

REPORT FROM THE PAEDIATRIC INJURY **+** MANAGEMENT RESEARCH FORUM

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EXECUTIVE SUMMARY

This report summarises the proceedings at the PAEDIATRIC INJURY PREVENTION & MANAGEMENT RESEARCH FORUM held in Sydney on 1 August 2014, under the joint auspices of the NSW Research Alliance for Children's Health (RACH), NSW Kids and Families, and the Population Health Research Collaborative (PHRC) of the Sydney Children's Hospital Network. RACH and the PHRC have been established with the aim of promoting collaboration, research development and translation between existing research groups in child and adolescent health services research and population health relating to paediatrics.

With the overall goal of reducing the incidence and the impact of paediatric injury in NSW to match the best rates internationally, **the aims** of the forum were to:

1. Identify priorities for research that inform paediatric injury prevention and service development
2. Facilitate communication between clinicians, researchers and planners
3. Promote translational research to inform policy and practice

Program

The program (see Appendix 1) was developed to present perspectives on a range of issues and research in the field of paediatric injury prevention and management, including commentary from different sectors, with examples of injury types, settings and high risk groups. The meeting was designed to focus on prevention in the morning, with injury management and trauma services in the afternoon.

For a summary of key issues and outcomes please see the attached two page document (Appendix 2).

Attendees

Participants reflected the cross-sectorial approach that needs to be taken if childhood injury prevention is to be optimised, see Appendix 3 for Delegate List.

WELCOME AND STRATEGIC OVERVIEW

Professor Les White

NSW Chief Paediatrician, NSW Kids and Families

In order to reduce injury incidence and severity it is essential that we use research findings and data to influence policy and practice that is collaborative, integrated and system wide. A review of the history of work in this area shows many successes but also some stubborn challenges. Paediatric injury remains significantly influenced by social determinants with some groups at increased risk, including:

- Males - at higher risk than females
- Aboriginal children
- Children in remote areas – the more remote, the higher the risk
- Children living with socio-economic disadvantage

Injury policy should be thought of as covering three key areas:

- Primary prevention to stop incidents occurring (e.g. pool fences)
- Secondary prevention to reduce severity of injury (helmets, seat belts)
- Tertiary care in healthcare services which is provided by a wide range of services contributing to the patient's outcome.

Injury remains the leading cause of mortality and morbidity for young people, and can lead to lasting disability. The range of solutions extends beyond healthcare and thus health sector needs to have influence in other areas, particularly to improve primary prevention. The wide range of providers, including varying healthcare services (e.g. pre-hospital care, emergency, inpatient treatment, psychological services, social support, long-term rehabilitation), makes collaboration and shared vision essential.

OPENING ADDRESS

Hon. Jillian Skinner

Minister for Health and Minister for Medical Research

The Minister welcomed the wide range of experts in the room to the first event of its kind; an event vital to the effective development of strategies and policies to prevent and manage injury in children and young people. She stated that Sydney Children's Hospital Network is a recognised leader in developing shared agendas with other sectors, and there is no question that injury in young people is a high priority. This forum, the Minister said, provided an excellent opportunity to agree on initiatives and improve management of injuries in young people from emergency care to rehabilitation and develop services based on research. Injury in young people remains an important and unsolved issue, she claimed. In 2011 3,000 young people died as a result of injury, and it was the main cause of hospitalisation of people aged 1-24. Working towards better prevention and management requires a cohesive, collaborative and integrated health strategy to ensure:

- People stay healthy
- Avoid unnecessary hospitalisation
- Have access to timely treatment.

Young people will benefit greatly from well-researched and designed health care, particularly vulnerable groups who carry a disproportionately large burden of incidence and severity. The Minister concluded by saying that the large number of government and non-government groups involved in this event, meant this forum was well placed to progress a shared vision of improving the prevention and management of injury in young people.

SESSION 1: SETTING THE SCENE

EXISTING MORTALITY SURVEILLANCE – NSW CHILD DEATH REVIEW TEAM

Dr Jonathan Gillis

Deputy Convenor, NSW Child Death Review Team

Various bodies in NSW are involved in the surveillance of lethal injury to children through the NSW Child Death Review Team (CDRT). The purpose of the CDRT is to prevent and reduce the likelihood of child deaths in NSW. The team is convened and chaired by the NSW Ombudsman, and includes a range of NSW government agencies and Aboriginal representatives as well as independent members. The CDRT has a variety of functions which include maintaining a register of child deaths in NSW, classification of deaths, identifying trends and patterns, undertaking relevant research, identifying areas that require further research and recommending legislation, policies, practices and services to be implemented. The CDRT is empowered to obtain full and unrestricted access to records from a wide variety of sources, including government agencies, medical practitioners and health professionals (including root cause analyses), any person/ body that delivers welfare services to children, and non-government schools. This is extremely powerful and due to the highly confidential nature of the information, there are strict rules surrounding how the data can be used and presented. The Convenor can authorise the disclosure of information in connection with research undertaken to help prevent or reduce the likelihood of deaths in NSW.

EPIDEMIOLOGY OF PAEDIATRIC INJURIES AND EFFECTIVE INTERVENTIONS, GLOBAL PERSPECTIVE

Professor Rebecca Ivers

Director, Injury Division, The George Institute for Global Health

Professor of Public Health, The University of Sydney

The challenge

In order to approach the issue of injury effectively, it needs to be considered globally as well as locally.

The issues

There are certain populations that are disproportionately affected by injury. Boys are overrepresented in injuries when compared to girls in most categories, and low and middle-income countries as well as the poor and disadvantaged in all countries, are also particularly affected. Controlling injuries is harder in larger states with more dispersed populations for reasons including less supervision of children, poorer quality roads and less police enforcement. Australia is about halfway down the list when it comes to the injury rates globally, with Sweden having the lowest injury rates. Another challenge is implementing timely surveillance systems that identify emerging issues. At present, there is too long a lag which stops the system being as responsive as it needs to be. It is also not easy to obtain good data at the population level.

Possible solutions

What we know works - why Sweden's injuries rates are so low

There is a good evidence base around what works and what doesn't in preventing childhood injury. Sweden is leading the way with its consistently low injury rates. They have good surveillance data, a commitment to research resulting in good evidence, committed leadership, and academic institutes participating in public health policymaking.

Injury prevention requires a multi-sectorial response. What works is an approach that doesn't focus on the individual but rather on the whole system. This includes modifying the environment, engineering design, regulation and enforcement of safety measures as well as education aimed at improving skills and increasing awareness. Consideration has to be given to the developmental and sensory skills of children, which are age-related and evolving, making education of children a less effective strategy than permanent environmental change that is less prone to human error. A coherent prevention strategy with such a multifaceted approach needs support for change, structures to support policy-relevant research, effective implementation and sustained funding for prevention programs.

INJURY IN ABORIGINAL CHILDREN AND HEALTH INEQUALITY – SPECIFIC RESEARCH CHALLENGES

Professor Kathleen Clapham

Professor of Indigenous Health

Australian Health Services Research Institute, University of Wollongong

The problem

Aboriginal children are at higher risk of injury and death compared with non-Aboriginal children. Age specific death rates from all injuries are more than 3 times higher for Aboriginal compared with non-Aboriginal children. Aboriginal and Torres Strait Islander children are five times as likely to die from exposure to smoke, fire and flame. Hospital separation rates for injury are 1.3 times higher than for non-Aboriginal children, and intentional self-harm is over 5 times the rate for non-Indigenous children.

The issues

There are various issues that contribute to increased risk of injury in Aboriginal children including geographical remoteness, challenges in access to adequate services, social disadvantage affecting housing, roads and transport systems, substance misuse, exposure to social stressors including racism, and poor social support.

