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Would shared Health Visitor and Emergency Department records improve recognition of child maltreatment within the ED? A prospective multi-centre study.

Burns are common causes of paediatric emergency care attendance; approximately 10% result from child maltreatment. Following Emergency Department (ED) attendance with a burn by 232 <5 year olds, eleven risk factors for maltreatment were collected via Health Visitor (HV) telephone surveys. Three of these (domestic violence, social care involvement, and developmental impairment) were also collected in ED records and information collected was compared between the two data sets using nonparametric tests. Fifty-nine percent of children lived in families with risk factors for maltreatment. Prominent risk factors known by HVs included: prior injuries (n=55, 24%), carer/parent mental health problems (n=48, 21%), domestic violence (n=47, 20%) and social-care involvement (n=45, 19%). 158 cases had complete data for all 11 factors: 49 (31%) lived in households with one, 22 (14%) with two and 27 (17%) with \geq three risk factors. For cases where HVs recorded the following risk factors as present, ED recorded 5/47 (11%) with domestic violence, 10/45 (22%) with social-care involvement and 4/23 (17%) with developmental impairment. Many risk factors that were known to HVs were not identified by ED staff despite being part of a standardised proforma. Maltreatment risk assessment could be improved if ED staff had easy access to HV information.

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Key Practitioner Messages

- 59% of pre-school children who attended ED with a burn live in a family with \geq 1 maltreatment risk factor, as identified by health visitor records.

- EDs should be able to access a child’s HV record electronically at the time of presentation, to identify known maltreatment risk factors.
- The lack of integration of community and acute setting health records is a barrier to comprehensive assessment and treatment decisions for children in ED, especially in relation to safeguarding risks.

Keywords

- Child safeguarding, health visitor records, maltreatment risk factors, burns, emergency care

Introduction

In the UK, an estimated 40,000 - 50,000 children and young people each year attend medical services with a burn (Davies *et al.* 2019, Child Accident Prevention Trust 2013). Up to 70% of these cases are children aged less than five years, with peak prevalence in toddlers aged between eight and 18 months (Kemp *et al.* 2014). Children younger than three years old admitted to hospital with a burn are estimated to be seven times more likely to suffer future neglect or physical violence than case-matched controls, twice as likely to be a child “in-need” (James-Ellison *et al.* 2009) and have more hospital admissions for unrelated conditions by their sixth birthday (Hutchings *et al.* 2010).

An estimated 10% of paediatric burn admissions are due to violence or neglect (Chester *et al.* 2006). It is important that the safeguarding and future wellbeing needs of these children are considered. For any young child with an injury, the characteristics of the injury, presentation (Maguire *et al.* 2008), together with details of family history and home environment are important considerations. The most commonly associated risk

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factors for child maltreatment include domestic violence, parental/carer mental ill-health and substance misuse (often referred to as the 'Toxic Trio' (DH 2010, Cleaver *et al.* 2011, Ofsted 2010). Social care involvement, previous ED attendances and child developmental impairment are also associated with maltreatment (Spencer *et al.* 2005, Maguire *et al.* 2008, Kemp *et al.* 2017). These factors contribute to Adverse Childhood Experiences (ACEs) (Public Health Wales 2014), which are associated with significant risks to children's long-term physical health and social wellbeing (Hughes *et al.* 2017). Knowledge of these risk factors enables healthcare professionals to predict vulnerable children and plan for their future wellbeing.

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Better quote the Adverse Childhood Experiences (ACE) Study
Or Anda 2005

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Many children with injuries present to busy emergency departments (EDs) where immediate patient care is the overriding priority, thus limiting time for in-depth assessment and information gathering. Variable clinician experience and knowledge of safeguarding together with a lack of confidence and anxiety about raising child protection concerns may play a role in the quality of the assessment.

