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Article Title: Healthcare use by children fatally or seriously harmed by child maltreatment : analysis of a national case series 2005-2007

Year of publication: 2011

Link to published article:

<http://dx.doi.org/10.1136/adc.2010.190314>

Publisher statement: Woodman, J., Brandon, M., Bailey, S., Belderson, P., Sidebotham, P. and Gilbert, R. (2011). Healthcare use by children fatally or seriously harmed by child maltreatment : analysis of a national case series 2005-2007. *Archives of Disease in Childhood*, 96(3), pp. 270-275.

Healthcare use by children fatally or seriously harmed by child maltreatment: analysis of a national case series 2005–2007

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Accepted 31 October 2010

Published Online First
17 January 2011

ABSTRACT

Aim To determine antecedent patterns of healthcare use by children fatally or seriously harmed by maltreatment.

Methods The authors analysed recorded healthcare use for children who were the subject of a serious case review (SCR) in England in 2005–2007. The SCRs were initiated when a child under 18 years old died or was seriously harmed, maltreatment (abuse or neglect) was a factor, and there were lessons for interagency working. The authors analysed a purposive sample (N=40), similar in key demographics to all 189 SCRs in England in 2005–2007.

Results Children had extensive recorded contact with universal (N=34/40; 85%) and secondary (N=26/40; 65%) healthcare services and children's social care (N=21/40; 53%). Thirty-one children (78%) had recorded health visitor and/or school nurse contact. Fourteen children (35%) had missed appointments. Almost three-quarters (N=29) had complex family problems recorded (parental domestic violence, alcohol/drug and/or mental health problems). Data quality regarding healthcare use was poor, and the extent and type of 'missing data' varied by age.

Conclusions Complex paediatric and family problems and a high level of contact with services preceded serious adverse events. Universal health services are likely to be well placed for giving ongoing and family-orientated support to vulnerable families. The absence of standardised data collection and any control group limits how far the Biennial Analyses of SCRs can meet their stated objective of identifying national trends and patterns. Linking SCRs to healthcare databases would provide a control group, improve understanding of the population context and diminish demands for data from professionals delivering care.

INTRODUCTION

High-profile investigations into individual cases of child death from maltreatment in England have shown that children and their families had multiple antecedent contacts with health services.^{1–2} Current evidence suggests that, compared with controls, maltreated children have an approximately twofold increased risk of presenting once or more to emergency departments (EDs) and primary care services,^{3–8} are twice as likely to have inconsistent or incomplete primary care provision,^{5–9–10} are between one and three times more likely to be receiving healthcare services for developmental or speech delay, autism or cerebral palsy,^{11–12} and are between two and four and a half

What is already known on this topic

- ▶ High-profile investigations into cases of child death following abuse and neglect have revealed multiple antecedent healthcare contacts.
- ▶ Information is lacking on whether these patterns apply to seriously maltreated children overall.

What this study adds

- ▶ Complex paediatric and family problems and a high level of contact with services preceded death or serious injury in children who were the subject of a serious case review.
- ▶ Poor data quality found in serious case reviews could be addressed by linkage to routine healthcare databases and would reduce demands on professionals.

times more likely to ever use healthcare services for behavioural or psychological problems.^{6–11–13} Less is known about maltreated children's use of both health and social care services.

We evaluated patterns of healthcare prior to a serious adverse event in a nationally representative case series of children who died or were seriously harmed due to maltreatment. The findings can be used to generate hypotheses about service needs and patterns of service use by severely maltreated children.

METHODS

We investigated antecedent patterns of healthcare use and social care contact in children who died or suffered serious harm following maltreatment, using the national sample of children who were the subject of a serious case review (SCR) in England between 2005 and 2007.^{14–16} See figure 1 for methods and table 1 for details of variables extracted. We could not investigate healthcare contacts as a marker of a serious event, as SCRs do not include a comparison group.

