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# Classifying Injury Causation in Interim Medico-Legal Reports Following Forensic Evaluation of Suspicious Childhood Injury

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**Abstract**

Paediatricians with child protection responsibilities evaluate allegations of physical harm and sexual abuse which are subject to both child protection and criminal investigations. This evaluation requires the production of an interim medico-legal report which contributes to interim decisions regarding the safety of the child whilst investigations are still in progress. A second report may be needed at a later time once investigations are considered complete. The interim medico-legal report contributes an expert opinion about injury causation including direct harm or harm through neglect or substandard care which has relevance to mitigating future risk of harm and understanding the support needs of a family. This paper defines key principles in relation to the structure and content of an interim medico-legal report, which must conform to forensic standards of practice. A classification of injury causation for interim medico-legal reports is proposed which can be useful to systematically define outcomes for data collection, audit and research purposes.

## Introduction

### Interim medico-legal reports

#### a. Function

Paediatricians with child protection responsibilities must evaluate cases which are subject to both child protection and criminal investigations. This evaluation requires an opinion which should be given in writing in the form of an interim medico-legal report. At a later time a second report may be required once investigations are considered complete.

The issues relevant to the agency with legislative responsibilities regarding the safety of the child (referred to as the Child Protection Agency) differ to those of criminal investigators who are more narrowly focused on determining whether a criminal offence may have been committed. Child Protection Officers focus on assessing future risk/s of harm to the child and specifically the expected role of the parent/caregiver in protecting the child from harm/s that are reasonably foreseeable and avoidable.

The interim medico-legal report contributes an expert opinion about injury causation. In forming this opinion aspects of harm including direct harm or harm through neglect or substandard care are considered. From a child protection perspective factors identified during hospital admission which assist in understanding the support needs of the family to mitigate future risk of harm are important for child protection intervention.

#### b. Timing

In contrast to forensic pathologists who investigate suspicious deaths, the timeline for child protection paediatricians to communicate opinion regarding injury causation can be more urgent. In relation to suspicious injuries Child Protection Officers need to understand how the findings of injury/ies can be interpreted in relation to cause to enable them to finalise interim decisions about the safety of the child once they leave hospital. Similarly investigating police officers also require this information to enable them to progress a criminal investigation. Written opinions about key issues, rather than discussion only with investigators is increasingly being required by the Courts who make decisions about the need for care and protection of children. These written opinions must therefore use language that is understandable to the professionals who finalise these decisions.

In these reports it is useful to have a defined structure regarding conclusions that can be routinely applied to support the conclusion of the legal decision-maker regarding the immediate

safety of the child [1]. For children with findings considered suspicious of harm, this can usually be made available once initial medical investigations have been completed such as skeletal survey, neuro-imaging, retinal examinations/photo-documentation and preliminary laboratory testing. In some cases for temporary protection orders to be sought to enable assessment to proceed, the Courts may require earlier documentation rather than verbal opinions only. An interim medico-legal report should only be issued at the formal request of the investigating authorities. It may be that some other tests may be outstanding or pending but the report-writer may have sufficient information to provide provisional opinion and provide recommendations on further investigation that will be useful in clarifying the circumstances of how the injury was caused.

## Classifying Injury Causation: Current Limitations

Published research in child protection has consistently used a method of comparing cases which are considered to be derived from abuse with those that are not (often referred to as 'accidental') to explore differences in mechanisms of injury from injury patterns between these two groups [2-5]. This type of research relies on classification of cases by the child protection paediatrician and/or hospital multi-disciplinary team to define whether the case is considered derived from "abuse" or "not-abuse", using a 7 point Likert scale [6].

Recent research has focused on "gray" cases, where a definitive conclusion cannot be reached on available information [7]. In examining the characteristics of these cases these authors noted that the psycho-social characteristics of these cases were similar to cases considered to be derived from abuse yet the characteristics of the injuries involved mechanisms which were similar to cases classified as "accidental". Using a classification of injury causation of 'abuse' or 'not-abuse' does not easily allow the report writer to identify issues derived from their evaluation that may require further investigation which may be of relevance to understanding and responding to child protection issues or needs in the family [8].

## Forensic Principles Defining Content

### a. Avoiding bias

Research focusing on medical evaluation of suspicious childhood injury has identified much variability between experts in reaching conclusions about the likelihood of abuse based on case evaluations [9,10]. Like other professionals who work within forensic scientific disciplines, paediatricians are equally vulnerable to cognitive biases influencing expert opinion [11,12]. In the medical evaluation of suspicious injuries in children, practice recommendations for child protection and forensic paediatricians to recognize and minimize the role of bias has been previously published [11]. Whilst interim medico-legal reports should communicate psycho-social factors identified from the medical assessment requiring further investigation by Child Protection Officers, report-writers should avoid introducing bias in their conclusions by basing their opinion regarding injury causation on the presence/absence of these factors [13].