Every pre-school child in the UK is allocated a health visitor (HV), a community-based nurse who is trained in early years healthcare and contributes to the delivery of a Child Health Programme in the first five years of life. This includes mandated universal services supporting early prevention and prioritising safeguarding within the home (PHE 2016). Therefore, HVs gain knowledge about the home situation and potential risk factors (DH 2010).

The aims of this study were, 1) to describe the prevalence of maltreatment risk factors identified by HVs for pre-school children who sustain burn injuries and 2), to compare the extent to which data were recorded for three specific maltreatment risk factors common to both ED and HV data collection proformas: domestic violence, social care

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involvement (whether the family has currently, or has had, any social care involvement in the past) and developmental impairment.

Methods

This is a multi-centre cross-sectional prospective study of children less than 5 years of age who attended the NHS for emergency care in Bristol, Cardiff or Manchester with a burn, between 15th January 2013 – 31st September 2015.

The Burns and Scalds Assessment Template (BaSAT) informs a number of studies. It is an evidence-based proforma (Johnson *et al.* 2017, Kemp *et al.* 2014 & 2018, Bennett *et al.* 2018) used by clinicians to standardise documentation of clinical assessments of children with a burn. The BaSAT was introduced following training in three EDs (at the Bristol Royal Hospital for Children, University Hospitals Bristol NHS Trust; North Bristol NHS Trust and the Paediatric Emergency Department, University Hospital of Wales), two MIUs (North Bristol NHS Trust and Barry Community Hospital, South Wales) and the ED at the South West UK Children's Burns Centre in Bristol in 2013-2014. A further four EDs in the North Manchester Pennine Trust (at Royal Oldham Hospital, Fairfield General Hospital Minor Injuries Unit, Rochdale Infirmary and North Manchester Paediatric ED) also collected BaSAT data between March and September 2015.

The BaSAT was used to collect information on the mechanism, severity and location of the burn, the history of the incident offered by the carers in attendance, details about burn first-aid administered and any referrals made for the child. Clinicians were asked to document known risk factors for child maltreatment previously identified by two systematic reviews (Maguire *et al.* 2008, Kemp *et al.* 2014) including developmental

impairment, current or previous social care involvement with the family, and domestic violence within the home.

We attempted to contact the allocated HV of the children living in the catchment area of the EDs to which they had presented with a burn. The HVs were contacted by telephone by the Research Nurses three months post-injury; several attempts were made. It was not possible to identify all HVs or to follow-up the children who were referred into the Children's Burns Centre from the wider geographical region. We therefore had a convenience sample of HVs randomly included into the study according to whether the research team were able to make contact with them. The HVs' were asked whether any of 11 child- or family-related risk factors that were associated with maltreatment were recorded in the child or family case notes *prior* to the date when the child attended the ED. The 11 risk factors included in the HV proforma were derived from the validated Family Risk Assessment Tool from the Ontario Child Protection Tools Manual (Ministry of Children and Youth Services 2007) and included: previous injury-related emergency attendance, developmental impairment, concerns about parental care, supervision or discipline of the child, inappropriate safety measures in the home, number of children under 16 years-old regularly sleeping in the household, social care involvement for prior or ongoing child protection, history of domestic violence, carer/parental mental health problems and/or substance/alcohol misuse of in the family. This information was collected by the research nurses and recorded on a simple proforma that documented whether each risk factor was present, absent or unknown. It was evident that there was no standardised recording system used by HV's across all regions. The three risk factors common to the BaSAT and HV proforma are the subject

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Commented [LH9]: Maybe better as "into care from a wider geographical region" or was it only Bristol cases that couldn't be identified?

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of a comparative analysis, namely: domestic violence, social care involvement and presence of developmental impairment.

Statistical analyses

Study data were entered onto a REDCap database (Research Electronic Data Capture) (Harris *et al.* 2009) held at the University of Bristol and data from all sites were pooled for analyses. All analyses were conducted in Stata v.14 (StataCorp 2015). The prevalence of the 11 *a priori* determined risk factors known to the HVs were calculated and the information for the three risk factors common to both settings were compared. All data were analysed using non-parametric tests (Fisher's exact tests, Chi-square tests, Kruskal-Wallis tests). Data were analysed using all available data.

