IpAC Unit
interprofessional ambulatory care unit

ECU AUSTRALIA EDITH COWAN UNIVERSITY

Interprofessional learning through simulation

Communication in family centred care: *non accidental injury of an infant*

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Health Simulation Centre

ECU AUSTRALIA EDITH COWAN UNIVERSITY

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Acknowledgements

This resource was developed by the Interprofessional Ambulatory Care Program (IpAC) at Edith Cowan University (ECU) in collaboration with the ECU Health Simulation Centre with funding provided by the Australian Government under the Increased Clinical Training Capacity (ICTC) Program.

Foreword

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Australia's health workforce is facing unprecedented challenges. Supply will not meet demand, and the safety and quality of care remain key issues. The national health workforce agency, Health Workforce Australia (HWA), an initiative of the Council of Australian Governments (COAG), has been established to address the challenges of providing a workforce that meets the needs of our community – now and in the future.

Accordingly, ECU has set a priority on meeting these challenges, with a focus on the national health workforce reform agenda set out in the 2008 National Partnership Agreement (NPA) on Hospital and Health Workforce Reform.

In June 2010, ECU was awarded $4.6M from the Australian Government through a nationally competitive process under the ICTC Program, an initiative which aims to develop interprofessional learning and practice capabilities in the Australian health workforce.

The IpAC Program aims to complement traditional clinical placement activities with high quality interprofessional learning competency development and assessment, so that at the earliest point students gain exposure to best work practices within multidisciplinary teams that have the patient's individual needs as the focus.

Additionally, the IpAC Program has developed interprofessional learning resources and interprofessional health simulation challenges in collaboration with the ECU Health Simulation Centre. The ECU Health Simulation Centre is recognised internationally as a

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specialist centre in providing human factors based sequential simulation programs using professional actors. Most simulated learning interactions revolve around a single moment, such as a patient's admission to the emergency department. What we provide at the ECU Health Simulation Centre is a sequential simulated learning event that follows the patient and carer's journey through the healthcare system, for example, from the accident site following a motor vehicle accident, to the emergency department, to a hospital ward, to their home and into the community for GP and allied health follow-up.

Human factors in health care are the non-technical factors that impact on patient care, including communication, teamwork and leadership. Awareness of and attention to the negative aspects of clinical human factors improves patient care.

ECU's involvement in national health workforce reform is all about playing a role that enables the health workforce to better respond to the evolving care needs of the Australian community in accordance with the NPA's agenda. The IpAC Program is an example of how we can work across sectors, nationally and internationally, to determine better ways of addressing the pressing issue of how best to prepare students for the workplace and thus assuring that health systems have safe, high quality health services.

Interprofessional Ambulatory Care Program

ECU's IpAC Program was established with support from the Australian Federal Government through funding from the ICTC Program. The IpAC Program aims to deliver a world-class interprofessional learning environment and community clinic that develops collaborative practice among health professionals and optimises chronic disease self-management for clients.

This is achieved through the provision of clinical placements within the multidisciplinary team at the IpAC Unit, a community clinic that develops communication and collaboration among health professionals and optimises chronic disease self-management for clients. Additionally, a range of clinical placements are offered at existing health facilities, where trained IpAC Program clinical supervisors provide clinical support and ensure the integration of interprofessional learning into each clinical placement.

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The IpAC Unit, in collaboration with the ECU Health Simulation Centre, has developed a range of interprofessional learning through simulation resources. These learning resources are packages consisting of an audiovisual resource and a facilitator's manual, and aim to facilitate interprofessional learning and to support the participants in the development of interprofessional skills.

The interprofessional learning through simulation resources developed by the IpAC Program aim to provide health students and health professionals with the opportunity to learn with, from and about one another by engaging them in interactive live simulation events. These simulations encourage students and professionals to challenge themselves and each other in a safe learning environment.

ECU Health Simulation Centre

ECU houses the only fully functioning Health Simulation Centre of its kind in Western Australia, specifically designed and equipped to address the interprofessional learning needs of the health workforce and implementation of both state and national safety and quality frameworks.