We extracted data from the overview reports (a part of the full SCR; see figure 1). We did not have access to children's health records or to more detailed information analysed locally. To preserve anonymity, we grouped children into age bands,

ordered from youngest to oldest within the bands (table 1). Of 189 SCRs conducted between 2005 and 2007, 63 overview reports were supplied to the research team undertaking the Biennial Analyses (figure 1).¹⁴ The completeness of the 63 overview reports varied considerably. All analyses presented here are based on the intensive sample of 40 children (figure 1).

RESULTS

The ages of the 40 children in the study ranged from birth to 17 years old. Two-thirds (N=26; 65%) were 5 years or younger at the time of the incident (table 1). The four youngest children were less than 24 h old (N=2) or less than a week old (N=2). Half the children (N=20) were boys. Seventy per cent (N=28/40) died, and 30% (N=12/40) were seriously harmed. No children were related.

Universal (primary) healthcare services

Eighty-five per cent of children (N=34/40) were recorded as using at least one universal healthcare service (table 1, figure 2). However, 14 of 34 (42%) of children in contact with universal care services had some missed antenatal or immunisation/well-baby appointments. For 10% of children (N=4/40), the health visitor or school nurse was the only recorded universal healthcare service.

Reported health problems and use of secondary care services

Of 18 children (N=18/40; 45%) with a health problem recorded (table 1), one had only a 'minor' problem, eight had low birth weight, seven were admitted to the Special Care Baby Unit,

and seven had neurological or behaviour problems. Three children had two or more of these problems.

Half of the children (N=21/40; 53%) were receiving follow-up from secondary healthcare services at the time of the incident (table 1), of which three-quarters had recorded follow-up by a paediatrician (N=16/21; 76%). Of all 40 children, only 15% (N=6) were recorded as receiving follow-up from Child and Adolescent Mental Health Services. Half of the 40 children (N=22; 55%) had recorded admissions to hospital or Emergency Department attendances (table 1). Two-thirds of the children (N=26; 65%) had either recorded admissions or Emergency Department attendances or both (table 1).

Family factors and children's social care contact

Parental problems were common. Almost two-thirds of cases (N=29/40; 73%) had a concern recorded about complex family problems (table 1). These included: parental substance abuse (N=13/40; 33%), domestic violence (N=21/40; 53%) or parental mental health problems (N=25; 63%). These data reflect practitioner awareness or concern, not service use.

Over half the children were recorded as being known to children's social care (CSC) at the time of the incident (N=21/40; 53%) (table 1), and more than four out of five families were recorded as previously receiving follow-up from CSC (follow-up in child, sibling or parent lifetime N=31/40; 78%). Six children (N=6/40; 15%) were the subject of a Child Protection Plan at the time of the incident (table 1) and five were the subject of a court order (4 care orders, 1 contact order).