Ethical approval

The study had NHS research ethical approval along with approval from the Confidentiality Advisory Group (CAG) to allow collection of data without parental/carer consent (MREC No. 13/WA/0003, CAG- 1-06 (PR7)/2013).

RESULTS

A total of 762 children less than five years of age had a BaSAT completed in the three cities, 430 (56%) in Bristol, 119 (16%) in Cardiff and 213 (28%) in Manchester (table 1). Of these, data from HV records were collected for 232 children who lived in the local catchment areas: 79 (34%) were in Bristol, 55 (24%) in Cardiff and 98 (42%) in Manchester. The age range was 4 weeks – 4 years 11 months, 137 (59%) were male and 111 (48%) had suffered scald injuries (table 2). Age, gender and injury type distribution

was similar between the three research sites (table 2), therefore data were pooled for further analyses.

Table 1. Distribution of BaSAT and HV proforma data recorded on children aged < 5 years old who attended emergency settings with a burn across three UK cities.

City	BaSAT n (% of total cases)	HV records n (% of total cases)
<i>Bristol</i>		
Children's ED	88 (11.6)	24 (10.4)
General ED	65 (8.5)	30 (12.9)
MIU	20 (2.6)	12 (5.2)
ED at regional Burns Centre	257 (33.7)	13 (5.6)
<i>Cardiff</i>		
ED	114 (14.9)	54 (23.3)
MIU	5 (0.7)	1 (0.4)
<i>Manchester</i>		
ED1	72 (9.5)	30 (12.9)
ED2	66 (8.7)	33 (14.2)
ED3	32 (4.2)	18 (7.8)
ED4	43 (5.6)	17 (7.3)
Total	762 (100)	232 (100)

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ED = Emergency Department, MIU = Minor Injuries Unit, BASAT = Burns and Scalds Assessment Tool, HV= Health Visitor

Table 2. Demographic characteristics of children aged < 5 years old who attended emergency settings with a burn across the three UK cities where Health Visitor data were collected (n=232).

	Cardiff (n=55)	Bristol (n=79)	Manchester (n=98)	P value*
Age in months (median [IQR])	18 [13 - 31]	17 [11 - 28]	18.5 [14 - 31]	0.11
Gender (n/% male)	32 (58)	45 (57)	60 (62)	0.79
Injury type (n/% scalds)	25 (45)	43 (54)	43 (44)	0.38

*Stems from Kruskal-Wallis for age and Chi-square or Fisher's exact for gender and injury type.

Maltreatment risk factors recorded by HVs

The proportion of cases with a risk factor known to the HV ranged from 1-24% (table 3). The most common factors included prior injuries (n=55, 24%), carer/parental mental health problems (n=48, 21%) and domestic violence (n=47, 21%).

Although the presence or absence of most risk factors was known to the HV, knowledge of safety measures taken in the home was the least well recorded (table 3). For the 158 cases where the presence or absence of all 11 risk factors was recorded, 60 (38%) lived in households with no known risk factors present, 49 (31%) with one risk factor, 22 (14%) with two and 27 (17%) with three or more known risk factors present.

Table 3. Prevalence of the eleven maltreatment risk factors known to health visitors & recorded on the HV proforma for children aged <5 years old (n=232) who attended an emergency service with a burn.