Despite the burden, there are several data limitations such as lack of documentation on the prevalence, nature and causes of injury in Aboriginal children; under-identification of Aboriginality in hospital data, limited research into the efficacy of child injury interventions in Indigenous communities, and lack of information on the impact of injury and disability.

Possible solutions

There are various steps to be taken in order to improve childhood injury rates in Aboriginal communities, and close the gap. Results from relevant research need to be tested and translated into specific policy and practice for Aboriginal children in consultation with Aboriginal communities, practitioners and researchers.

In summary, the needs are for:

- The identification of gaps, priorities and possible solutions
- High quality quantitative and qualitative data
- Intervention research with effective implementation of findings
- Systems thinking to address inequity
- Local community engagement and cultural awareness
- Enhanced Indigenous research and implementation capacity
- An Indigenous child injury prevention focus within services.

A PUBLIC HEALTH APPROACH TO PREVENTING CHILD INJURY: CHALLENGES AND OPPORTUNITIES

Dr Julie Brown

NeuRA, Neuroscience Research Australia, Injury Prevention Research Centre

The challenge

Injury prevention requires a public health approach involving four key steps:

1. Defining the problem
2. Identifying risk and protective factors
3. Developing and testing prevention strategies
4. Assuring widespread adoption.

There are research challenges in the public health approach to injury including countermeasure development, translation and implementation:

- Research – funding is a major challenge as it is difficult for applications to be competitive for large funding bodies (NHMRC, ARC), and so funding is often in small amounts from many different interested organisations
- Translation – it is difficult to bridge the gap between research and implementation because they are often done by different people and groups - although there have been some good successes in identifying risk factors and protective factors which have been able to be translated (e.g. falls from windows, fencing around pools, child car restraints).

Implementation is particularly a challenge where there is no single entity responsible. Good examples include car restraints where a single agency was responsible and pushed through the changes, whereas there has been little action on off road vehicles where no one body has owned the problem and there are few relevant mandatory standards. Where there are multiple organisations with differing levels of interest, resources and commitment it is hard to identify the right people with responsibility and commitment then engage them to manage the process and effect the change.

Possible solutions

The public health approach is a well tried model and very applicable to injury through the application of countermeasures. Most success in implementation has been where there is up front collaboration so that the people who will be implementing the measure are involved in the research. Another success factor is where clear implementation pathways already exist. Reducing injury in young people is assisted by having one state government agency leading, and regulation such as mandatory product standards. Funding is essential to meeting the challenges across research, translation and implementation. The opportunities include partnerships between organisations across all sectors, compiling existing work and using it as leverage to get to next stages and improved data collection and use.

PREVENTING SERIOUS CHILDHOOD INJURY IN NSW: KEY ISSUES AND FUTURE DIRECTIONS

Mr Gregor Macfie

NSW Commission for Children and Young People

The problem

There is currently no agreed strategic approach to the prevention of childhood injury in NSW and this extends to the collection and dissemination of data on childhood injury.

In terms of hospitalisations, NSW Admitted Patient Data* analysed by the Australian Institute of Health and Welfare (AIHW) show that childhood injury is a significant problem – see Table 1.

Table 1: NSW Admitted patient data 0-17 years*

Indicator	Male	Female	All
Cases	15,624	8,255	23,879 (31 died)
Total patient days	30,823	15,381	46,204
Average length of stay	2.0	1.9	1.9
Cases with high threat to life	945	414	1,359
% cases with high threat to life	6.0	5.0	5.7

*AIHW: Harris CE & Pointer SC (2012). Serious childhood community injury in NSW 2009-10.

The issues

One of the key issues is where to focus prevention efforts. The level of morbidity associated with different causes of injury is one way to look at this. Table 2 shows injury cases by cause and high threat to life (as a proxy for morbidity associated with particular causes of injury).

Unspecified areas are the most commonly cited place of occurrence of childhood injury. This presents issues around how these events should be coded and recorded. It's difficult to understand the root causes of a childhood injuries if the context in which the injury occurred is not adequately captured.

Table 2: Injury cases by cause and high threat to life (HTL) within the NSW Admitted patient data, 0-17 years*.

External cause	Total cases	Cases HTL	% HTL
Transport	3,419	484	14.2
Falls	9,285	402	4.3
Other unintentional	30,823	203	2.5
Assault	563	79	14
Drowning	85	75	88.2
Fire, smoke, heat	644	66	10.2
Self-harm	851	27	3.2
Undetermined intent	208	11	5.3
Poisoning	609	7	1.1

*AIHW: Harris CE & Pointer SC (2012). Serious childhood community injury in NSW 2009-10.

But there are gaps in the data when it comes to where the injury occurred (see Table 3).

Table 3: Place of injury occurrence by age within the NSW Admitted patient data, 0-17 years*

Place	Age group			
	0-4	5-8	9-14	15-17
Unspecified	42.5% (2)	49.3% (1)	46.1% (1)	45.1% (1)
Home	45.8% (1)	21.4% (2)	10.7% (3)	12.2% (3)
School	2.6% (3)	12.2% (3)	10.1% (4)	4.3% (5)
Street/highway	2.0% (4)	4.0% (=4)	6.4% (5)	10.7% (4)
Sports area	0.5% (-)	4.0% (=4)	17.3% (2)	17.9% (2)

*AIHW: Harris CE & Pointer SC (2012). Serious childhood community injury in NSW 2009-10.

There are also problems in looking only at limited sets of data. For example, while data shows that child pedestrian deaths have declined over time, it is possible that this may be partly due to decreased levels of child pedestrian activity (other data suggests that fewer children in NSW walk or cycle to school now than in the past). The imperatives and strategies to reduce childhood injury need to be considered in the context of exposure to risk at a population level and in terms of other desirable policy goals such as encouraging active transport to reduce the risks of chronic disease.

Future directions

We should be wary of approaches that rely too heavily on education to change the risk taking behaviours of young people (risk taking is largely inherent during adolescence) and instead focus more strongly on strategies that protect young people when they inevitably make bad decisions (e.g. by modifying environments where dangerous risks may be taken by young people).

It is important to clarify and agree on a clear set of goals. An overarching goal could be to reduce the incidence of serious injury resulting in death or on-going disability while increasing positive health behaviours.

Successful prevention strategies will require building support for change, links with wider policy drivers (e.g. reducing chronic disease, increasing urban density) and communicating effectively with stakeholders and the public.

PANEL DISCUSSION ONE

- Mortality has decreased but morbidity has increased, and survivors may have on-going health and educational needs influenced by their injuries.
- Keeping incidence low needs to be a priority
- Implementation science is lacking
- Safety standards must be mandated
- Partnership grants with government agencies, occupational health and safety, academic institutions and non-government organisations (NGOs)
- Working with industry to address effective engineering solutions.

What needs to happen for reporting to be more accurate for disadvantaged populations?

- Enhance Indigenous capacity in research
- Cultural awareness
- Clear lines of responsibility for both strategy and implementation.

The gaps in surveillance systems:

- Need to coordinate existing data and facilitate access to it
- Need for timely data linked to mortality data
- There needs to be an acknowledgment of two levels of data:
- Population level for general surveillance
- Detailed data that provides enough information to develop countermeasures.

SESSION 2: APPROACHES TO PAEDIATRIC INJURY PREVENTION

PLAYING IT SAFE IN SPORT: A CLINICIAN'S PERSPECTIVE

Professor Gary Browne

Children's Hospital Institute of Sports Medicine

The problem

Children's participation in a range of sporting activities is to be encouraged and in fact, increased as there are obvious positive health and social benefits. However the prevalence of childhood sports injuries is rising and we need to understand this phenomenon better.

