Preventing abusive head trauma

RACP Chapter of Community Child Health Satellite Day
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Disclosure

• I have no relevant financial relationships with the manufacturer(s) of any commercial product(s) and/or provider(s) of commercial services discussed in this CME activity.

• I do not intend to discuss an unapproved/investigative use of a commercial product/device in my presentation.
Learning objectives

• The epidemiology of abusive head trauma
• Shaken baby prevention programmes
• Perinatal risk assessment for abusive head trauma
• Home visiting and head injury prevention
• Where to from here
Epidemiology
Definition

“Pediatric abusive head trauma is defined as an inflicted injury to the skull or intracranial contents of an infant or young child (< 5 years of age)”

Parks SE, Annest JL, Hill HA, Karch DL. Pediatric Abusive Head Trauma: Recommended Definitions for Public Health Surveillance and Research. Atlanta (GA): Centers for Disease Control and Prevention; 2012
### Population incidence (per 100,000)

<table>
<thead>
<tr>
<th>Population</th>
<th>&lt; 1 year</th>
<th>Age (months)</th>
<th>&lt; 2 year ‡</th>
<th>Lead Author</th>
<th>Year</th>
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</thead>
<tbody>
<tr>
<td>Alaska</td>
<td>55.9</td>
<td></td>
<td>34.4</td>
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</tr>
<tr>
<td>Canada ¹</td>
<td>14.1</td>
<td>5 (median)</td>
<td></td>
<td>Bennett</td>
<td>2011</td>
</tr>
<tr>
<td>Canada</td>
<td>15.5</td>
<td></td>
<td></td>
<td>Fujiwara</td>
<td>2012</td>
</tr>
<tr>
<td>Estonia</td>
<td>28.7</td>
<td>3.9 (mean)</td>
<td></td>
<td>Talvik</td>
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<tr>
<td>New Zealand</td>
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<td>7.8 (median)</td>
<td>14.7–19.6</td>
<td>Kelly</td>
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</tr>
<tr>
<td>North Carolina</td>
<td>29.7</td>
<td>4 (median)</td>
<td>17</td>
<td>Keenan</td>
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</tr>
<tr>
<td>North Carolina</td>
<td>36.0</td>
<td></td>
<td></td>
<td>Zolotor</td>
<td>2015</td>
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<tr>
<td>Pennsylvania ²</td>
<td>26</td>
<td>4.1 (median)</td>
<td>14.7</td>
<td>Kesler</td>
<td>2008</td>
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<td>Pennsylvania</td>
<td>45.2</td>
<td></td>
<td>26.6</td>
<td>Dias</td>
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<tr>
<td>Switzerland ³</td>
<td>14†</td>
<td>4 (median)</td>
<td></td>
<td>Fanconi</td>
<td>2010</td>
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<tr>
<td>United Kingdom</td>
<td>18§</td>
<td>3 (median)</td>
<td>10.1§</td>
<td>Jayawant</td>
<td>1998</td>
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<tr>
<td>United Kingdom</td>
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<td>6.4–9.3</td>
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<tr>
<td>USA (non-fatal) ⁴</td>
<td>32.3</td>
<td>Peak hospitalisation 2 months</td>
<td>18.7</td>
<td>Parks</td>
<td>2012</td>
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<tr>
<td>USA (KID data)</td>
<td>39.8</td>
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<td></td>
<td>Niederkrotenthaler</td>
<td>2013</td>
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<tr>
<td>USA (military)</td>
<td>34-39.2†</td>
<td></td>
<td></td>
<td>Gumbs</td>
<td>2013</td>
</tr>
</tbody>
</table>

¹Age < 15 yr ²Age < 3 yr ³Age < 6 yr ⁴Age <5 yr  ‡ denominator is per 100,000 live births  
§ 82% of the figure for total SDH † The rate for 1-2 year olds varies from 2.8-12 (Bennett, Kesler, Parks cite rates for older children)  ‡No cases over 12 months old

Te Puaruruheau “Sheltering the bud”  
Puawaitahi “Blossoming in unity”
Notes on incidence

1. The community incidence of potentially injurious practices
   - 26/1000 parents in the Carolinas shook a child <2 years old\textsuperscript{19}
   - 5.6% of Dutch parents smothered, slapped, or shook a baby <6/12 old\textsuperscript{20}
   - 1-4% of mothers in Hawaii Healthy Start assaulted a child < 3 years old\textsuperscript{21}