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Risk factor	Present n (%)	Absent n (%)	Unknown n (%)
Prior injuries	55 (23.7)	173 (74.6)	4 (1.7)
Parent mental health problems	48 (20.7)	175 (75.4)	9 (3.9)
Domestic violence	47 (20.3)	181 (78.0)	4 (1.7)
Social care involvement	45 (19.4)	185 (79.7)	2 (0.9)
Inappropriate safety measures	31 (13.4)	155 (66.8)	46 (19.8)
Substance misuse in family	20 (8.6)	202 (87.1)	10 (4.3)
Developmental impairment	23 (9.9)	205 (88.4)	4 (1.7)
Concern about carer's physical care of the child	20 (8.6)	203 (87.5)	9 (3.9)
Concern about supervision	19 (8.2)	204 (87.9)	9 (3.9)
Household size $\geq 4^*$	12 (5.2)	205 (88.4)	15 (6.4)
Concern about discipline	2 (0.9)	216 (93.1)	14 (6.0)

* Household size measured as number of those aged less than 16 years who regularly sleep in household.

Comparison between risk factors collected in ED and those collected by Health

Visitors

When comparing the three risk factors common to both ED and HV records (domestic violence, social care involvement, developmental impairment) (n=232), there was a clear mismatch between information recorded in the two settings (table 4). For domestic violence, just 5 (10.6%) of the 47 children for whom this was recorded as present in HV data had this recorded as present in ED. One case had domestic violence recorded as present in ED yet it was unknown to the HV when being interviewed, four cases recorded as absent in ED were recorded as unknown on HV proforma (table 4). The patterns were similar for social care involvement and developmental impairment (table 4). **Developmental impairment was recorded in all cases in ED but the presence of impairment, as recorded by HVs in 19/23 cases, was not identified in ED.**

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Table 4: Comparison of prevalence of three maltreatment risk factors in children aged <5 years old who presented to an emergency care setting with a burn, as recorded on the standardised BaSAT in ED and recorded on the Health Visitor proforma (n=232).

		Emergency Department recorded information				P value*
		Present n (%)	Absent n (%)	Unknown n (%)	Total N	
Health Visitor proforma information	<i>Domestic violence</i>					
	Present	5 (10.6)	20 (42.6)	22 (46.8)	47	
	Absent	1 (0.55)	82 (45.3)	98 (54.1)	181	
	Unknown	0 (0)	4 (100)	0 (0)	4	
	Total	6 (2.6)	106 (45.7)	120 (51.7)	232	0.003
	<i>Social care involvement</i>					
	Present	10 (22.2)	20 (44.5)	15 (33.3)	45	
	Absent	3 (1.6)	119 (64.3)	63 (34.1)	185	
	Unknown	0 (0)	1 (50)	1 (50)	2	
	Total	13 (5.6)	140 (60.3)	79 (34.1)	232	<0.001
	<i>Developmental impairment</i>					
	Present	4 (17.4)	19 (82.6)	0 (0)	23	
	Absent	2 (1)	203 (99)	0 (0)	205	
	Unknown	0 (0)	4 (100)	0 (0)	4	
Total	6 (2.6)	226 (97.4)	0 (0)	232	0.002	

Legend:* Stems from Fisher's exact tests.

Discussion

This study demonstrates that, for children who attended emergency care settings with a burn, key risk factors for child maltreatment were not identified or recorded in the healthcare setting. When information was recorded, it was often discrepant with that known to HVs who had information about each of the eleven child maltreatment risk

factors for the majority of cases, although details of the home situation, such as safety provision and the number of children living in the household, were often unknown.

Sixty percent of children lived in homes where domestic violence, carer/parental mental health issues and/or previous social services involvement were present.

Although the BaSAT used in the emergency care settings included questions relating to domestic violence, social care involvement and developmental impairment, this information was frequently not completed by clinicians. It may be that the questions were missed due to lack of concern and limited time in the ED setting (e.g. finding out whether the family were known to social services via system check or additional conversation can take valuable time), or that staff did not feel adequately equipped to ask these questions.

Domestic violence status was poorly recorded in the ED and often recorded as absent, despite conflicting information collected from HVs. This may be due to clinicians believing that the questions were inappropriate to ask in the ED setting (i.e. if both carers / partners are present in the room?) or where appropriate facilities for private discussions were unavailable.