The issues

Concussion is a major problem in sports related injuries. Hospitalisation for concussion is increasing, which places a significant burden on the health system. Childhood concussion is under researched and poorly understood.

Other problems include musculoskeletal injuries, sudden collapse and deficiencies in bystander responses.

Possible solutions

In order to reduce the incidence of sport related injuries in children, the following actions are required:

- Effective and timely surveillance and injury reporting
- More collaborative research
- Evidence-based education programs
- Public and cross-sectorial awareness
- Prevention of adult degenerative disease by better coaching in adolescence
- Improving bystander responses
- Empowering parents to be active participants in injury prevention.

CHALLENGES IN IDENTIFYING NON-ACCIDENTAL INJURIES

Professor Graham Vimpani

Community Child and Family Health

University of Newcastle, NSW Kids and Families

The problem

The number of children presenting with fractures to the Emergency Department is steadily rising and up to half of fractures that occur in children aged less than 18 months are due to abuse.

The issues

It can be difficult to distinguish between intentional and non-intentional injuries due to the varied ways that children present with injury.

Possible solutions

It is essential to recognise the patterns that should raise suspicion and to ask questions to distinguish between intentional and non-intentional injuries. Accordingly, a new set of observation charts have been developed for Emergency Departments to encourage clinicians to think more about potential abuse when children are admitted with injuries. The importance of parental supervision needs to be highlighted. A number of unintentional injuries result from acts of omission, that is, supervisory neglect due to unrealistic expectations from parents about what their children are developmentally capable of doing. There are issues surrounding not asking questions regarding supervision as there is a mentality that “it could happen to anyone”. We need to overcome this and be more vigilant. It should also be appreciated that the risks for intentional injury coexist with many of the risks for non-intentional injury and can be addressed by systems approaches that tackle socio-economic issues.

HEALTH AND DESIGN: JOINING FORCES FOR CHILDREN'S WELLBEING

Dr Kate Bishop

Faculty of Built Environment, University of NSW

The challenge

There is a direct relationship between health and the built environment and in order to improve health outcomes these two sectors and sets of professionals need to work closely to design safer environments for children.

The issues

Shifts in social attitudes and environmental opportunities in cities in recent years directly affect the use and experience of the built environment and this has ramifications for children's health, safety and wellbeing. Urban childhoods are increasingly being lived in private spaces rather than public spaces. Community attitudes towards young people are ambivalent and this is problematic because it can isolate them and create added risk. Children and young people play little part in civic and social processes. There is scope for this to change, to add their voices to planning and design. Children need advocates – children's champions who will push for children's outcomes in political and social processes. Technology influences children's active behaviour and their use of the outdoors. That issue receives attention as a causal contributor, but it is only one component in the complexity of injury. For injury reduction to be sustainable and feasible, the relationship between children and the environment in cities must be confronted.

The solution

There are changes that could be made in the areas of research, policy and the practice of the child health profession that could directly improve the relationship between children's health and the built environment. Cultural shifts including a more active involvement of professionals in relevant design processes and a more conscientious inclusion of built environment professionals in health forums. Design is a direct intervention. If health professionals, who understand children's needs, work alongside designers, health agendas would be translated much more readily into the built environment. Engaging in collaborative research, contributing to relevant guidelines and educating people creates awareness amongst built environment professionals. However it is not until health professionals are directly involved in building planning processes, including shaping design briefs and planning policies that their knowledge will have a significant impact on built environment projects.

SAFETY IN DESIGN

Associate Professor David Eager

University of Technology Sydney

The challenge

It is possible to reduce the risk of injury through safe design and engineering. Risk is an important element in childhood development, so it cannot be eliminated completely while maintaining the expectation that children will develop their own risk management abilities.

Problems can be anticipated, and resolved with simple solutions (See Figure 1). Australian Standards already take obvious and measurable hazards into account, for instance risk of strangulation (see Figure 2).

Fig 1: Foreseeable misuse and interventions for child safety in playground design



Prepared by David Eager for the Paediatric Injury Prevention and Management Research Forum - 1 Aug 2014

Fig 2: Example of playground equipment and surfacing - General safety requirements and test methods from Standards Australia

UTS AS 4685.1:2014 General requirements

Protection against strangulation

- Openings that allow entry for the **head, neck or torso** by head first or feet first passage are potentially dangerous
- When the child's head gets caught and they can not support themselves with their feet there is a risk of strangulation or severe neck injury ie 600 mm above the standing surface
- The danger zone is between 89 mm and 230 mm

Prepared by David Eager for the Paediatric Injury Prevention and Management Research Forum - 1 Aug 2014

The issues

There are another two examples which illustrate the issues: moveable soccer goals and trampolines.

Safety concerns about moveable soccer goals have been raised around the world. There have been in excess of 40 deaths and a range of serious injuries worldwide, including at least seven deaths and one paraplegic injury in Australia. Blunt force injuries and trauma to the head, neck, chest and limbs have occurred from moveable soccer goals due to:

- Instability
- Goals becoming unanchored
- Goals with inadequate anchoring
- Inappropriate or ineffective installation
- Inappropriate use, such as swinging on cross bar.

It is well known that trampolines continue to be a major source of childhood injury. In Australia 25% of all childhood play equipment injuries are attributable to trampolines.

There are 3 primary sources of trampoline injury, namely:

- Falling off the trampoline;
- Falling onto the trampoline frame and spring system; and
- Multiple user collisions.

Most trampolines that have frame-padding still expose the user to dangerous falling hazards. There are potential hazards is the spring systems of most trampolines (even trampolines such as the SpringFree that claim to be safe). When consumer products cause death or serious injury, legislation is often passed or regulations put in place to protect the public. Currently the Australian Competition and Consumer Commission or ACCC is the organisation tasked with this important responsibility. It is an offence to supply consumer goods or product-related services that do not comply with mandatory standards. Penalties are serious. There are a large number of mandatory standards relating to children's products. The mandatory standards address the following safety and design issues:

- Net attachment & anchor
- Structural integrity
- Impact hazard
- Entrapment
- Stability
- Labelling

Possible solutions

Two examples of safe design are:

- Portable soccer goal posts (mandatory ACCC Standard)
- Domestic trampolines (intended mandatory ACCC Standard)

It is not all doom and gloom. Australia will lead the world when the ACCC passes legislation in 2014 mandating minimum safety requirements for all domestic trampolines sold into the Australian market.

KIDS ON FARMS – INJURY HAZARDS AND PREVENTION

Dr Rebecca Mitchell

(On behalf of Associate Professor Tony Lower)

Australian Centre for Agricultural Health & Safety

The problem

NSW, along with Queensland, has high numbers of childhood farm non-intentional fatalities compared with other states, and NSW lacks an injury surveillance unit.

The issues

The primary causes of childhood injury on the farm are drowning and quad bikes and there is currently a lack of good data on farm-related morbidity.

Possible solutions

Farmsafe Australia's *Child Safety on Farms Program* for preventing child farm injury and death includes the following suggestions:

1. Promoting safe fenced-in safe play areas for children on farms as more feasible than fencing off hazards such as large waterways.
2. Promoting supervision
3. Ensuring that the house has secure fencing so that children have reduced access to hazardous areas of the farm
4. Wearing helmets on two wheel motorcycles and horses
5. Not allowing children (under 16 years) on quad bikes of any size as a driver or passenger. Note even the small supposedly 'child-sized' quads are also in the coronial database.