2. “Lesser degrees” of head injury
   - Bruising to the head is common in abuse\textsuperscript{22-26}
   - Serious rotational injury can occur from force applied to the ear\textsuperscript{27}

3. Missed cases of head injury\textsuperscript{28-33}
   The probability of recognising AHT in an infant with no bruises, no seizures, normal breathing and an intact family, may be as low as 1 in 5\textsuperscript{28}

Patrick Kelly, Ian Hayes

Abstract

Aim: To review the Auckland experience of traumatic subdural haematoma (SDH) in infants under 2 years of age, with particular regard to features which might help to differentiate accidental from non-accidental injury (NAI).

Methods: Retrospective review of the medical records of children under 2 years of age, coded for subdural haematoma (SDH) and retinal haemorrhage (RH) over a 10-year period.

Results: Sixty-four cases of SDH were identified. Forty-one of these were due to non-accidental trauma, and 23 cases were accidental. Differences between these two groups related to the age of presentation, ethnicity, the type of explanation for the injury, and differences in aspects of the clinical presentation (spatial, seizures, fractures, retinal haemorrhage). Mortality in the non-accidental group was far higher.

Conclusions: Subdural haemorrhage is a significant cause of death and disability in infants presenting to hospital in Auckland. In the majority of cases, it is caused by child abuse, and there are certain features that are helpful in establishing this diagnosis. The long-term outcome in this group is unknown, but there is reason to believe that, in many cases, it is poor. There is considerable scope for further research.

In the 40 years since Henry Kempe first reminded the medical community of the fact of child abuse, subdural haematoma (SDH) in young infants has become increasingly recognized as a warning sign. There is now an extensive literature on the clinical presentation (often known as ‘shaken baby syndrome’). Although debate continues as to the exact mechanisms of injury required, 2–4 Auckland and Starship Children’s Hospitals provide general medical and surgical services to central Auckland. They also provide neuropsychiatric and intensive care services for children from metropolitan Auckland (1996 population: 1,081,779) and elsewhere in New Zealand (1996 population: 3,618,300). This study was undertaken to characterize the infants we were seeing with SDH, and to identify features that might be helpful in diagnosis and management.

Methods

A retrospective study of those children under 2 years of age admitted to Auckland or Starship hospitals with subdural or retinal haemorrhage, from 1 January 1988 to 31 December 1998. We did not include infants that may have presented to National Women’s Hospital—the principal tertiary neonatal facility for metropolitan Auckland during that period. This may have included infants who may have been presented in South Auckland but were not transferred to Starship Children’s Hospital.

Cases were identified by ICD9 codes for SDH (853.2, 853.2, 800.0, 801.0, 812.1) and retinal haemorrhage (368.1). All six coding fields were included, so codes for child abuse were identified. However, these codes were not our primary search strategy. A manual review determined clearly that the broader strategy identified more infants with SDH.
1 million dollars
12 million dollars
240 million dollars
5.4 billion dollars
Caregivers’ voices: The experiences of caregivers of children who sustained serious accidental and non-accidental head injury in early childhood

Julie Wharewera-Mika1, Erana Cooper1, Bridget Kool1, Susana Pereira1 and Patrick Kelly2,4
1The Flying Doctors - Ngāi Manu Arahī, Auckland, New Zealand
2Section of Epidemiology and Biostatistics, School of Population Health, The University of Auckland, New Zealand
3Te Puaruruhau (Child Protection Team), Starship Children’s Hospital, Auckland, New Zealand
4Department of Paediatrics, Faculty of Medical and Health Sciences, The University of Auckland, New Zealand

Abstract
Head injury is a leading cause of mortality and acquired neurological impairment in children. Head-injured children may have neurobehavioural deficits that persist for years following injury. Head injury can result in significant and persistent caregiver burden, including mental health issues, family stress and disorganisation, and unmet social and healthcare service needs. Few studies have examined the healthcare and social service needs of children and their families following head injury sustained at an early age. This qualitative study aims to describe the experiences of caregivers of children who sustained a serious head injury (particularly non-accidental head injury) before the age of 2 years. Caregivers were interviewed up to 15 years following the initial injury. Semi-structured interviews with 21 caregivers of 15 children (aged 3–15 years at the time of interview) were completed. Thematic analysis of interview data generated three key themes: impact, support and information. The study’s findings reveal the broad impact of serious childhood head injury on caregivers, specifically the significant distress and burden brought about through lack of information, challenges in accessing support and inconsistent care. Recommendations for developing a quality ‘model of care’ and improving ease of access to supports for caregivers are provided.