In the UK, by the nature of their role, HVs are often one of the first professionals to become aware of young children living with toxic stress in their home. A recent survey of adults in Wales, recalling their childhood experiences, estimated that 16% of the adult population suffered domestic violence, 14% mental health issues, 14% alcohol and 5% substance abuse (Public Health Wales 2014). In England, the figures were slightly lower: 14% for domestic violence and for mental health issues 11%, alcohol 9% and 34% for substance abuse (Bellis *et al.* 2014). These figures are retrospective, collected in a survey of lifetime experience, and not representative of the current childhood

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population, but? they provide a framework of estimates of ACE's within the population. This study population appears to experience high rates of domestic violence or carer/parental mental health issues. Given the potential future safeguarding risks to young children who have sustained a burn (James-Ellison *et al.* 2009, Hutchings *et al.* 2010), it would seem important to identify potentially relevant risk factors when children present in emergency care settings. This would help to inform the clinicians' overall assessment of safeguarding or maltreatment risks and determine the level of ongoing support a child and family may need.

The study results confirm that HVs are well placed to record risk factors for maltreatment and they emphasise the importance of this unique source of information for emergency care staff involved with young children (NHS England 2014, PHE 2016). However, availability of HV records, whether electronic or paper-based, varies across the UK NHS trusts and local authorities and are not, generally, accessible to emergency care staff (Appleton, 2012). In some regions of the UK there is ongoing development of community care service databases, such as the Patient Record Information System (PARIS) (Pambudi *et al* 2004) which contain HV case notes.

Like many healthcare staff, HV's are committed to collaborative working but there are practical difficulties when organisations have limited resources, separate budgets, separate employers and do not have compatible database systems (Appleton 2012). Furthermore, it was evident during our data collection that there was no standardised approach taken by HVs in the collection of this information for children on their caseloads. Thus, even with access to these records, information on risk factors may not always be immediately apparent in the absence of standardised HV documentation.

Commented [SM19]: I thin we could add a sentence here noting that unlike many other countries, the UK does not universally use electronic medical records, nor do all ED's have electronic access to HV records.

For HV's, both the Munro Review (DfE 2011) and the 'Healthy Child Programme 0 to 19' (PHE, 2016) acknowledge that integrated services and greater partnership working, including data sharing, are essential to improving outcomes for children, young people and their families. Most 'Serious Case Reviews' (a statutory review which takes place after a child dies or is seriously injured where abuse or neglect is thought to be involved) identified sources of information that could have contributed to a better understanding of the children and their families' situations, including information about historical knowledge and information from other agencies (Ofsted 2010). Family, social and environmental factors are important predictors of repeat injury (Kendrick 1993). This was also evident in our sample where 24% of these young children had previously attended an emergency care setting with an injury.

Strengths and limitations

This was a prospective, multi-centre study from MIUs, EDs and a burns centre in three geographical areas in the UK. Evidence-based tools were developed to standardise the collection of the relevant data.

Attending children were often from wide catchment areas. Due to time constraints, research nurses contacted just the HVs for those children who lived within the local catchment area of each emergency care setting. The convenience sample of HV's may have biased the findings by excluding more serious burns (i.e., those cases who had to travel from outside the catchment area for specialist care), geographically transient families (e.g., recent migrants or travellers) or children who were subsequently

relocated as a result of maltreatment issues. Whilst these data reflect the associated risk factors for children with burns, data were not collected from a group of children attending healthcare settings for other conditions that would have provided a base rate of risk factors in the general population.

Conclusion

Many young children who attended emergency care settings with a burn were found to be living with significant maltreatment risk factors known to HVs. However, these risk factors were unavailable to emergency staff, who made safeguarding judgements based on limited information. Consideration should be given to information sharing between emergency care staff and HVs. Electronic records with a standardised format to record the presence or absence of family risk factors, made available across the NHS would have the potential to inform a more comprehensive assessment by emergency care staff and improve the identification of children with safeguarding concerns. This would result in a more appropriate, timely and constructive action plan for the child's ongoing care.