PANEL SESSION TWO

Much of the discussion again focused on data gaps and the view was that we should combine state wide data, including the capacity for data linkage. There are challenges such as emergency department (ED) coding in real time and there needs to be a coherent strategy moving forward.

SESSION 3: PAEDIATRIC INJURY MANAGEMENT: PRIORITIES AND OPPORTUNITIES FOR RESEARCH

PAEDIATRIC INJURY MANAGEMENT IN NSW

Professor Danny Cass

Director of Trauma

Children's Hospital Westmead

Much of the discussion so far in the forum has been about a range of injury types across the severity spectrum. The focus in this session is on severe injuries and while the system in NSW now achieves results that are among the best in the world, there are still challenges. These children usually have multiple injuries involving multisystem interventions where high quality communication is essential between teams. This is complicated by the fact that those children at highest risk of severe injury tend to come from vulnerable groups in the community. Such children usually need rapid access to theatre and one of the most common problems in less experienced centres is that key decisions are made by staff who are too junior. There is also fragility in the sustainability of the current system, with uncertain succession planning to maintain the consultant-led trauma services at this point in time.

A retrospective review of the NSW Trauma Registry was conducted in 2014, looking at trends in severely injured children aged under 15. Of over a thousand severely injured children, two thirds were boys. The most common mechanisms were road trauma and falls. Over 30% of injuries occurred at home. Of the injuries caused by violence, nearly half were in infants less than 12 months old.

The key message for service planning is that children treated at a paediatric trauma centre have between three and six times better odds of survival than at an adult trauma centre. That means triage, transfer and bypass protocols are essential.

There is also not a lot of evidence that prevention measures are helping as the numbers of severe injury presentations have remained constant for several years.

STATE-WIDE MONITORING TO INFORM BEST PRACTICE IN PAEDIATRIC INJURY

Ms Kellie Wilson

Clinical Review Officer

NSW Institute of Trauma and Injury Management (ITIM)

The problem

81.5% of severely injured children in NSW require definitive treatment at a Paediatric Trauma Centre (PTC) however, less than one third are taken directly to a PTC.

As mentioned by Professor Cass, we have identified that children who receive definitive care in Adult Major Trauma services in NSW are 3-6 times less likely to survive than those taken to the NSW PTCs. This

includes children with Injury Severity Scores that fall within the range of preventable or potentially preventable survivability. These findings are paralleled in international literature.

The issues

48% of inter-hospital transfers occur within the Sydney metropolitan region with 35% and 13% originating in regional and remote areas respectively. Inter-hospital transfer times are between 4-6 hours, requiring activation and utilisation of paediatric or adult retrieval teams. This delay is unacceptable and we should endeavour to reduce it. There is also evidence of non-adherence to bypass protocols in transport of injured children.

Possible solutions

Further analysis through research is required to allow for a thorough, systematic evaluation of existing paediatric care pathways from the time of injury to definitive care and the impact on: quality of life at 6-12 months, appropriateness and delivery of care, costs of health service delivery and different modes of transport to the point of definitive care.

In parallel with research, the NSW ITIM is currently undertaking an independent state-wide review of the pre-hospital trauma system which will allow for an additional layer of analysis of pre-hospital trauma bypass and treatment protocols in consultation with key stakeholders. An agreed minimum data set across the system will be an important enabler.

A REVIEW OF THE EVIDENCE ON WAYS TO DELIVER CARE FOR SEVERELY INJURED CHILDREN AND THEIR FAMILIES

Associate Professor Kate Curtis

Sydney Nursing School, St George Hospital

The problem

Trauma is immediate, long lasting, complex and life changing. Not all trauma is the same, and with each mechanism comes its own complexity of injury and emotion. Often there are other family members injured, the family unit is torn, generally displaced far from home, and there is a huge amount of uncertainty about the future.

Current work and issues

To determine how to provide support and care in the best way possible for this unique group of people, an integrative literature review of the international literature was undertaken to determine what models of care exist for critically ill children and their families that span the trauma journey, and the evidence of their impact on the patient, their family, staff and the hospital.

Initial searches identified 3141 articles about children hospitalised for acute illness. Through a systematic screening process, nine articles were found which reported on models that reduced parental anxiety, as parents felt more informed, confident in the care and empowered. These outcomes were possible because of improved communication. These models were limited to some aspects of the parental experience or patient care and there was not one model that provided care for the whole family and patient journey.

Possible solutions

Some of the priorities identified for the needs of families are to have the care tailored to the individual, flexibility of policies, improved coordination of care, information about resources, and emotional care. Models of care that have family centred care principles, or implement strategies to improve the experiences of parents are helpful, but there remain multiple gaps and a lack of evidence to inform what interventions we should implement.

To address this gap in knowledge, we interviewed the paediatric trauma coordinators in Victoria, Queensland, NSW and South Australia, who are the nurses in the paediatric trauma centres who oversee care while the child is in hospital. This led to the development of a multi-centre survey, asking staff providing care for trauma patients and their families what they perceive the gaps in care to be if any, and their opinions on what is done well. The idea is to gain insight from across the country to share knowledge and develop strategies for change if needed. We will also pilot a Major Trauma Family Support Coordinator in Adelaide who will provide coordination of care and support for families for 12 months. We will be closely analysing that role to determine if and how it improves outcomes for families and providers.

DATA LINKAGE FOR PAEDIATRIC TRAUMA AND HEALTH SERVICES RESEARCH

Dr Rebecca Mitchell

Senior Research Fellow, University of NSW

The problem

Paediatric injury research that involves national data linkage is currently taking an excessive amount of time just to get through the approval stage. Data linked through CHeReL (Centre for Health Record Linkage) involves using identifiers to align information from multiple data sources for analysis, facilitating analysis of the linked de-identified data. With appropriate identifiers, a range of data sources can be linked, for example using admitted patient data, emergency department data, and survey data.

The issues

- The clerical administration around submitting multiple ethics applications in each state and territory, and sometimes lengthy wait times for data custodian approvals.
- Indiscriminate variability between information available for research across states and territories, e.g. some data custodians not being willing to provide access to some data variables critical for research, such as date and time of hospital admission/ separation.
- Western Australian Health Department now requiring each WA hospital CEO to give their approval for their hospital's data to be used in data linkage studies where hospital identifiers are needed to adjust for case mix differences.
- Waiting for data custodian approvals, Human Research Ethics Committee (HREC) approvals, data linkage, creates enormous difficulties for researchers who have limited timeframes and research budgets. It currently takes between 9 months to 12 months to obtain all the approvals. That is a long time with no research output.

Possible solutions

- Develop national data linkage application documentation for data linkage studies that can be used across states and territories – one size fits all.
- Have a transparent data application and approval process in each state and territory.
- Have a standard confidentiality agreement for use in all states and territories to use linked health data for research purposes.
- Have one HREC that is able to provide approval for national data linkage studies (follow the NHRMC single ethics review e.g. clinical trials)
- Investigate the potential of storing and making available linked data extracts from completed studies for future research.

PLANNING DISCUSSION

The participants broke in to small table groups and divided the high level challenges needing attention into the following areas:

1. Surveillance and timely data
2. Increasing evidence-based implementation capacity in NSW
3. Aboriginal and Torres Strait Islander children
4. Developing injury management services
5. Aims for a leadership group

1. Surveillance and timely data

Data are very important for the first step of the process of defining the extent of the problem.

Data issues

There are various data issues that require attention:

1. Data collection and analysis needs to be undertaken in a timely, consistent, comprehensive and systematic manner.
2. There's a need for someone to take responsibility for coordinating action in response to 'red flags'.
3. Data need to cover the spectrum from prevention to management and from populations to hospitals and service quality.
4. Data quality must be high and maintained.
5. The data should be capable of showing trends and be able to be benchmarked within NSW, between services and internationally.