### b. Clear language and terminology

Within the literature relating to professional practices in medical child protection there has been a focus on the difficulties encountered in relation to terminology used by medical experts which require interpretation in legal contexts [14]. In designing a useful classification system which can be systematically used by child protection/forensic paediatricians it is important to use language/terms that avoid misinterpretation or may otherwise introduce error in injury classification which can have implications for validity of research which rely on forensic medical conclusions as outcomes.

The term "**accident"** is problematic because it can be argued that very few injury events are truly unavoidable. The term "accident" is often used to refer to an injury event derived from the child's own actions. In this case "self-inflicted" is more precise, although this should not be assumed to imply that the child intended to cause harm to themselves which is how this term is more commonly used in mental health settings. An "accident" also involves injury events involving other persons such as parents or carers who unintentionally injure a child whilst attempting to avoid greater harm (e.g. catching a baby who has rolled and started to fall off a change table, resulting in limb fracture) or when they themselves are involved in an unanticipated event whilst holding or interacting with the child (e.g. parent slips on a wet patch in kitchen whilst holding a baby, causing the baby to sustain a skull fracture from impact on to a tiled floor).

It is also important to note that from injury interpretation it is not possible to make inferences about intent. Specifically it should not be assumed that a child who has sustained any injury, no matter how serious, was intended to be harmed by the person responsible based only on the presence of the injury. That conclusion falls within the jurisdiction of legal decision-makers with regards the safety of the child, or in a criminal matter, for the court to consider based on the basis of all the evidence heard in those proceedings.

The terms "**Non-Accidental Injury" (NAI)** and "**inflicted**" may be considered to be interchangeable, and refer to injuries as a result of **force being imposed on, involving another person** [15]. Both terms refer to injury events which involve another person applying a mechanism of injury that is **likely to be injurious** and/or involving excessive force on a child that exceeds the normal range of strength of a biological structure resulting in injury.

The term **"confession"** implies that what is being said is an accurate representation of what has happened to cause the injury. It is recognised that for various reasons, in some situations, persons can provide explanations which may at a later time be retracted, or involve omissions or variations from the actual circumstances [16]. As an alternative, using neutral language which refers to this as a reported account of events or reported history with identification of its source is more objective.

The term **"consistent with"** should be avoided due to confusion in interpretation of the term. Often it is used by medical report-writers in its neutral sense, to mean "***could*** be caused by", and is commonly used to opine whether an explanation is tenable in relation to the findings. However many lay persons assume the term to mean "is caused by", which may be misleading if there are other possible explanations that could equally fit with the injuries found on examination [17].

### c. Conforming with rules of expert evidence

In an interim medico-legal report, its purpose is to communicate findings and their interpretation to Child Protection Officers and criminal investigators whilst an investigation is still ongoing. The terms used in possible conclusions should conform to the rules

of expert evidence [18]. Specifically, the conclusions must avoid trespassing on the "ultimate issue", which is the responsibility of the legal decision-maker, and which includes a wider scope of evidence than just the medical evidence which is more narrowly focused on injury causation. The "ultimate issue" in a child protection proceeding is whether the child has suffered harm and is in need of care or protection.

It may be useful in the context of unexplained injuries where the suspicion that they are inflicted is sustained (rather than resolved), be further supported by communicating that the findings in this case have been well described in cases that involve inflicted mechanism/s of injury. This maintains the boundary between the expert's opinions and avoids trespassing on the ultimate issue but also supports the opinion by relating it to well documented inflicted injury pattern/s.

This author has previously proposed a classification system of conclusions for forensic paediatricians to apply in relation to considering whether or not the injury is considered to have been inflicted using one of four categories (1):

- The injury has been caused by another person and is considered to be inflicted.
- The injury is adequately explained by the circumstances of the injury event provided (by the carer or other witness)
- The injury is self-inflicted- has been caused by the child's own behaviour as a result of normal childhood activity (with no other person actively involved);
- The mechanism or sequence of events leading to the injury remains indeterminate or unclear.

It can be argued that these categories are not mutually exclusive and are therefore misleading or confusing [19].