The ECU Health Simulation Centre offers health workforce training and development specialising in clinical skills, human factors, and patient safety training for multidisciplinary health teams. Using a variety of educational techniques, including a broad range of simulation mannequins, professional actors and task trainers, ECU specialises in immersive simulation and observational learning. Supporting the ECU Health Simulation Centre are nursing, medical, paramedic and psychology academic and technical staff whose aim is to cultivate the development of competent and confident health professionals centred on enhancing patient safety.

Interprofessional learning

Interprofessional education occurs when two or more professions learn with, from and about each other in order to improve collaboration and quality of care (Centre for the Advancement of Interprofessional Education, 2002).

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Interprofessional learning is the learning arising from interaction between students or members of two or more professions. This may be a product of interprofessional education or happen spontaneously in the workplace or in education settings (Freeth, Hammick, Reeves, Barr, & Koppel, 2005). It has been found that interprofessional education can improve collaborative practice, enhance delivery of services and have a positive impact on patient care (Canadian Interprofessional Health Collaborative (CIHC), 2008).

The World Health Organization (WHO) has recognised the importance of interprofessional education and collaborative practice in developing a health workforce that is able to meet the complex health challenges facing the world and assist in the achievement of the health-related Millennium Development Goals (World Health Organization, 2010). In developing its framework for action, the WHO have recognised that models of interprofessional collaboration are most effective when they consider the regional issues and priority areas (including areas of unmet need) in the local population (World Health Organization, 2010). In doing so, interprofessional education and collaborative practice can best maximise local health resources, reduce service duplication, advance coordinated and integrated patient care, ensure patient safety and increase health professional's job satisfaction (World Health Organization, 2010).

The end goal of interprofessional education is to create a health workforce with improved levels of teamwork, collaboration, knowledge-sharing and problem-solving, eventually leading to better patient and client outcomes in health settings (Braithwaite et al., 2007).

Interprofessional learning through simulation

Simulation in education refers to the re-creation of an event that is as closely linked to reality as possible. Gaba (2004) defined simulation as a technique, rather than a technology, to replace or amplify real life experiences with guided experiences often immersive in nature to evoke or replicate aspects of the real world, in a fully interactive pattern. Simulation provides a safe learning environment for students to practice, where they are free to make mistakes, correct them and improve the processes of care (Kenaszchuk, MacMillan, van Soeren, & Reeves, 2011). Simulation is the bridge between classroom learning and the real life clinical experience, allowing students to put theory into practice.

Interprofessional learning through simulation combines the principles of interprofessional learning and the use of simulation as an educational methodology. Interprofessional learning

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through simulation provides students with the opportunity to practice working with other health professionals and allows participants to explore collaborative ways of improving communication aspects of clinical care (Kenaszchuk, et al., 2011).

Many of the interdisciplinary team core competencies, such as problem solving, respect, communication, shared knowledge and skills, patient-centred practice, and the ability to work collaboratively (Canadian Interprofessional Health Collaborative, 2010) can all be developed by interprofessional learning through simulation.

Teamwork and interprofessional practice and learning are being recognised as central to improving client care and outcomes and enhancing client safety (Sargent, 2008). Promoting patient safety through team efforts is one of the five core competencies identified by the Institute of Medicine (2003).

In today's healthcare setting, no one health professional can meet all of the client's needs and therefore a healthcare team approach is required. Interprofessional learning through simulation provides learning opportunities to prepare future healthcare professionals for the collaborative models of healthcare being developed internationally (Baker et al., 2008).

How to use this resource package

This interprofessional learning through simulation resource package has been designed to support the facilitation of interprofessional learning among students and practitioners with an interest in developing their skills and knowledge of interprofessional practice.

The package consists of two components: an audiovisual resource and a supporting manual. In order to optimise the learning opportunities from this package it is recommended that participants are firstly introduced to the concepts of interprofessional learning and human factors in health care.

The audiovisual resource consists of two scenarios, the first demonstrating sub-optimal performance of the healthcare team, with the second demonstrating more effective performance, improving the patient experience. The package has been created in a format to enable flexibility in its application depending of the educational setting. We recommend the following format:

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1. Facilitator guided discussion around the concepts of interprofessional learning and human factors in health care
2. View scenario 1 of the audiovisual resource
3. Facilitator guided discussion around the scenario specific learning competency areas (samples given within manual)
4. View scenario 2 of audiovisual resource
5. Facilitator guided discussion, identifying and discussing the changes witnessed and how this resulted in an alternative outcome. In particular discussion relating the causes of these changes to personal (future) practice is essential in improving interprofessional practice.