Ways forward

Timely data is needed for all participants in injury prevention and management; including policy makers, regulators, urban design, those working with sports and non-accidental injury. There is also scope to flag areas that require more in-depth research. A helpful step would be to create a registry of data registers so that people have a comprehensive idea of available data, and data linked through CHeReL (Centre for Health Record Linkage), relevant to paediatric injury. The Health Statistics NSW working in partnership with the NSW Institute of Trauma and Injury Management and Australian Institute of Health and Welfare (AIHW)'s Injury Surveillance Centre might be able to facilitate this linkage. There is a need for a simplified process to access these data and a single application process with simplified ethical approval and data custodianship would be very helpful.

Regarding data quality, the WHO minimum datasets (http://www.who.int/violence_injury_prevention/surveillance/en/) could potentially be accompanied by paediatric supplementary data to form a minimum data standard. There is also a need for people to manage the databases on an on-going basis. Tasks include identifying gaps in all current databases and coordinating action in response to what is being observed in the data. This requires a coordinating group that is across all agencies and has a particular interest in injury. They can identify next steps for research, priorities and predicting risk. Other helpful data would include an injury surveillance system and hazard reporting.

2. Increasing evidence based implementation capacity in NSW

Where we are now?

Implementation science is a relatively new field that attempts to bridge the gap between research and practice. There is patchy evidence in the field of childhood injury and a need for more epidemiology research assisting the development of interventions for some injury types. Where there are successful interventions or strategies, there needs to be a way of spreading them and implementing widely. At present, implementation is an organic process, where partnerships are formed depending on the context of the injury and people who have the capacity to become involved. Ownership of some problems is difficult. For example road agencies feel helpless when it comes to off-road injuries therefore government or peak bodies with a generic interest in injury prevention are needed. There is strong interest from government in implementation science because it has the potential to result in health benefits with less waste. There is some investment in implementation science e.g. NHMRC partnership and ARC linkage grants. Furthermore, the NHMRC's emphasis on translation is an attempt to increase engagement in this area, with increasing detail about translation of research being required in funding applications.

Where do we want to be?

Implementation science needs to be built into the research process. We ideally require investment in implementation science that will result in the largest gains in prevention of injuries in children. Work in this area could be prioritised based on burden of injuries and availability of scalable interventions. Implementation science should also focus on targeting vulnerable populations. Partnerships should include all stakeholders and be appropriate to the particular injury prevention strategy. These can include government, private industry, non-government organisations, regulators, researchers, health care providers, consumers and health promotion practitioners. These projects should include economic evaluation and make the most of existing knowledge of previous successes and failures. Efforts should be made to communicate findings to stakeholders and the community through appropriate channels.

How do we get there?

In order to achieve these goals, it's essential to identify complete, accurate, close to real time data on injuries as well as areas of focus. Core funding is also required to enable sustainability of centres dedicated to implementation science. Government investment in positions that focus on injuries (or child injuries), and philanthropic and seed funding will help this process, in addition to multi-sectorial collaboration, and good leadership and advocacy.

3. Aboriginal and Torres Strait Islander children

The vision

The aim is to reduce and close the injury gap between Indigenous and non-Indigenous Australians by:

1. Addressing social determinants
2. Building resilient families and communities
3. Addressing the inequalities between urban, rural and remote areas
4. Focusing on prevention

What are we trying to deliver?

In order to achieve this vision, it will be essential to work with communities to build in safety as core business and facilitate community ownership of this issue. Researchers need to partner with service providers to address community needs and tap into, and build on, existing leadership. Data need to be improved and research proposals need to be flexible to community needs and participation. Existing data should be utilised to implement policies and practices that address injury inequality and data should be made available to communities through surveillance. It will also be important to gain a greater understanding of particular risks as well as protective factors.

Where are we now?

At present, while we know the problem broadly, there are limited data. We face various challenges in sustaining efforts e.g. project based initiatives and there is a burden on organisations which often have a limited capacity and may not have sufficient funding.

What are the challenges?

There are various challenges contributing to the increased rates of injury in Indigenous populations. These include:

1. Cultural understanding of policy makers
2. Top down approach
3. Translation of evidence to practice
4. Lack of practice informed research

How to meet them

A bottom up, flexible, consultative approach is required that will address social determinants and include skillsets that will enhance the capacities of the community. We need to respond to priorities, build sustainable solutions, and build flexibility into funding. A long-term view to reducing inequality is needed although short-term wins are also important. Language plays an important role in perception and stigma, for example the term 'injury' suggests a deficit so it may be useful to refer to 'child safety'. Community engagement is very important, and involves building the capacity of individuals, organisations and communities, such as liaison workers and community workers.

Data play an important role in bridging the gap. We need to utilise existing data to identify targets where large inequalities exist and where significant gains can be made. For example in the area of poisons and medications, the utilisation of existing and available evidence such as the Closing the Gap Clearinghouse can guide implementation interventions in communities. Uptake of known effective injury interventions for Indigenous children has led to marked improvements.

There is a need for further intervention research which focuses on modifiable aspects of injury processes and outcomes, collecting evidence on how interventions works and ways to enhance sustainability.

In order to move forward partnerships and collaboration will need to be improved to better utilise existing knowledge/skills. A number of different groups could be involved in managing this process including NSW Kids and Families, Transport NSW, NSW Health, Australian Injury Prevention Network (AIPN) and Community Controlled Organisations.

4. Developing and improving Injury Management Services

The major trauma system in NSW is focused on adults, and paediatric trauma is under-represented. Nonetheless the major paediatric trauma centres perform at, or close to, international best practice with a strong research tradition aimed at quality improvement. Quality issues arise in centres that see small volumes of paediatric trauma.

Where are we now?

There are currently challenges in care including timely access to definitive management. There are no outcomes data for rural and remote points and there is a need for stronger linkages to be established in these regions e.g. using telehealth. There is also a lack of quality of live data and a better process should be established for activating retrieval. There is a need for data to evaluate models of care, retrieval and ambulance practices as well as the role of trauma centres from children. There is also increasing demand for paediatric rehabilitation services.

Moving forward

In order to improve services, rapid access to definitive care is required. In order to improve rural and

remote outcomes and inform service provision we need on-going monitoring of outcomes. Addressing challenges in providing care is a major priority. There is currently ethics approval pending and an NHMRC grant application for a study on “Improving health outcomes in children suffering major injury”. This will help to answer why outcomes are worse in children not admitted directly to major trauma centres. There is currently no tool to benchmark in-hospital models of care. There is potential for development of plans for longer term on-going psychosocial care after injuries, and also potential for a “virtual” trauma team which could provide services covering a wide geographical area.

Clinical care provision and oversight

Trauma bed care or full time after hours trauma case managers for admissions are needed as is psychological care and continuity of psycho social care e.g. a full time major trauma social worker. One NGO is looking to source funding for clinical psychologists for all paediatric major trauma services. Rehabilitation for all paediatric major trauma admissions needs to be considered. For this we need resources to support in-patient rehabilitation capacity to ensure quality of care throughout the journey. This is currently inadequate and as a result we are unable to ensure continuity and integration.

One suggestion was to conduct a state wide audit of in-hospital service (the whole journey) and benchmark this against Denver and Philadelphia Children’s Hospitals.

Education

Current education in paediatric trauma education and the adequacy of such education are areas to investigate a plan for improvement. We therefore need an analysis of rural and regional areas and outcomes.