## Alleged Sexual Assault

Defining medical conclusions regarding allegations of sexual abuse or assault has been challenging. The Adams classification and its subsequent revisions was developed to help assist experts in defining medical conclusions based on physical findings and investigations which considers the reported history from the child [20,21]. The contexts of why paediatricians with forensic/child protection expertise undertake examinations in children can vary. Whilst some examinations can directly follow a forensic interview where a child has provided a clear account of sexual abuse/assault there are many other situations where the context is less clear. In some situations the examination may be undertaken because a parent/carer (or other person) has noted a finding on the child which, for them, has raised a suspicion of sexual abuse/assault or there may be other factors leading to these concerns which have led to investigation of concerns of sexual abuse/assault.

There has been increased recognition that the way in which the statements of the child/concerns are explored through interview must avoid introducing bias. In most jurisdictions skilled investigators undertake training and use protocol-driven forensic interviewing structures when interviewing children [22].

Experts have been criticised for providing opinion that is solely based on circumstantial information rather than derived from medical facts from examination [17]. In providing expert opinion in relation to allegations of sexual abuse, it is important that the medical expert restricts opinion to what conclusions can be reliably drawn from the medical findings which can then be considered alongside legal evaluation of the context which includes the child's formal forensic interview.

**Recommendation 1:** Defining purpose of interim report.

It is useful to have a section at the beginning of an interim medico-legal report stating key principles which define its content, structure and conclusions (see Figure 1).

"**An interim medico-legal report** is issued at a time when an **investigation** is **still ongoing** in relation to findings considered suspicious of harm and subject to police and statutory investigation.

The report is issued **at the request of the police or Child Protection Agency** to **contribute to the decision-making** of the statutory agency **in relation to the subject child's safety**. The report may also be considered in the context of ongoing police investigation into the matter. This report should not be used as the sole basis for decision-making regarding the safety of the child and its conclusions should be considered alongside a child protection assessment by the relevant authority.

Given that further material may be made available at a later time from the current investigation, the opinion in this **report is considered provisional** and is based only on what information is available at the time of writing this report. As a requirement, this report must adhere to expert evidence standards. This report may also identify further information that may be relevant to ongoing investigations of the matter.

Once the investigation is completed, a forensic medical report/finalised witness statement can be issued on written request. This may require consideration of any further relevant material derived from investigation (e.g. witness statements, scientific examination of injury event location, injury event re-enactments). The **final forensic medical report supersedes the Interim report**."

**Figure 1:** Introduction to Interim Report.

1. **Findings Conform with Assault as Reported:** Injury/ies fully in keeping with **report of inflicted injury mechanism** (*imposed on, caused by another person*) **from child or perpetrator** (e.g. reliable description of assault from child or direct witness; "confession" from perpetrator).
2. **Unexplained**: Suspicion of **inflicted injury** (*imposed on, caused by another person*) **sustained**.
3. **Explained:**
    a. **Outstanding concerns future risk/safety** requiring further investigation (e.g. explained mechanism but excessive force used by parent to cause injury; poor supervision/protection from foreseeable harms).
4. **Explained:**
    a. Suspicion of inflicted injury **resolved**: no outstanding concerns re future risk of harm requiring further investigation. (i.e.: "accidents": self-inflicted or unintentional and without neglect)
5. **Indeterminate:** (Many genital examinations may be classified here).

**Figure 2:** Defining Interim Forensic Medical Conclusion.

**Recommendation 2:** Classification of interim forensic medical opinion.

The following classification system has been developed for use in forensic evaluations of injuries considered suspicious of harm or alleged sexual abuse/assault. These conclusions can be used to define conclusions in an interim medico-legal report which primarily is written to assist legal decision-makers regarding the ongoing safety of the child but is also useful to inform the ongoing criminal investigation. The terminology used conforms to requirements of the expert witness which precludes trespassing into the "ultimate issue" which is for the legal decision-maker such as a court to determine on the basis of all the evidence in such proceedings (see Figure 2).

**Recommendation 3:** The structure and content of interim medico-legal reports that represent forensic principles discussed within this paper includes the following headings:

## Conclusion

Child protection/forensic paediatricians have dual purposes in providing expert opinion which contribute to separate legal proceedings. By necessity these functions require the completion of two reports, one that is given as an interim medico-legal report and a second report if further information comes to light after investigation which may have relevance to criminal proceedings.