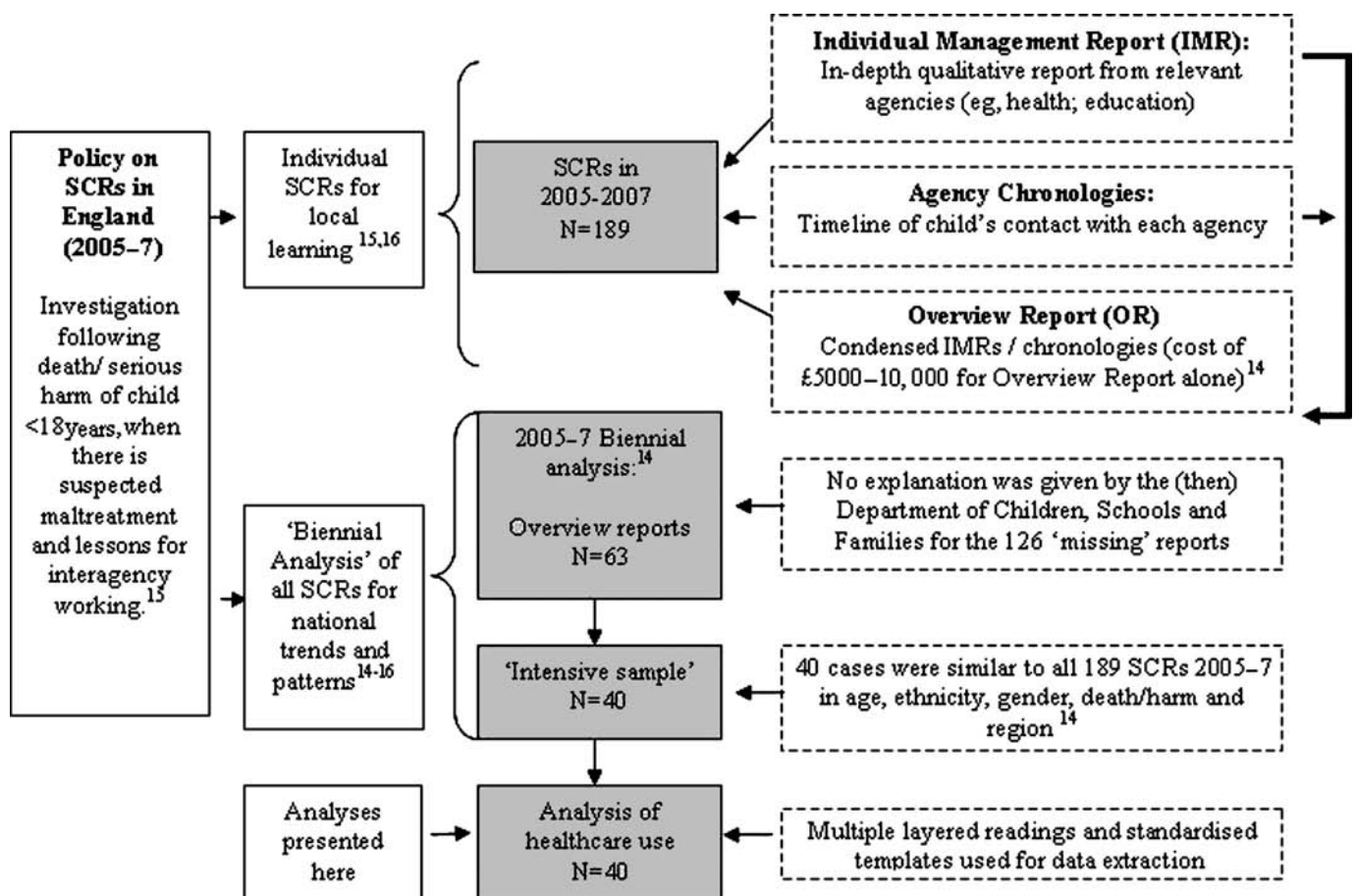


Figure 1 Methods. SCR, serious case review.

Table 1 Contacts with Healthcare and Children's Social Care (CSC) services by children who were the subject of a serious case review in England 2005–2007

