tier system in 1997 and the requirement for police to file notifications for situations involving domestic violence from 2000 onwards (Holzer & Bromfield, 2008).

The findings here also indicate that much of the increase in notifications appears to apply to infants (0-2 year olds). Both Table 1 and Table 2 show that the child protection system is not only more likely to have a greater involvement in children's lives, but also appears to be intervening when children are younger. For example, as shown in Tables 1 and 2, when one compares the percentages across time, proportionately greater differences in percentages are evident for very young children than for those who are older. These results are also generally consistent with conclusions drawn by the AIHW (2009) and Holzer and Bromfield (2008) in comparisons of cross-sectional results drawn from the annual AIHW data collection, but additionally show how these differences have developed over time and as children grow older. The relatively high rate of notifications for infants also accords with analysis of out-of-home care populations which show that an increasing number of children are entering care via the care and protection pathway and that there has been a disproportionate growth in the number of infants in care (Delfabbro, Borgas, Rogers, Jeffries & Wilson 2009). Such growth in infant numbers by no means represents a failure in either practice or policy, but represents a growing recognition of the critical importance of early development, the vulnerability of infants, high birth rates in what are considered 'high-risk' families, and the long-term psychological and physical benefits of early interventions. In recognition of the importance of the early years, policies and programs have been introduced to increase the likelihood of problems being detected in these

early years (e.g. nurse visitation and other early intervention programs).

The most significant feature of the present study's results is the cumulative influence of the child protection system over time. Although the durations for each cohort are different, the functions are monotonic and approximately linear (i.e. the rate is increasing reasonably consistently across time). Almost a quarter of children born in 1991 had at least one notification by the time they were 16. This figure is likely to be exceeded by the 1998 and 2002 cohorts when children are a significantly younger age (Figure 3). Extension of the functions plotted in Figure 1 suggest that, even allowing for some decreases in the rate of increase over time, it is highly likely over 30% of the total population born in the State in 2002 may have a child protection notification by the time they are 18 years of age. Clearly, not all of these notifications are occurring in the same year, but the figures are so high that it leads to either one of two conclusions: that child abuse and neglect is rampant in South Australia or that the criteria and processes used to make a notification are overly inclusive.

As shown by other findings presented in this paper, it does not appear that higher rates of notification necessarily translate into increases in investigations or substantiations. In fact, the number of investigations and substantiations applying to individual birth cohorts has declined by almost the same amount that notifications have increased. As Holzer and Bromfield (2008) point out, some of this decline may be due to effective policy and practice in South Australia. Nurse visitation programs, early intervention, and prevention services to parents with difficulties can reduce the need for some investigations. However, it could also be that the slower growth in investigations and substantiations reflects a shortage of resources necessary to investigate all cases (e.g. Tier 2 cases) where more significant suspicions of abuse exist.

In either case, the data suggest that the mandatory reporting system as it is presently designed is giving rise to an extraordinarily high number of notifications that often do not require formal action by child protection agencies. Many of these cases have either been dealt with through early intervention services, been found to be less serious than initially alleged, or could have been dealt with by broader child and family services (e.g. housing, income support, substance abuse treatments, legal services) rather than statutory child protection services. In this sense, the findings are consistent with the current impetus for the stronger application of public health principles to child protection matters (Scott 2006) in which detection of less serious problems (e.g. as might typically apply to Tier 3 and some Tier 2 level notifications) is associated with service provision to families rather than a statutory child protection response. Such principles have recently been put into practice in New South Wales in reforms implemented by the

Department of Community Services (DoCS), although the outcomes of these changes will not be known for some time. The findings presented here provide further evidence to support this policy direction and its potential benefits to the South Australian system. ■

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