Opportunities for further reading and exploration of the scenario are provided in the *Further Information* and *References* sections of this resource manual.

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Scenario brief

A three-month old baby has been admitted with brain insult resulting in uncontrolled life-threatening seizures. The baby is no longer making eye contact and has a poor suck reflex. The infant is on continuous naso-jejunal feeds and anti-epileptic medications and has been moved to the ward from the Intensive Care Unit in a stable condition. EEG and CT scans confirm brain insult.

A meeting has been scheduled with the parents, grandmother, hospital registrar and a child protection social worker to discuss the infant's injuries and health status. The case involves suspected non-accidental injury from shaking and is perceived as potentially volatile. There is a history of domestic violence and drug use within the family.

List of characters

- Father
- Grandmother
- Mother
- Patient
- Registered Nurse
- Senior Medical Registrar
- Social Worker

Key learning competencies

The key learning competencies for this scenario are based on the IpAC Program learning objectives as well as the Canadian Interprofessional Health Collaborative (CIHC) Competency Framework (Canadian Interprofessional Health Collaborative, 2010). The specific competency areas for this scenario are:

- Perceptions and attitudes influencing practice
- Client / family centred care
- Interprofessional communication

Perceptions and attitudes influencing practice

Reflective practice is crucial in continuous development and re-assessment of skills when working in health care. A reflective practitioner:

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- Reflects on feedback and integrates changes into practice
- Reflects on how own perceptions, attitudes and beliefs impact on practice
- Identifies knowledge deficits and seeks clarification

Patient/family centred care

The interaction between team members and the patient/family demonstrates:

- The sharing of information with patients/family in a respectful manner
- Communicating with the client in a way that is transparent, understandable, free of jargon, and relates to the client's daily life
- Listening to the needs of all parties to ensure the most appropriate care is provided
- The interaction is supportive to the client/family and the client's needs
- Facilitation of client decision making

Interprofessional and client centred communication

The health care team consists of health professionals, the client and the family. The interaction within the health care team demonstrates:

- Communication is authentic, consistent and demonstrates trust
- Team members demonstrate active listening skills
- Communication ensures a common understanding of decisions made
- Trusting relationships with clients /families and other team members
- Other disciplines' roles are promoted and supported to client/family

Key discussion points

Scenario 1

The following discussion points are useful in considering scenario 1 of this resource package:

Perceptions and attitudes influencing practice

What perceptions and attitudes affected how you viewed the characters of this scenario?

What perceptions and attitudes do you think the different health professionals have brought to this scenario? How have these perceptions and attitudes affected their behaviour?

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A: Discuss perceptions and attitudes towards health professionals and clients, and how this would affect how you as a health professional would approach each character.

- the nurse
- the registrar
- the social worker
- the grandmother
- the father
- the mother

How do you think the health professionals could make sure their attitudes towards the patient and family do not affect the care provided?

A: Remind ourselves that the client should be at the center: what is it that we can provide, and what does the patient need?

How could the healthcare professionals make sure their attitudes towards each other do not affect the care provided?

A: Role awareness, support each other's roles, clarify roles to clients/family.

Patient/family centred care

How do you think the family is feeling? How does this affect the way they behave?

A: The family is likely to feel guilty, which each family member expresses in a different way.

Do you believe the healthcare team was acting in the best interests of the client? Why?

A: As a health professional, you do intend to take the best interest of the client at heart. The best intentions however can be hindered by work pressures, wanting a quick solution (working with clients and/or families can take time), issues with colleagues, contradictorily by 'best intentions' (what the client wants and needs is not always the same as what the health professional finds is needed), and in this case the suspicions around the care at home for the infant, may hinder collaboration and communication with this family. It is important to be aware of these barriers and remain professional with the client's interest the main aim of treatment and communication.

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Do you believe the family is clear as to what treatment is being provided to Alessia? Why?

A: Family may not fully comprehend what is happening, as they are concerned about the welfare of the infant. Be aware that when clients and/or their family are emotional, you may have to explain the same thing more times than once.