Age of child	Index child (the subject of the serious case review)						Family	
	Universal healthcare services			Health problem	Secondary healthcare services		Family factors and CSC††	
	AN-care/HV/SN*	GP registration	Immunisation†	Health problem‡	Secondary healthcare§	Hospital admission/emergency department visit¶	Parental MH/drugs or alcohol/DV**	Index child follow-up by CSC††
≤3 months	No	–	Too young	–	–	–	Yes	–
	No	–	Too young	–	–	–	–	–
	Yes	Yes	Too young	–	–	Yes	Yes	–
	Yes (PM)	Yes	Too young	–	–	–	Yes	Yes
	Yes	Yes	Too young	–	–	–	Yes	Yes
	Yes	Yes	Too young	–	–	–	–	–
	Yes (MM)	No	Yes (MM)	Yes	–	–	Yes	Yes
	Yes (MM)	–	–	–	Yes	Yes	Yes	–
	Yes	Yes	Yes	Yes	Yes	Yes	–	–
≤12 months	Yes	Yes	Yes	–	–	–	–	–
	Yes	Yes	–	–	–	Yes	–	–
	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Yes(MM)	Removed	Yes (MM)	Yes	–	–	Yes	Yes
	Yes	Yes	Yes	–	–	–	Yes	Yes
	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Yes (PM)	Yes	Yes (MM)	Yes	–	Yes	Yes	–
	Yes (PM)	Yes	Yes	Yes	–	Yes	Yes	–
	Yes (MM)	Lapses	Yes (PM)	Yes	Yes	–	–	Yes
1 year to ≤5 years	Yes	Yes	Yes (MM)	Yes	Yes	Yes	Yes	–
	Yes	–	Yes	–	Yes	Yes	Yes	Yes
	Yes (PM)	Lapses	Yes	–	Yes	Yes	Yes	Yes
	Yes	–	–	–	–	–	Yes	Yes
	Yes	–	–	Yes	Yes	Yes	Yes	Yes
	Yes	Lapses	Yes (PM)	–	–	Yes	Yes	–
	Yes (MM)	Lapses	Yes (MM)	–	Yes	–	Yes	Yes
	Yes	Yes	–	–	Yes	Yes	Yes	–
	Yes	Yes	Yes	–	Yes	–	Yes	Yes
6 years to ≤10 years	–	Yes	–	Yes	Yes	–	Yes	–
	Yes	Yes	Yes (PM)	Yes	Yes	Yes	Yes	Yes
	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–
11 years to ≤17 years	–	Removed	–	–	–	–	Yes	Yes
	Yes	Lapses	Yes	Yes	Yes	Yes	Yes	–
	Yes	–	–	Yes	Yes	Yes	Yes	Yes
	–	–	–	Yes	Yes	Yes	–	–
	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–
	Yes	Yes	Yes (PM)	Yes	Yes	Yes	Yes	Yes
	–	–	–	–	–	–	–	–
	Yes	Lapses	–	–	Yes	Yes	Yes	–
Yes	Yes	Yes	Yes	Yes	Yes	–	Yes	
–	Yes	Yes (PM)	Yes	Yes	Yes	–	Yes	

A dash (–) represents missing data (ie, there was 'no mention' of the relevant information in the serious case review overview report).

*Yes, at least one of the following: attendance at all antenatal/well-baby appointments (An-Care), ≥1 visit from health visitor (HV), ≥1 contact with school nurse (SN) in lifetime; Yes (PM), AN-care partially attended; Yes (MM), AN-care mainly missed.

†Yes, all age-appropriate immunisations; Yes (PM) and Yes (MM), partially attended or mainly missed immunisation appointments; Too young, child under 2 months at time of incident

‡One or more of: low birth weight, Special Care Baby Unit, minor/chronic health condition, neurological, learning or behaviour prob.

§Follow-up of index child at time of incident by one of the following: paediatrician, child and adolescent mental health services, drugs and alcohol team, educational psychologists, occupational therapists, physiotherapist, ophthalmologist, audiologist, ear, nose, throat specialist or speech and language therapist. Excludes emergency department visits or hospital admissions

¶Excludes postnatal admissions

**Confirmed/suspected/alleged problems in the parents lifetime (not service use). DV, domestic violence; MH, mental health problem.

††Child known to Children's Social Care Services at time of incident; grey shading: child had a Child Protection Plan at time of incident

Service use across sectors

Half (N=11/21; 52%) of the children with CSC follow-up at the time of the incident had missed appointments or had a period of not being registered with a general practitioner

(GP). Fourteen of these 21 children (67%) had a serious health problem and/or use of secondary healthcare services recorded and one further child had a minor health problem (table 1). Missed appointments and lapses in GP registration (N=7/19;

37%) and recorded health problems and/or secondary health care use (N=10/19; 52%) were also common among children without CSC follow-up at the time of the incident.