Outreach simulation could help to achieve higher standards of end to end care. This would involve a modified applications approach and would need on-going reinforcement such as “train the trainer” to be successful. E-Learning is another useful tool. It would be helpful to develop a program for trauma care on the wards for clinicians with a research project to evaluate outcomes. A paediatric trauma app (ITIM – ACI) is also currently in development.

Quality assurance and data linkage

In order to monitor how well we are delivering care we need to monitor appropriateness of care. This includes cases of variance in clinical care and cost of care. Going beyond acute care, a rehabilitation database would be useful, potentially through powerchart.

More data need to be collected and a cost analysis needs to be done to see if we are achieving value for healthcare. Once we have more data, then the goal will be to develop data linkage to inform research. It will be important to engage more broadly with other fields, such as the university sector, for expert input including health education and economic analysis.

5. Developing a Leadership group

Leadership – who will lead?

Leadership will involve collaboration from various fields including:

1. Government: NSW Kids and Families, NSW Transport, Sydney Children’s Hospitals Network, Population Health, Institute of Trauma and Injury Management, Agency for Clinical Innovation
2. Non-government sector
3. Research organisations, institutes and universities

Aims

A leadership group will need to coordinate and strategise around current activity across prevention, treatment, care, support, research and policy with a focus on information sharing for research, data, and data linkage. They will need to identify priority areas, such as specific areas of further work needing to be

done, and appropriate people to conduct that work. The leadership group will need to identify research grants and policy-relevant research and identify opportunities for evidence informed action and links to other policy agendas.

Potential group members include:

- Government – injury control agencies, health, advocate for children
- Child Death Review Team
- Researchers
- Clinicians
- NGO, consumer, young people/parents.

We need to build a case for a leadership group and for future infrastructure and administration to support the group. This can be minimal to start with and grow from there. Communication through networks is essential. Additional considerations include whether there is a better name/concept than injury prevention, how to approach community safety and how to advocate and communicate the process.

PAEDIATRIC INJURY PREVENTION + MANAGEMENT RESEARCH FORUM



A Research Forum Coordinated by



PROGRAM

Date & Venue:

Friday 1 August, 2014

North Sydney Harbourview Hotel, 17 Blue Street, North Sydney

About the Forum:

The Paediatric Injury Prevention and Management Research Forum is an initiative of the NSW Research Alliance for Children's Health (RACH), NSW Kids and Families, and the Population Health Research Collaborative (PHRC), Sydney Children's Hospital Network.

Goal:

To reduce incidence and the impact of paediatric injury in NSW to the best data internationally

Purpose:

- Identify priorities for research that inform service development in paediatric injury prevention and management
- Facilitate communication between clinicians, researchers and planners
- Promote translational research to inform policy and practice

MORNING

8.00	Registration
8.30	Welcome and strategic overview <i>Professor Les White, AM, NSW Chief Paediatrician, NSW Kids and Families</i>
8.35	Opening address <i>Hon. Jillian Skinner, MP, Minister for Health and Minister for Medical Research</i>
8.50–10.15	Session 1 : Setting the Scene
8.50	Existing mortality surveillance – NSW Child Death Review Team <i>Dr Jonathan Gills, Deputy Convenor, NSW Child Death Review Team</i>
9.00	Paediatric injuries: burden, risk factors and effective interventions <i>Professor Rebecca Ivers, Director, Injury Division, The George Institute for Global Health</i>
9.15	Injury in Aboriginal children and health inequality - Specific research challenges <i>Professor (Indigenous Health) Kathleen Clapham, Australian Health Services Research Institute, University of Wollongong</i>
9.25	A public health approach to preventing child injury: challenges and opportunities <i>Dr Julie Brown, Senior Research Fellow, Neuroscience Research Australia</i>
9.35	Preventing serious childhood injury in NSW: key issues and future directions <i>Mr Gregor Macfie, Director Policy and Research, NSW Commission for Children and Young People</i>
9.45	Panel discussion <i>Dr Norman Swan, Facilitator</i>
10.15–10.30	Morning tea
10.30–12.40	Session 2: Approaches to paediatric injury prevention
10.30	Playing it safe in sport: A clinicians perspective <i>Professor Gary Browne, Emergency Medicine, The Children's Hospital at Westmead</i>
10.40	Challenges in identifying non-accidental injuries <i>Professor Graham Vimpani, Community Child Health, University of Newcastle</i>
10.50	Health and Design: Joining forces for children's wellbeing. <i>Dr Kate Bishop, Landscape Architecture, Built Environment, University of NSW</i>
11.00	Safety in Design <i>A/Professor David Eager, University of Technology Sydney</i>
11.10	Kids on farms - injury hazards and prevention <i>A/Professor Tony Lower, Australian Centre for Agricultural Health & Safety</i>
11.20	Panel discussion <i>Dr Norman Swan, Facilitator</i>
11.40	Group discussion: Strategic planning <i>Dr Norman Swan, Facilitator</i>
12.40–1.30	Lunch

AFTERNOON

12.40–1.30	Lunch and sessions
12.40–1.00	Parallel session: Group leader discussion <i>Dr Norman Swan</i>
1.30–1.45	Feedback <i>Dr Norman Swan</i>
1.45–3.00	Session 3 : Paediatric injury management: Priorities and opportunities for research
1.45	Paediatric Injury Management in NSW <i>Professor Danny Cass, Director of Trauma, Children's Hospital Westmead</i>
2.00	State-wide monitoring to inform best practice of paediatric injury <i>Ms Kellie Wilson, Clinical Review Officer, NSW Institute of Trauma and Injury Management</i>
2.10	A review of the evidence on ways to deliver care for severely injured children and their families <i>A/Professor Kate Curtis, Sydney Nursing School, St George Hospital</i>
2.20	Data linkage for paediatric trauma and health services research <i>Dr Rebecca Mitchell, Senior Research Fellow, University of NSW</i>
2.30	Panel discussion <i>Dr Norman Swan, Facilitator</i>
3.00–4.00	Working tea: Strategic planning <i>Dr Norman Swan, Facilitator</i>
4.00–4.30	Wrap up
4.00	Feedback
4.20	Future direction <i>Professor Chris Cowell, Director of Research, Sydney Children's Hospital Network</i>
4.30	Close

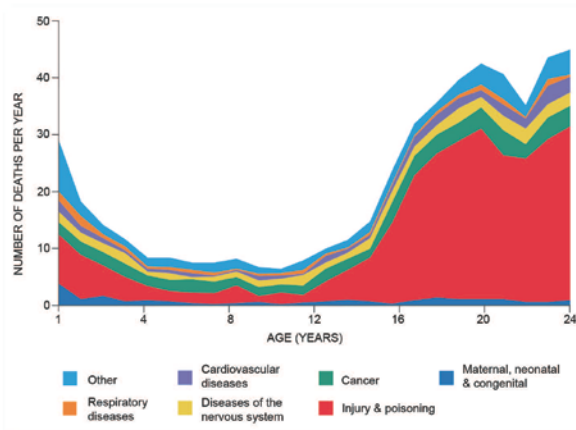
NSW PAEDIATRIC INJURY PREVENTION AND MANAGEMENT RESEARCH FORUM

The Paediatric Injury Prevention and Management Research Forum on 1 August 2014 was the first collaborative initiative of the NSW Research Alliance for Children's Health (RACH), NSW Kids and Families and the Population Health Research Collaborative (PHRC), Sydney Children's Hospital Network. RACH and the PHRC were established to promote collaboration, research development and translation across existing groups conducting research in health services and population health relating to children and young people.