A: Regardless of the concerns around the welfare of the child at home, the mother and father are still close family and need to be informed and give their consent to treatment of the child.

How could interaction with the family be improved?

A: Nurse: explain what she is doing and why, better explain what happens during the seizure, tell the parents she will look after the infant while they are in their meeting.

A: Registrar: Better explain her role, the reason for the meeting, use more plain language terms to replace the medical terms, check with the family whether they have understood.

A: Social worker: Better explain her role, explain what will happen moving forward, and what support she can offer the family during and after the meeting, make sure family understands what the registrar is saying.

Was the family part of the care team? Should they be?

A. Regardless of the concerns around the welfare of the child at home, the mother and father are still close family and need to be informed and give their consent to treatment of the child.

Interprofessional and client centred communication

How do you think the communication of the healthcare team contributed to the family's behaviour? What could have been done differently by each of the health professionals and how?

- The nurse
- The registrar
- The social worker

How could each of the health professionals have improved their communication with the healthcare team? What suggestions would you like to give the health professionals?

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- The nurse
- The registrar
- The social worker

What do you think the style of communication between the healthcare professionals says about their overall level of teamwork and cohesiveness? What effect does this have on the care provided?

A: The communication style is abrupt, no clarifications are given or asked for, nor any supportive comments or feedback. There is no evidence of trust between the healthcare professionals, there is no verbal support of the other person's roles and a lack of active listening skills.

A: The lack of cohesion, trust and style of communication does not alleviate the fears and concerns of the family, emotions which one of the family members responds to with aggression.

How could the healthcare team better communicate their roles, skills and knowledge to the family and each other?

A: The registrar could introduce herself and the reason for the meeting. The social worker could introduce herself and her reason for being present at the meeting. It could be explained who will chair the meeting.

What do think might be contributing to the low level cohesion in this healthcare team?

A: Being busy, time poor or having issues to deal with in our personal lives, will impact on the attention we have for how we come across, and we may forget the impact our remarks have on others, on the team and eventually on the client care.

Key discussion points

Scenario 2

- What did you notice had changed from scenario 1? How did these changes impact on the final outcome?
- How do you think the healthcare team operated in the revised scenario? What were some of the specific changes that occurred and how did this affect the team dynamics in the revised scenario?
- How do you think the family felt in the revised scenario? What caused the difference?

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- How did the health professionals make sure the family felt more informed of Alessia's care?
- What were some of the specific improvements made in regards to communication – with the family, within the team?

Encourage participants to reflect on their own practice:

- How can you ensure the interprofessional learning objectives are addressed in your interprofessional and client-centred practice?

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Literature review

Introduction

Article Nineteen of the United Nations Convention on the Rights of the Child states that all children have the right to live *free from all forms of physical or mental violence, injury or abuse, neglect or negligent treatment, maltreatment or exploitation* (United Nations, 1990). The abuse and neglect of children is a global problem and occurs in all countries, cultures and religious backgrounds (Dubowitz & Bennett, 2007; Matschke et al., 2009). Younger children are most at risk of abuse and maltreatment because of their small size relative to adults, reliance on others for provision of their basic needs, and an inability to protect themselves (Walls, 2006).

Accurate measures of the scale of child abuse and neglect worldwide are problematic due to differing legal, cultural, economic and social attitudes to discipline, work and family roles (Runyan, Wattam, Ikeda, Hassan, & Ramiro, 2002). It is widely acknowledged that incidence of child abuse and neglect is under-reported and official statistics reflect only a small part of the underlying problem (Dubowitz & Bennett, 2007; Hobbs & Bilo, 2009). In the United States (US) approximately 10% of visits to emergency departments by children less than 5 years of age are recorded as non-accidental injuries (Hobbs & Bilo, 2009). However, Schnitzer and Ewigman (2006) suggest that 50–85% of child maltreatment deaths in the US are misclassified as the result of other causes. A study in Germany identified that almost one in every 50 deaths diagnosed as Sudden Infant Death Syndrome (SIDS) was in fact the result of non-accidental head injury (NAHI) (Matschke, et al., 2009).