Only a minority of children (N=4/40; 10%) had no record of healthcare use in their lifetime or any recorded history of CSC follow-up for themselves, siblings or parents. Two were concealed pregnancies and two were adolescents.

Missing data

The extent of missing data varied by the age of the child at the time of the incident. A third (N=5/14; 36%) of the children without recorded secondary care follow-up, hospital admissions or ED visits were less than 8 weeks old. Birth problems were more likely to be recorded for children under

five (N=8/16 children under 5y had birth problems recorded) than over 5 years (N=1/14 children over 5y had birth problems recorded). Information about antenatal care and GP registration was also most likely to be recorded for children aged under 1 year and least likely to be recorded for children aged 11 years or older (table 1).

DISCUSSION

Main findings

Most children who died or were seriously harmed due to child maltreatment had a record of previous contact with universal and/or secondary healthcare services and/or CSC services. Many children were in contact with multiple services, and few children were not known to any of these services. Most families' records indicated professional concerns about complex family problems. Health visitors and school nurses had contact with most children, including those with little other service use. GP registration was infrequently mentioned. Missed routine appointments with universal health services were common. These findings are likely to underestimate service use.

Comparison with existing literature

In the absence of a control group for SCR data, we contextualised our findings using indirect comparisons with the general child population, focusing on data from England or the UK (table 2). These indirect comparisons are limited by differences in populations, time at risk and outcome measures, and should be interpreted with caution.

Rates of universal health service use (antenatal care, immunisations, GP registration) appear higher in the general population than in children who were the subject of an SCR between 2005 and 2007 (table 2).^{17–19} In the general population, rates of partial immunisation and lack of antenatal care are higher in certain ethnic groups, young parents and/or families from

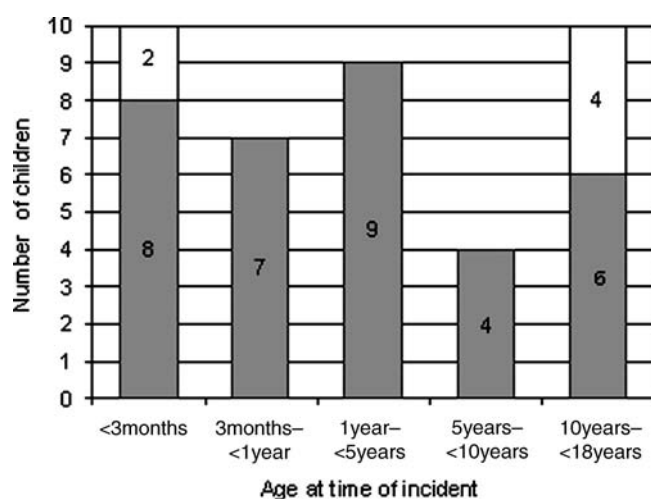


Figure 2 Universal healthcare service use by age of child at time of incident (white, no recorded contact; grey, recorded contact with at least one universal healthcare service (see table 1 for definition)).

Table 2 Contextualisation of findings from serious case review 2005–2007: indirect comparisons with published studies based on the general child population