**Introduction** (see Figure 1 for content)

**Request For Report** *(from whom, when)*

**Findings** (from examination, investigations)

**Account Of Events Preceding Presentation** *(define source)*

**Background Medical History** *(define source)*

**Social History**

**Treatment And Progress** *(following presentation/admission to hospital)*

**Medical Opinion**

**Forensic Conclusion** (see Figure 2 for classification)

**Recommendations**

**Figure 3:** Interim Medico-Legal Report Structure.

This paper has described a useful classification which can be adopted by child protection/forensic paediatricians to support decision-making regarding forensic medical conclusions for findings considered suspicious of harm in relation to physical injury and alleged sexual assault within an interim medico-legal report. This classification can also be used to systematically define outcomes for data collection, audit and research purposes.

## References

1. Skellern C, Donald T. Suspicious childhood injury: formulation of forensic opinion. J Paeds Child Health. 2011; 47: 771-775.
2. Maguire S, Mann MK, Sibert J, Kemp A. Can you age bruises accurately in children? A systematic review. Arch Dis Child. 2005; 90: 187-189.
3. Kemp AM, Dunstan F, Harrison S, Morris S, Mann M, Kim Rolfe, et al. Patterns of skeletal fractures in child abuse: systematic review. BMJ. 2008; 337: 1136.
4. Maguire S, Pickerd N, Farewell D, Mann MK, Tempest V, Kemp AM. Which clinical features distinguish inflicted from non-inflicted brain injury? Arch Dis Child. 2009; 94: 860-867.
5. Maguire S, Moynihan S, Mann M, Potokar T, Kemp AM. A systematic review of the features that indicate intentional scalds in children. Burns: 2008; 34: 1072-1081.
6. Thomas SA, Rosenfeld MS, Leventhal JM, Markowitz RI. Long-bone fractures in young children: Distinguishing accidental injuries from child abuse. Pediatrics. 1991; 88: 471-476.
7. Chaiyachati BH, Asnes AG, Moles R, Schaeffer P, Leventhal JM. Gray cases of child abuse: Investigating factors associated with uncertainty.Child Abuse Neglect. 2016; 51:87-92.
8. Sittig JS, Uiterwaal CSPM, Moons KGM, Russel IMB, Nievelstein RAJ, Nieuwenhuis EES, et al. Value of systematic detection of physical child abuse at emergency rooms: a cross-sectional diagnostic accuracy study. BMJ Open. 2016; 6.
9. Lindberg DM, Lindsell CJ, Shapiro RA. Variability in expert assessments of child physical abuse likelihood. Pediatrics. 2008; 121: 945-953.
10. Laskey AL, Sheridan MJ, Hymel KP. Physicians' initial forensic impressions of hypothetical cases of pediatric traumatic brain injury. Child Abuse Neglect. 2007; 31: 329-342.
11. Skellern C. Minimising bias in the forensic evaluation of suspicious paediatric injury. JForens Legal Med. 2015; 34: 11-16.
12. Skellern C. A Commentary on Recognising and Reducing Bias in Assessment of Suspicious Childhood Injury. J Medical Toxicology Clin Forens Medicine. 2015; 1: 7-9.
13. David TJ. Avoidable pitfalls when writing medical reports for court proceedings in cases of suspected child abuse. Arch Dis Child. 2004; 89: 799-804.
14. Skellern C, Donald T. The relevance of the Goudge inquiry to the practice of child protection/forensic paediatrics.J Forens Legal Med. 2014; 27: 35-38.
15. Leeb RT, Paulozzzi L, Melanson C, Simon T, Arias I. Child maltreatment surveillance. Uniform definitions for public health and recommended data elements. Centers for Disease Control and Prevention, Atlanta. 2008.
16. Malloy L, Shulman E, Cauffman E. Interrogrations, confessions, and guilty pleas among serious adolescent offenders. Law Human Behav. 2014; 38: 181-193.
17. Goudge S. Inquiry into pediatric forensic pathology in Ontario report. Toronto Ministry of the Attorney General. 2008.
18. Freckelton I, Selby H. Expert Evidence: Law, Practice, Procedure and Advocacy. Sydney: LBC. 1999.
19. Greenbaum J. Review: Suspicious childhood injury: Formulation of forensic opinion. (Skellern, Donald). The Quarterly Update. XIX. 2011; 38-39.
20. Adams J. Evolution of a classification scale: Medical evaluation of suspected child sexual abuse. The Quarterly Update Summer 2004 Vol XI No. 2001; 36: 31-36.
21. Adams JA. Medical evaluation of suspected child sexual abuse: 2011 update. J Child Sex Abuse. 2011; 20: 588-605.
22. Lamb ME, Orbach Y, Hershkowitz I, Esplin PW, Horowitz D. A structured forensic interview protocol improves the quality and informativeness of investigative interviews with children: a review of research using the NICHD Investigative Interview Protocol. Child Abuse Negl. 2007; 31: 1201-1231.