Shaken baby syndrome

Trauma is the predominant cause of death in children (Gerber & Coffman, 2007). NAHI accounts for only a small fraction of child abuse but its incidence is disproportionately high in infancy (Matschke, et al., 2009). Shaken Baby Syndrome (SBS) is a form of non-accidental head injury that occurs when a young child, often an infant younger than 6 months, is shaken violently causing sudden uncontrolled head movements resulting in brain, eye and skeletal injuries (Matschke, et al., 2009; Mraz, 2009). The syndrome was first formally recognised in 1946 by paediatric radiologist Dr John Caffey. He identified symptoms of infantile subdural and subarachnoid haemorrhage, traction-type metaphyseal fractures, and retinal haemorrhage with no sign of external injury and he termed this “whiplash shaken-

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baby syndrome" (Miehl, 2005). It was not until the 1970s, however, that SBS was more formally recognised due to technological advances in medical diagnostics and increased societal interest in child welfare issues. This resulted in the identification of a typical pattern of clinical presentation for children who are the victim of vigorous shaking (Evans, 2004).

Infants are at particular risk from shaking due to their anatomical form. These include an oversized head relative to the rest of the body where the head of an infant is 25% of their body weight compared to 10% of an adults, weak immature neck muscles, and poor motor control (Mraz, 2009). Coupled with thin, soft skulls and comparatively large subarachnoid spaces, infants who are shaken face the serious risk of life-threatening traumatic brain injury (Gerber & Coffman, 2007).

SBS is the most frequent non-natural cause of death; more than two-thirds of all fatal cases of child abuse occur in this age group (Matschke, et al., 2009). Within the literature, mortality rates from SBS range from 13–38% with serious physical and cognitive consequences for survivors (Matschke, et al., 2009; Miehl, 2005; Talvik, Talvik, & Alexander, 2008). It is the leading cause of death from traumatic brain injury in children younger than 2 years of age (Keenan et al., 2003; Talvik, et al., 2008).

Historical challenges in the diagnosis and reporting of cases of shaken baby syndrome make it difficult to calculate a definitive incidence rate (King, MacKay, & Sirnick, 2003; Miehl, 2005). Annual incidence in English-speaking countries range from 15–30 per 100,000 children under 1 years of age (Matschke, et al., 2009). However, like other forms of child abuse and with no centralised reporting system, it is generally believed that the incidence of SBS is grossly underreported and the true number of children who are victims of SBS, including mild to moderate undiagnosed cases, may be up to 100 times higher (Miehl, 2005; Talvik, et al., 2008).

Clinical presentation

Obvious signs of maltreatment may not be present, with up to 40% of children showing no external signs of injury (King, et al., 2003; Miehl, 2005; Mraz, 2009). However, explanations for the injury may be inconsistent, developmentally inappropriate or unreasonable (Gerber & Coffman, 2007; King, et al., 2003; Mraz, 2009). Delay in seeking treatment should also raise concerns (Dubowitz & Bennett, 2007).

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The clinical presentation of symptoms ranges from mild (e.g. bruising) to potentially fatal severe brain trauma (Matschke, et al., 2009). Mild signs and symptoms at presentation may include headache, lethargy, irritability, confusion, dizziness, blurred vision, and mood changes. However, more severe symptoms may also include nausea and vomiting, seizures, unresponsiveness, inability to arouse from sleep, temperature fluctuation, dilation of one or both pupils, loss of coordination, respiratory problems, bulging fontanel, persistent crying, and poor feeding (Biron & Shelton, 2005; Miehl, 2005). In the most concerning of cases, the infant may present at hospital either unconscious and brady-cardiac, floppy, or cramping (Matschke, et al., 2009).

The presence of intracranial injury is a significant diagnostic feature of SBS. The damage is caused by rapid cranial acceleration-deceleration and marked rotational forces occurring from violent shaking of an infant with insufficient head control (Matschke, et al., 2009). Infants' brains are relatively soft due to immature myelination and the small size of axons (Gerber & Coffman, 2007, p. 501).

Infant shaking has been found to result in both subdural hematoma and retinal trauma as evidenced from fatally inflicted head trauma autopsy cases (Biron & Shelton, 2005). Subdural haematoma is the most common injury from SBS and arises when blood vessels are torn when the brain is shaken within and against the skull (Mraz, 2009). Hematomas can result in cerebral hypoxia, oedema, and vaso-occlusion (Miehl, 2005). Severe brain oedema resulting in increased intracranial pressure is typically the cause of death in victims of SBS (Gerber & Coffman, 2007).