Serious case reviews 2005–2007			General child population: literature from UK unless specified otherwise	
Variable (child unless otherwise specified)	Percentage (N)	Details	Percentage (N)	Study details
Antenatal care	35% (14/40)	Mainly/ partially missed	2.9% (463/16157)	Recent mothers, no antenatal care, SR; NR, C ¹⁷
GP registration	53% (21/40)	Lifetime registration	98.0%	Total population registered with GP (no further details) ¹⁸
Immunisations	30% (10/33*)	Mainly/partially missed	1.1% (232/17544)†	Recent mothers, child not immunised, SR, NR, C ¹⁹
			3.3% (712/17544)	Recent mothers, child partially immunised, SR, NR, C ¹⁹
ED attendance	43% (17/40)	≥1 attendance	28.4 per 100 child years(3511617/12351800 child years at risk)	ED attendance for any reason in England 2007–8, RD, NR, using ONS midyear estimates as denominator ^{27 28}
Hospital admission	30% (12/40)	≥1 admission	7.8% (162/†)	≤20 years, hospital admission, last year, SR, NR ²⁹
Secondary care (not admissions or ED)	53% (21/40)	Follow-up	26.3% (548/†)	≤20 years, hospital outpatient visit, last year, SR, NR, CS ²⁹
Child and Adolescent Mental Health Services	15% (6/40)	Follow-up	9.6% (1180/12294)	5–16 years, current mental health disorders, SR, NR ³⁰
Parent domestic violence (DV)	53% (21/40)	Alleged DV (lifetime)	Range 13–31%	Women, lifetime prevalence of DV, international SyR ²¹
			10.1% (1437/14256)§	Expectant or new parents, current DV, SR, C ³¹
Parental mental health (MH) problem	55% (22/40)	Alleged MH problem (lifetime)	M:38.7% (1647/4255)	Mother (M)/father (F), ever depression and/or antidepressants by time child aged 12 years, NR, RD, C ²¹
			F: 20.7% (853/4120)	
			14.4% (2054/14256)§	Expectant parents, lifetime psychiatric illness, SR, C ³¹

*At the time of the incident, seven children were too young to be eligible for immunisations (under 2 months old)

†Percentage weighted to adjust for effect of survey design.

‡The denominator is unclear. The total number of children and young people in the study was 2061.

§Assuming that no response indicated 'no domestic violence' or 'no history of psychiatric illness,' respectively.

C, cohort study; CS, cross-sectional; ED, emergency department; NR, nationally representative; RD, routine data; SR, self-report; SyR, systematic review.

deprived areas, probably due to barriers to accessing services.^{17 19} It is likely that the families of children who are the subject of a SCR experience similar barriers to receiving care (45% of the intensive sample of children who were the subject of a SCR were living in 'poor conditions' (N=18/40) and 10% of all children who were the subject of a SCR 2005–2007 were born to 'teenage mothers' (N=18/189)).¹⁴ A recent systematic review found no strong evidence that maltreated children attend ED more than other children after socio-economic factors were taken into account.⁷

Between 13% and 31% of all women in the general population experience domestic violence in their lifetime,²⁰ and almost 40% of mothers (and 20% of fathers) in the general population received a diagnosis or were treated for depression by the time their child was 12 years old²¹ (table 2). The higher levels of recorded complex family problems for families of children who were the subject of a SCR might be explained by hindsight (ie, concerns in light of the incident) and/or increased ascertainment given their degree of contact with services.

Children who were the subject of a SCR had high levels of contact with social care services (78% lifetime prevalence of index child, sibling or parent contact with social care services). This might be due to the criteria of 'lessons for inter-agency working' that were used to select children for SCR.¹⁶ Information on the proportion of children who have ever had contact with CSC is not available for the UK, but 4% of all children (aged 0–15 years) in Western Australia have had a child protection notification by age 10,²² and in Southern Australia 23% of white children by 16 years of age.²³

There are parallels between our findings and those of the Confidential Enquiry into Maternal and Child Health (CEMACH) study of UK child fatalities.²⁴ CEMACH noted that: universal (primary) healthcare services were in contact with many children (42%) in the 3 months prior to death but missed universal healthcare appointments were common and worrying (3%); and a high proportion of children (77%) had complex medical needs. As with our study, missing data on primary healthcare use was common (20%). The CEMACH study concludes that primary care is an important service for children who are at risk of death, based on their coverage of the child population, their role as the repository of information from across health services (eg, about injuries) and ability to provide continuity of care for children with chronic disease.