Background

Injury is the leading cause of death and hospitalisation in children and young people between one and 24 years of age in Australia. Between 2002 and 2011, nearly 3,000 children and young people died from injuries and poisonings (see figure below). Child injuries impact heavily on the health system and disproportionately affect children from disadvantaged groups. Deaths of Aboriginal children due to external causes are almost three times higher the rate for non-Aboriginal children.

Leading causes of death in young people aged 1-24 years, NSW, 2002- 2011*



*Centre for Epidemiology and Evidence. The Health of Children and Young People in NSW: Report of the Chief Health Officer 2014. Sydney: NSW Ministry of Health, 2014.

Goal

The goal of this forum was to identify ways to reduce the incidence and impact of paediatric injury in NSW and strive to match the best rates and standards internationally.

Aims of the forum

The aims of the forum were to:

- Identify priorities for research to inform paediatric injury prevention and service development
- Facilitate communication between clinicians, researchers and planners
- Promote translational research to inform policy and practice.

Communication and collaboration

Seventy-eight people attended, which led to opportunities for communication between forum participants, including from academic, education, transport, and health sectors. The forum featured talks from leading researchers, clinicians and academics on childhood injuries.

Attendees were asked to identify and discuss:

- Gaps in knowledge, evidence known about effective prevention and care
- Challenges and obstacles which need to be addressed
- Actions which could make a difference
- Areas for collaboration
- Questions to drive the research.

A number of themes during the day were addressed in group discussions on:

- The need for leadership in paediatric injury prevention and management in NSW
- Data and surveillance in NSW to monitor trends and initiate timely responses
- Injury in young Aboriginal and Torres Strait Island people as a high priority
- Translation of known evidence and implementation of known interventions
- Health Services Research initiatives driven by data trends and identified gaps.

NSW PAEDIATRIC INJURY
PREVENTION AND
MANAGEMENT FORUM

FORUM SUMMARY & PROPOSED
STRATEGIC DIRECTIONS

ACTIONS MOVING FORWARD

Establish a leadership role in surveillance, data analysis and facilitating the research agenda.

Create a cross-sector steering group to guide the process of identifying and defining strategies for the field of paediatric injury.

The steering group will undertake the task of priority setting for research in the field of paediatric injury in NSW to inform the evidence base for policy and guideline development across sectors.

In response to need, the steering group will facilitate the collation and analysis of datasets for the surveillance, monitoring and benchmarking, including opportunities to identify emerging issues and highlight dangerous products, equipment and settings.

Ensure that high-quality, timely service-related data is collated and available to inform further development of services for acute and ongoing management of children and young people surviving serious injury in childhood.

Develop human capital, knowledge and skills relating to paediatric injury prevention and management. This could entail accessing current expertise to facilitate mentoring opportunities.

Develop funding mechanisms that will facilitate and support research initiatives and cross-sector collaborations that will progress the research required to inform policy for injury prevention in NSW.

MESSAGES IDENTIFIED DURING THE FORUM – RESEARCH PRIORITIES AND PROMOTION OF TRANSLATION

- Different types of injury need different types of solutions and required implementation from different sectors.
- Injuries in children and young people can occur within a context of common social conditions and risk factors such as inadequate parental supervision, socio-economic disadvantage, and environments that are not planned with children in mind.
- Examples of specific injury types and settings were discussed, including sports injuries, injuries on farms and in rural settings, injuries on playground equipment, and on and off road transport injuries. This list of topics presented on the day is a sub-set of the potential injury types and settings which could be included in further development of collaborative research and translation in the field.
- Aboriginal communities are a high priority. Injury prevention needs community engagement and ownership for effective change.
- Prevention needs to be informed by solid evidence and targeted to settings, risk populations and injury types.
- Prevention research should focus on outcomes and be tightly linked to implementation science, an area which needs capacity building in NSW.
- Concussion and its consequences in children and young people need to be better understood.
- Inflicted injuries are still under-recognised and sustained professional training is required.
- Injury management in major paediatric trauma services in NSW is close to international best practice with a strong research tradition focused on quality improvement.
- High quality data of all levels need to be available in an appropriate timeframe for effective action.
- Participants were keen to engage in further opportunities to facilitate ongoing collaborations and develop leadership on injury into the future.
- There is a need for cross-sector support to develop initiatives with sustainable models for cost-effective programs.

The forum was hosted by:

PAEDIATRIC INJURY PREVENTION AND MANAGEMENT RESEARCH FORUM DELEGATE AND INVITATION LIST*

* All people listed either attended or gave consent for their details to be included on this list.

First Name	Surname	Position	Organisation
Sarah	Adams	Acting CNC, Trauma Services	Sydney Children's Hospital
Susan	Adams	Staff Specialist, Head of Department, Paediatric Surgery	Sydney Children's Hospital
Hatem	Alkhouri	Research Fellow	Emergency Care Institute/ Agency for Clinical Innovation
Phillip	Armstrong	Consulting Director	Marcom international
Christine	Baird	Principal Advisor, Injury Prevention Partnership, Injury Strategy	Authority Motor Accidents Authority Safety, Return to Work and Support
Robyn	Bale	Director, Early Childhood and Inter-Agency Programs	Education and Communities
Louise	Baur	Prof Paediatrics and Child Health; Head, Weight Management Services	Discipline of Paediatrics & Child Health, Sydney School of Public Health, University of Sydney, The Children's Hospital at Westmead
Ben	Barnes	Principal Research Scientist	NSW Centre for Road Safety Policy and Regulation, Transport for NSW
David	Bennett	Senior Clinical Adviser, Youth Health and Wellbeing; Clinical Program Director (Medical) – Priority Populations, SCHN.	NSW Kids and Families; Sydney Children's Hospitals Network
Andrew	Berry	State Director	Newborn and paediatric Emergency Transport Service (NETS)
Elizabeth	Best	Manager, Priority Populations	NSW Kids and Families
Lynne	Bilston	Professor, Principal Research Fellow	NeuRA, Neuroscience Research Australia, UNSW
Kate	Bishop	Senior Lecturer - Landscape Architecture, Research Cluster Staff, People and Place	UNSW, Built Environment
Kerryn	Boland	NSW Children's Guardian & Acting NSW Commissioner for Children and Young People	NSW Children's Guardian & Acting NSW Commissioner for Children and Young People, NSW Office of the Children's Guardian
Jeffrey	Braithwaite	Foundation Director	Australian Institute of Health Innovation, UNSW
Susan	Broomhall	Program Evaluation Analyst,	Fire & Rescue NSW