Retinal haemorrhages are highly indicative of an inflicted injury (Gerber & Coffman, 2007) and are present in approximately 75–85% of all cases of SBS as one of the earliest markers of abusive head trauma (Dubowitz & Bennett, 2007; Mraz, 2009).

Radiologic imaging, including computed tomography (CT) scans and magnetic resonance imaging (MRI) should be initiated to determine the extent of brain injury and if necessary an urgent neurosurgical evaluation undertaken (Gerber & Coffman, 2007; Miehl, 2005). If SBS is suspected, imaging should also be used to detect possible bone fractures as soon as the patient is medically stable (Evans, 2004; Mraz, 2009).

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Fluid resuscitation, anti-convolscents, intubation and ventilation (if necessary) in the intensive care unit should all be the first line treatment for all patients with SBS (Gerber & Coffman, 2007). An interprofessional team consisting of paediatric intensive care, neurology, neurosurgery, ophthalmology, forensic paediatrics, and social work is recommended for care of the child once their condition is stabilised (Gerber & Coffman, 2007).

Clinical outcome

The prognosis for victims of SBS is poorer than those of serious accidents and is attributed in part to delays in seeking medical treatment (Matschke, et al., 2009). As previously mentioned, mortality rates are recorded at between 13–36% (Matschke, et al., 2009). For survivors of SBS, the literature suggests between 62–96% have some form of lasting impairment including visual, cognitive, motor or emotional impairment (Hobbs & Bilo, 2009; Matschke, et al., 2009).

In a Canadian study, King et al. (2003) found that 85% of survivors of SBS required ongoing multidisciplinary care placing a significant load on the medical, education and welfare systems, caregivers and society at large. Sixty-five-per cent of SBS survivors have visual impairment at discharge and 60% have a disability classified as moderate or greater (King, et al., 2003). Only 22% of survivors show no health or developmental impairment at the time of discharge (King, et al., 2003).

Factors influencing long-term patient outcome include age, duration of unconsciousness, number of lesions on imaging studies, and Glasgow coma scale score (Gerber & Coffman, 2007; Miehl, 2005). Children who are victims of NAHI demonstrate slower rates of development and show delays in gaining new skills, particularly if injury occurred before the age of 6 years (Miehl, 2005; Talvik, et al., 2008). Long-term impairment can also occur in the form of Alzheimer's disease; Parkinson's disease; Dementia pugilistica; and Posttraumatic dementia (Miehl, 2005).

Talvik, Alexander and Talvik (2008) speculate there is a much greater number of mild cases in the community that are never diagnosed, and the long-term neurological and psychological effects on these children is unknown (King, et al., 2003). Also, SBS is typically not an isolated event but often is part of a larger pattern of abuse (Miehl, 2005). Left undetected, child abuse has significant physical, psychological, and social consequences including behavioural and functional difficulties (e.g. conduct disorders, aggressive

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behaviours), decreased cognitive functioning, and poor academic performance (Dubowitz & Bennett, 2007).

Risk factors

The research literature has identified a number of patterns and risk factors that place certain infants at a greater risk of SBS than the general population. These are briefly discussed below.

Perpetrator

The majority of known perpetrators of SBS are male (Ewigman & Schnitzer, 2006). A national study of SBS in Canada identified male perpetrators in 72% of cases of documented SBS (King, et al., 2003). In 50% of cases the perpetrator was the biological father, followed by the stepfather/male partner in 20% and then the biological mother in 12% of cases (King, et al., 2003). Female babysitters are also implicated in approximately 17% of cases (Gerber & Coffman, 2007).

This finding complements that of a US study that identified the perpetrator as male in 71.2% of cases of fatal inflicted injuries on children aged under 5 years (Ewigman & Schnitzer, 2006). Their research identified the perpetrator as the father in 34.9% of cases and the boyfriend of the child's mother in 24.2% of cases (Ewigman & Schnitzer, 2006). Mothers were identified as being the predominant perpetrator of fatal inflicted injuries only in cases occurring in the first week of life (Ewigman & Schnitzer, 2006).