What is already known on this subject?

- Young children admitted with burns appear to be at higher risk of future maltreatment
- Family risk factors that increase harm to children include domestic violence, carer/parental mental health issues and substance misuse within the family
- HVs have extensive knowledge of families but this information is not currently easily accessible to staff in emergency care settings.

What this study adds

- 59% of pre-school children who presented for emergency care for a burn live in a family with at least one maltreatment risk factor (domestic violence, carer/parental mental health issues, social care involvement), as identified by HV records
- EDs, MIUs and burns centres should be able to access a child's HV record electronically at the time of presentation, to identify known maltreatment risk factors
- The lack of integration of community and acute setting health records is a barrier to comprehensive assessment and treatment decisions for children in ED, especially in relation to safeguarding risks.

Article Summary

1. Why is this topic important?

Burns are common childhood injuries in UK emergency care settings; 10% of these might result from maltreatment (neglect or violence). Children less than three years old who sustained a burn or scald are seven times more likely to suffer future abuse or neglect than matched controls (James-Ellison *et al.* 2009), before their sixth birthday. Gaining complete child and family history in emergency care settings can be complex.

2. What does this study attempt to show?

There was a lack of information recorded in emergency care assessments about key risk factors for children's safety, such as domestic violence or developmental impairment for those children who had attended with a burn. This information was usually available

from the HV records for that child but were not easily available to emergency care staff to help inform their decision-making.

3. What are the key findings?

Fifty nine percent of pre-school children presenting to emergency settings with a burn are living in a family with at least one maltreatment risk factor, and 21% are living with domestic violence, as identified by HV records. Only 10% of cases had domestic violence identified within the emergency care setting.

4. How is patient care impacted?

Emergency care settings are usually not able to access a child's HV record electronically at the time of presentation. If they could, this would ensure fully informed decisions are made regarding the child's optimal care. HV records contain a wealth of important information about families of young children and emergency care staff should have easy access to this information. The lack of integration of health records with other databases is a barrier to comprehensive assessment and treatment decisions for children in emergency care settings, especially in relation to safeguarding risks.

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Study data were collected and managed using REDCap (Research Electronic Data Capture) tools hosted at the University of Bristol.

Contributors: DN, DR, LH, AE, AK and TD contributed to the design of the study. DN and DR performed the study. LH undertook the statistical analysis. All authors contributed to the interpretation. AK, VB, DR, DN, LH and TD prepared the original draft of the paper and all authors commented on the subsequent drafts and approved the submitted manuscript.

Competing interests: None declared

References:

- Appleton J. (2012) Delivering safeguarding children services in primary care: responding to national child protection policy. *Journal of Health Care Research & Development*, 13: 60-71.
- Bellis MA, Lowey H, Leckenby N, et al. Adverse childhood experiences: retrospective study to determine their impact on adult health behaviours and health outcomes in a UK population. *Journal of Public Health* 2014; 36: 81-91.
- Bennett CV, Maguire S, Nuttall D, et al. First aid for children's burns in the US and UK: An urgent call to establish and promote international standards. *Burns* 2018
- Chester DL, Jose RM, Aldlyami E, et al. Non-accidental burns in children - are we neglecting neglect? *Burns*, 2006;32 (2):222-228.
- Child Accident Prevention Trust (CAPT), 2013
<http://www.makingthelink.net/tools/costschild-accidents/costs-burns> [Accessed 02/11/2015]
- Cleaver, H., Unwell, I., Algate, J. (2011) *Children's Needs - Parenting Capacity. Child violence: Parental mental illness, learning disability, substance misuse and domestic violence*. London: Department of Education.
- Davies K, Johnson EL, Hollén L, Jones HM, Lyttle MD, Maguire S, Kemp AM; PERUKI. Incidence of medically attended paediatric burns across the UK. *Inj Prev*. 2019 Feb 21.
- Department of Health (2010). *Health Visiting and School Nursing Programmes: supporting implementation of the new service model. No.5 : Domestic Violence and violence - Professional Guidance*. London: Department of Health.