Strengths and weaknesses

We used the best available source of national data for England on deaths or serious harm related to child maltreatment. Limitations included the lack of standardised or systematic recording of information in the lengthy narratives and missing information ('no mention'). Our findings are likely to underestimate need and service use. It was not possible to ascertain frequency or intensity of service use, appropriateness or quality of contacts with services, or whether parental problems were alleged or confirmed, ongoing or time-specific or recognised by services at the time of the incident. Without comparable population-based data, no inferences can be drawn about whether the findings of chronic healthcare problems and high levels of service use reflect a deprived environment or exposure to maltreatment or both. SCRs do not collect any measures of deprivation, and therefore indirect comparisons cannot be made between similarly deprived children in the general population.

Implications for practice

Our findings raise three hypotheses:

1. Insufficient attention is being given to the role of healthcare for children subject to serious maltreatment.
 - ▶ The picture of complex family problems and chronic health problems in the child indicate considerable ongoing healthcare need but there was a high level of 'missing' data about health and healthcare service use (no mention of) in the SCR overview reports.
 - ▶ A substantial proportion of children known to CSC were not registered with a GP and/or had missed appointments with universal services.
2. Seriously maltreated children might benefit from proactive and long-term engagement with universal healthcare services.
 - ▶ Eighty-five per cent of children were recorded as in contact with a universal healthcare service, while only half were being followed up by CSC at the time of the incident.
 - ▶ Health visitors and school nurses were in contact with children who had little other recorded service use.
3. There is unmet healthcare need in seriously maltreated children.
 - ▶ Many children had missed appointments with universal healthcare services and/or periods when they were not registered with a GP.
 - ▶ Despite higher-than-average healthcare need in seriously abused children, rates of complete use of universal healthcare services might be lower than average, and rates of hospital admissions and ED use do not appear higher in children who were the subject of an SCR.

Implications for SCRs

Given the potential for SCRs to impact negatively on child safeguarding (creating a risk adverse culture of blame and by diverting resources^{25 26}), it is important that data generated by SCRs be robust and useful, and provide value for money. Our findings of poor quality and unsystematic collation of data in SCRs, and the variable judgements which cases should be the subject of a SCR, cast doubt on whether this approach (via the Biennial Analysis) can meet the SCR's secondary objective of identifying national trends and patterns in these children.¹⁵ These problems will not be solved by the policy requiring all deaths related to maltreatment to be subjected to SCR.¹⁵

To maximise value for money, it is essential that the complete SCR dataset reaches the research team conducting the biennial analysis. Computerised processes may help achieve completeness.

Service providers responsible for funding SCRs should consider linking data on maltreatment-related deaths to routinely available healthcare data and the child death overview processes. This would ensure systematic data capture to build chronologies of service use, would increase data completeness, accuracy and comparability between SCRs, and, most importantly, would allow comparisons of patterns of care with similar children who do not die. Such an approach would also release professional time to address lessons learnt locally.

Funding The Department of Health contributed to the project. JW's time was funded by a joint MRC and ESRC PhD studentship. This work was partly undertaken at Great Ormond Street Hospital/University College London, Institute of Child Health which received a proportion of funding from the Department of Health's National Institute of Health Research ('Biomedical Research Centres')

funding). The Medical Research Council provides funds for the MRC Centre of Epidemiology for Child Health. The research also took place at the Centre for Research on the Child and Family at the University of East Anglia where MB, SB and PB are located. Their time was funded by the Department of Children Schools and Families.

Competing interests None.

Ethics approval Ethics approval was provided by the University of East Anglia Ethics Committee.

Provenance and peer review Not commissioned; externally peer reviewed.

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Jenny Woodman, Marian Brandon, Sue Bailey, et al.

Arch Dis Child 2011 96: 270-275 originally published online January 17, 2011

doi: 10.1136/adc.2010.190314

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