Drug & alcohol abuse

Alcohol and substance abuse are recognised as being associated with child maltreatment (Barth, 2009). The prevalence of substance abuse among caregivers who have maltreated their children ranges from 19–79% (Barth, 2009).

Domestic violence

A study by King et al. (2003) found signs of previous maltreatment in 60% of SBS cases. The rate of repeated abuse for children discharged after an episode of SBS is between 31–43% (Gerber & Coffman, 2007). Research has also found that the immediate threat of domestic violence significantly affects a women's ability to effectively parent (Barth, 2009).

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Perception of crying

Crying is recognised as an important trigger in cases of SBS, particularly during the first 6 months of an infant's life (Talvik, et al., 2008). In a Dutch study 5.6% of parents admitted that infant crying had led them to smother, slap, or shake their baby (Hobbs & Bilo, 2009).

In their research, Talvik, Alexander and Talvik (2008) found that 88.5% of parents had complained previously about excessive crying or irritability in their infant prior to hospitalisation for SBS.

Sex

Boys have a higher preponderance to becoming victims of SBS with 56–62% of children inflicted with NAHI being male (Keenan, et al., 2003; King, et al., 2003).

Poverty

Maltreatment can happen within any social class but there is a predominance in families from the more disadvantaged populations (Hobbs & Bilo, 2009). Barth (2009) identifies family poverty as a risk factor for child abuse and states that poor families are overrepresented in their involvement with child welfare services (Barth, 2009).

Family unit

A US population-based study of children under 5 years of age found that children who lived with unrelated adults were nearly 50 times more likely to die from inflicted injuries compared to children living with both biological parents (Ewigman & Schnitzer, 2006).

Young parents

Children of young mothers are at increased risk of SBS (Gerber & Coffman, 2007). Between 50–75% of teenagers and young adults are unaware that it is dangerous to shake a child (Matschke, et al., 2009).

Disability or prematurity of the child

Children with any kind of disability have rates of maltreatment 3–4 times that of nondisabled children (Hobbs & Bilo, 2009). Children with a low birth weight are also at an elevated risk (Gerber & Coffman, 2007).

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Other risk factors mentioned in the literature include: maternal mental illness, low level of maternal education, multiple births, and a parent in the military (Gerber & Coffman, 2007; Matschke, et al., 2009).

Dubowitz & Bennett (2007) have also identified the following protective factors which include parental recognition of problems, seeking help, a supportive grandparent, and accessible mental health care.

Conclusion

The impact of SBS can be devastating. Outcomes for the child are generally poor with high incidence of neurological, developmental and psychological impairments in the short and long term (Gerber & Coffman, 2007). The impact on society is also significant with medical, educational, psychological and welfare costs associated with supporting a child with special needs (Biron & Shelton, 2005). The most profound fact about SBS is that it is 100% preventable (Mraz, 2009).

The potential for repeated abuse makes identification of cases of SBS vital and makes it imperative that doctors and other health care professionals know the local laws and regulations pertaining to child abuse in their area (Dubowitz & Bennett, 2007; Gerber & Coffman, 2007). Many countries, including the US, Australia, and Canada, have laws requiring hospital staff to report cases of suspected child abuse (Higgins, Bromfield, Richardson, Holzer, & Berlyn, 2010; Miehl, 2005).

The referrer does not need to be 100% convinced that maltreatment has taken place, merely a level of suspicion that makes them believe that further investigation is warranted (Dubowitz & Bennett, 2007). An interdisciplinary team including a paediatric expert in child maltreatment and representative from child welfare services should be engaged as early as possible in the identification, investigation and management of SBS cases (Dubowitz & Bennett, 2007; Miehl, 2005).

Dubowitz & Bennett (2007) suggest that whilst the reporting of child maltreatment may not be easy, the priority is the child's safety and can potentially save a life. Parental incompetence, culpability or guilt may provoke anger and hostility but it is important that hospital staff inform families of their concerns in a supportive manner (Dubowitz & Bennett, 2007).

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Explanation for the referral can be understood to be a professional or legal responsibility or as a means to clarify the situation and provide assistance for all involved (Dubowitz & Bennett, 2007). It is useful to explain the process involved and for all parties to work cooperatively to ensure the child and their family's needs are met to ensure an optimum outcome for all involved (Dubowitz & Bennett, 2007).