First Name	Surname	Position	Organisation
		Community Engagement Unit	
Antony	Brown	Associate Professor	School of Rural Health, Dubbo Campus, University of Sydney
Julie	Brown	Senior Research Fellow	NeuRA Injury Prevention Research Centre, Neuroscience Research Australia
Gary	Browne	Professor	Paediatric Sports Medicine, Sydney Children's Hospitals Network
Michael	Brydon	Director, Clinical Operations	Sydney Children's Hospitals Network
Elisabeth	Callister	Student Engagement and Interagency Partnerships	Health and Wellbeing, Public Schools NSW
Danny	Cass	Director, Trauma Unit, CHW	Sydney Children's Hospitals Network
Eric	Chalmers	Chief Executive	Kidsafe ACT
Kathleen	Clapham	Professor	University of Wollongong
Chris	Cowell	Director of Research	Sydney Children's Hospitals Network
Jonathan	Craig	Professor Clinical Epidemiology, School of Public Health	Sydney Children's Hospitals Network, The University of Sydney
Kate	Curtis	Associate Professor	Sydney Nursing School, St George Hospital
Sarah	Dalton	Clinical Advisor	Clinical Excellence Commission
Anne	Darton	Statewide Burn Injury Service Network Manager	Statewide Burn Injury Service, Agency for Clinical Innovation
Anne	Deans	Chief Executive	YouthSafe
April	Deering	A/Manager, Child and Family Health	NSW Kids and Families
Charles	Dennis	CEO	Day of Difference
Candace	Douglass	Department Head	Kids Health, The Children's Hospital at Westmead
Donovan	Dwyer	Trauma Director SCH	Sydney Children's Hospital
David	Eager	Associate Professor, School of Elec, Mech and Mechatronic Systems	Faculty of Engineering & IT University of Technology Sydney
John	Eastwood	Director, Community Paediatrics, Associate Professor	Child & Family Clinical Services, Community Health
Adrienne	Epps	Senior Staff Specialist and Head of Department, Rehabilitation	Sydney Children's Hospital Randwick, Rehabilitation Dept.
Christine	Erskine	CEO	KidsSafe, NSW
Maureen	Feagan	Director	<i>Kids and Traffic</i> , NSW Early Childhood Road Safety Education Program
Jeffrey	Fletcher	Clinical Director of Paediatrics	Department of Paediatrics, The Canberra

First Name	Surname	Position	Organisation
			Hospital
Cameron	Fong	PhD student & Photographer	NeuRA Neuroscience Research Australia
Chris	Franks	NSW K+F Board Member	NSW Kids and Families
Carla	Ghisla	Research Officer	The Children's Hospital at Westmead
Sally	Gibson	Senior Manager Youth Health and Wellbeing	NSW Kids and Families
Jonathan	Gillis	Deputy Convenor	NSW Child Death Review Team
Lynelle	Hales	Chief Executive Officer	Southeastern Sydney Medicare Local
Catherine	Hawke	Associate Professor, School of Rural Health	School of Rural Health, University of Sydney
Andrew	Holland	Professor of Paediatric Surgery, Sydney Medical School	The University of Sydney
Joanna	Holt	Chief Executive	NSW Kids and Families
Rick	Iedema	Research Manager	Agency for Clinical Innovation
Vivian	Isaac	Project Officer, Population Health Research	Sydney Children's Hospitals Network
Rebecca	Ivers	Director, Injury Division	The George Institute for Global Health; The University of Sydney
Adam	Jaffe	Professor of Paediatrics & Head of Discipline of Paediatrics	University of New South Wales / Sydney Children's Hospitals Network (Randwick)
Lisa	Keay	Senior Research Fellow	The George Institute for Global Health, University of Sydney
Margaret	Kelly	Senior Manager	Paediatric Healthcare Team, NSW Kids and Families
Emily	Klineberg	Coordinator, Research Alliance for Children's Health (RACH)	NSW Kids and Families
Pauline	Kotselas	Leader, Counselling Services	Counselling Services, Public Schools NSW
Jim	Lagapolous	Associate Professor, Director of Clinical Imaging, Brain and Mind Research Institute	Brain and Mind Research Institute, Sydney Medical School
Christine	Lassen	Manager	Institute of Trauma and Injury Management, Agency for Clinical Innovation
Tony	Lower	Director, Australian Centre for Agricultural Health & Safety	School of Public Health, University of Sydney
Gillian	Lucas	Senior Analyst, Paediatric Healthcare	NSW Kids and Families
Gregor	Macfie	Director, Policy and Research, Office	NSW Commission for Children and Young

First Name	Surname	Position	Organisation
		of Communities	People
Jessica	Malone	University intern	Day of Difference
Joerg	Mattes	Chair of Paediatrics	John Hunter Children's Hospital & HMRI, University of Newcastle
Mary	McCaskill	Medical Director Emergency Department	Sydney Children's Hospitals Network, Westmead
Caitlin	McDowell	Senior Analyst	Department of Family and Community Services (FACS Analysis and Research)
Peter	McIntyre	Director	National Centre for Immunisation Research and Surveillance
Kathryn	McKenzie	Director, Systemic Reviews	NSW Ombudsman
Barbara	Vernon	Chief Executive Officer	Women's & Children's Healthcare Australasia
Rebecca	Mitchell	Senior Research Fellow	University of NSW
Holgar	Moller	Student	University of Western Sydney
Gail	Mondy	Director, Maternal, Child and Family Health	NSW Kids and Families
Elisabeth	Murphy	Senior Clinical Advisor, Child and Family Health	NSW Kids and Families
Dushyanthi	Nagaratnam	Kids Health	Kids Health, The Children's Hospital at Westmead
Natasha	Nassar	Principal Research Fellow and NHMRC Career Development Fellow	Clinical and Population Perinatal Health Research, Kolling Institute of Medical Research
Sarah	Patterson	Paediatric Safety & Quality Coordinator	Clinical Excellence Commission
Tony	Penna	Director	NSW Office for Health and Medical Research, NSW Ministry of Health
Ron	Phillips	Chairman of the Board	NSW Kids and Families
Margaret	Prendergast	General Manager	Centre for Road Safety, Transport for NSW
Maria	Psaltis	Child and Family Liaison Officer	South Eastern Sydney Medicare Local
Oran	Rigby	Clinical Director	Institute of Trauma and Injury Management, Agency for Clinical Innovation
Christine	Roberts	NHMRC Research Fellow & Associate Professor Obstetrics, Gynaecology and	Kolling Institute, University of Sydney

First Name	Surname	Position	Organisation
		Neonatology	
Frank	Ross	Clinical Nurse Consultant	Centre for Trauma Care, Prevention, Education and Research, SCHN
Cathy	Sherry	Senior Lecturer	Faculty of Law, University of New South Wales
Erin	Simmonds	Health Promotion Officer	Kids Health, The Children's Hospital at Westmead
Colleen	Smyth	Senior Policy Analyst, Strategic and Regulatory Policy Branch	Centre for Population Health, NSW Ministry of Health
SVS	Soundappan	Staff Specialist Surgery, Senior Lecturer	CHW, University of Sydney
Titia	Sprague	Associate Director, Clinical Service Development and Quality	MH-Children and Young People
James	Stormon	Clinical Program Director, Clinical Programs Office	Clinical Programs Office, The Sydney Children's Hospital Network - The Children's Hospital Westmead
Jennifer	Thompson	NSW Better Treatments 4 Kids and Clinical Research Centre	Sydney Children's Hospitals Network, Westmead
Susan	Thompson	Associate Professor, Director - Healthy Built Environments Program	UNSW
Rowena	Tucker	Executive Officer -Paediatric Research Integration Initiative	Paediatric Research Integration Initiative (SCHN, CMRI, CCI)
Connie	Van	Research Assistant	Sydney Nursing School
Barbara	Vernon	Chief Executive Officer	Women's & Children's Healthcare Australasia
Graham	Vimpani	Clinical Advisor	Child Protection & Wellbeing, NSW Kids and Families
William	Walters	NSW Kids and Families Board Member	NSW Kids and Families
Graeme	Watson	Community Safety Coordinator	Fire and Rescue NSW
Penny	Weiss	Injury Strategy Advisor, Injury Strategy	Motor Accidents Authority
Les	White	Chief Paediatrician	NSW Kids & Families
Kellie	Wilson	Secretary, Clinical Review Officer	NSW Agency for Clinical Innovation / NSW Institute of Trauma and Injury Management
Valarie	Wilson	Professor of Nursing Research & Practice Development	CHW

First Name	Surname	Position	Organisation
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Shirley	Wyver	Senior Lecturer	Macquarie University
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Karen	Zwi	Community Paediatrician	Sydney Children's Hospital Network