Department for Education (2011). *Munro review of child protection: final report - a child centred system*. London: Department for Education.

Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG, Research electronic data capture (REDCap) – A metadata-driven methodology and workflow process for providing translational research informatics support, *J Biomed Inform.* 2009 Apr;42 (2):377-81.

Hippisley-Cox J., Groom L., Kendrick D., Coupland C., Webber E and Savelyich B. (2002) Cross sectional survey of socioeconomic variations in severity and mechanism of childhood injuries in Trent 1992-7. *British Medical Journal.* 2002; 324 (7346):1132.

Hobbs C.J. (1886) When are burns not accidental? *Archives of Disease in Childhood.* Vol.6, No. 4, pp357 -361.

Hughes K, Bellis MA, Hardcastle KA, Sethi D, Butchart A, Mikton C, Jones L, Dunne MP. The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis. *Lancet Public Health.* 2017 Aug; 2 (8):e356-e366. doi: 10.1016/S2468-2667 (17)30118-4. Epub 2017 Jul 31.

Hutchings H, Barnes PM, Maddocks A, Lyons R, James-Ellison MY .Burns in young children: a retrospective matched cohort study of health and developmental outcomes. *Child Care Health Dev.* 2010 Nov;36 (6):787-94. doi: 10.1111/j.1365-2214.2010.01106.x.

James-Ellison M, Barnes P, Maddocks A, Wareham K, Drew P, Dickson W, Lyons RA, Hutchings H. Social health outcomes following thermal injuries: a retrospective matched cohort study. *Archives of Disease in Childhood*. 2009;94(9):663-667.

Johnson E, Maguire S, Hollén L, et al. Agents, mechanisms and clinical features of non-scald burns in children: A prospective UK study. *Burns* 2017;43(6):1218-26.

Kemp AM, Jones S, Lawson Z, Maguire SA. Patterns of burns and scalds in children. *Archives of Disease in Childhood*. 2014;99 (4):316-321

Kemp AM, Hollén L, Emond AM, et al. Raising suspicion of maltreatment from burns: Derivation and validation of the BuRN-Tool. *Burns* 2018;44 (2):335-43.

Kendrick, D. (1993) Accidental injury attendances as predictor of future admission. *Journal of Public Health Medicine*, Vol. 15 No.2 pp 171-174.

Maguire SA, Moynihan S, Mann M, Potokar T, Kemp AM. A systematic review of the features that indicate intentional scalds in children. *Burns*. 2008;34(8):1072-1081

Ministry of Children and Youth Services. (2007) *Ontario Child Protection Tools Manual*. A Companion Guide to the Child Protection Standards in Ontario. Queen's Printer for Ontario.

NHS England *National Health Visiting service specification 2014/15*. NHS England, 2014. <https://www.england.nhs.uk/wp-content/uploads/2014/03/hv-serv-spec.pdf> (accessed Oct 2016).

Ofsted, (2010). *Learning lessons from serious case reviews 2009 -2010, Ofsted' s evaluation of serious case reviews from April 2009 - March 2010* (No. 100087).

Pambudi IT¹, Hayasaka T, Tsubota K, Wada S, Yamaguchi T. Patient Record Information System (PaRIS) for primary health care centers in Indonesia. *Technol Health Care*. 2004;12(4):347-57.

Public Health England (2014). *Reducing unintentional injuries in and around the home among children under five years*. London, Public Health England.

Public Health England (2016). *Healthy child programme 0 to 19: health visitor and school nurse commissioning*. London: Public Health England.

Public Health Wales (2014). *Welsh Adverse Childhood Experience (ACE study). Adverse Childhood Experiences and their impact on health – harming behaviours in the Welsh adult population*. Cardiff: Public Health Wales.

StataCorp. 2015. *Stata Statistical Software: Release 14*. College Station, TX: StataCorp LP