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Medical glossary and acronyms

Anti-epileptic medications:	A drug used to treat or prevent convulsions (as in epilepsy).
Cranial	Of or relating to the skull or cranium.
CPU	**Child Protection Unit** A unit where child protection workers are employed to promote, protect and fulfil children's rights to protection from abuse, neglect, exploitation and violence as expressed in the UN Convention on the Rights of the Child and other human rights, humanitarian and refugee treaties and conventions, as well as national laws.
CT Scan	**Computed tomography (CT) scan** Pictures of structures within the body created by a computer that takes the data from multiple X-ray images and turns them into pictures on a screen. The CT scan can reveal some soft-tissue and other structures that cannot even be seen in conventional X-rays.
EEG	**Electroencephalogram** A graphic tracing of minute voltage changes resulting from bioelectric activity in the brain.
Fontanel	Any of the soft membranous gaps between the incompletely formed cranial bones of a foetus or an infant.
Intensive Care Unit	Hospital facility for care of critically ill patients at a more intensive level than is needed by other patients. Staffed by specialised personnel, the intensive care unit contains a complex assortment of monitors and life-support equipment that can sustain life in once-fatal situations.
Interdisciplinary teams	A team that is collaboration-oriented. The team meets regularly to discuss and collaboratively set treatment goals

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	and carry out treatment plans. There is a high level of communication and cooperation among team members (Korner, 2008, p. 2).
Intracranial	Existing or occurring within the cranium.
MRI	**Magnetic Resonance Imaging** Takes pictures of the brain for diagnosis.
Multidisciplinary teams	A team that is discipline-oriented. Each professional works in parallel, with clear role definitions, specified asks and hierarchical lines of authority (Korner, 2008, p. 2).
NAHI	Non accidental head injury: a purposeful (not an accident) injury to the head.
Naso-gastric Feeds	Nutritional liquid feeding for patients unable to swallow or suck feeds. The tube goes from the nose to the stomach and is inserted by nursing staff and sometimes X-Rayed to check position.
Naso-jejunal Feeds	A feeding tube that passes into the jejunum through the abdominal wall. May be placed endoscopically or surgically.
Retinal Haemorrhage	Abnormal bleeding of the blood vessels in the retina, the membrane in the back of the eye.
SBS	**Shaken baby syndrome** A collective term for the internal head injuries a baby or young child sustains from being violently shaken.
Seizure	Uncontrolled electrical activity in the brain, which may produce a physical convulsion, minor physical signs, thought disturbances, or a combination of symptoms. A seizure is often diagnosed on an electroencephalogram.

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Brain Oedema	A swelling in the brain caused by the presence of excessive fluid.
Subdural Hematoma	A collection of blood in the space between the outer and middle layers of the covering of the brain. It is most often caused by torn, bleeding veins as a result of a head trauma.

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Further information

Lifeline: www.lifeline.org.au
or 13 11 14

Australia 24 hour crisis support.

Beyondblue*:* www.beyondblue.org.au
or 1300 22 4636

Australian info line providing information on depression and related disorders, as well as treatments and referrals.

State-based Alcohol and Drug Information Service (ADIS):
The Alcohol and Drug Information Centres are State and Territory-based services that offer information, advice, referral, intake, assessment and support 24 hours a day. They offer services for individuals, their family and friends, general practitioners, other health professionals and business and community groups.

Australian Capital Territory: www.health.act.gov.au/c/health or (02) 6207 9977
New South Wales: www.druginfo.nsw.gov.au/ or (02) 9361 8000 or (rural 1800 422 599)
Northern Territory: www.health.nt.gov.au/Alcohol_and_Other_Drugs or 1800 131 350
Queensland: http://www.health.qld.gov.au/atod/ or (07) 3738 5989 (rural 1800 177 833)
South Australia: www.dassa.sa.gov.au/site/page.cfm?u=110 or 1300 131 340
Tasmania: www.dhhs.tas.gov.au/mentalhealth/alcohol_and_drug or 1800 811 994
Victoria: http://www.health.vic.gov.au/aod/ or 1800 888 236 (direct) or 1300 858 584
Western Australia: http://www.dao.health.wa.gov.au/ or 08) 9442 5000 (rural 1800 198 024)

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