Keywords
Caregivers, children, head injury, non-accidental head injury, thematic analysis, whānau/families

Non-accidental head injury in New Zealand: The outcome of referral to statutory authorities

Patrick Kelly1, Judith MacCormick2, Rebecca Strange
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Child neglect
Substantiation
Risk factors
Recurrence
Legal system

ABSTRACT
Objectives: To describe the outcome of referral to the statutory authorities for infants under 2 years with non-accidental head injury (NAHI), and to establish whether the authorities provide sufficient information to develop a risk profile for these cases.
Methods: Retrospective review of cases admitted to hospital in Auckland, New Zealand, from 1988 to 1998. Records from the hospital admission, child protective services and Police were reviewed, up to 19 years from diagnosis.
Results: Of 39 infants, 33 survived to leave hospital. Documentation of risk factors was erratic, and sometimes incongruent between agencies. Inter-agency case conferences took place in 17/58 (44%). The Department of Child, Youth and Family Services (CYF) used an informal family agreement to secure safety in 15/33 survivors (45%). Family Group Conferences occurred in 17/33 (52%). Nine of 33 were placed permanently outside the home (27%), two (6%) with unrelated caregivers. Charges were laid in 18/39 cases (46%). Fifteen cases came to trial with 14 convictions (36%). Of the survivors, 44% were later removed to CYF. There was no obvious relationship between type of intervention and re-notification.
Conclusions: Ensuring the safety of an infant with NAHI, and identifying and taking appropriate action with regard to the offender, are complex tasks. In New Zealand, data collection is often incomplete and inter-agency practice and collaboration is variable. Although the rate of prosecution was relatively high by international standards, many children were later notified again for further concerns of abuse or neglect, suggesting that our interventions have been only partially successful.
Practice implications: This paper suggests that all infants admitted to hospital with non-accidental head injury should become part of a prospective inter-agency research study, using a standardized data collection instrument. This should include the systematic collection of all data known or suspected to be associated with risk of child abuse, and incorporate long-term prospective follow-up, regardless of child protective or legal outcomes. Without larger numbers followed prospectively and according to sound methodology, it is difficult to prove which forms of intervention are better than others at reducing the risk of further abuse.

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This data was first presented at the 10th Australasian Conference on Child Abuse and Neglect, Wellington, February 2006.
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doi:10.1016/j.chiabu.2009.03.001
Shaken Baby Prevention

PREVENTION IS BETTER THAN CURE

We all need help throughout our lives, and benefit from ‘right first time’ support, sometimes at early stages, sometimes at moments of crisis or difficulty. We also need strong communities that build readiness, resilience and resourcefulness, and national systems and policies which help people to thrive, not undermine them.
Parent Education by Maternity Nurses and Prevention of Abusive Head Trauma
Robin L. Alman, Jennifer Canter, Patricia A. Patrick, Nancy Daley, Neelofar K. Butt and Donald A. Brand
Pediatrics 2011;128:e1164; originally published online October 24, 2011;
DOI: 10.1542/peds.2010-3260

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://pediatrics.aappublications.org/content/128/5/e1164.full.html

Abusive Head Trauma: Judicial Admissions Highlight Violent and Repetitive Shaking
Catherine Adamsbaum, Sophie Grabar, Nathalie Mejean and Caroline Rey-Salmon
Pediatrics published online Aug 9, 2010,
DOI: 10.1542/peds.2009-3647
Effectiveness of a Statewide Prevention Program in North Carolina


ABSTRACT

OBJECTIVE: The purpose of the study was to evaluate the effectiveness of a statewide prevention program in North Carolina.

METHODS: The program was implemented in 2004 and evaluated using a before-and-after design with a comparison group. The program included education and outreach efforts targeted at primary care providers, community organizations, and the general public. Data were collected from medical records, police reports, and other sources.

RESULTS: The program resulted in a 60% reduction in the rate of abusive head trauma (AHT) hospitalizations. The reduction was observed in both rural and urban areas, and across all age groups.

CONCLUSIONS: The statewide prevention program was effective in reducing AHT rates in North Carolina.

Keywords: Abusive head trauma, Child abuse, Prevention, Outreach, Community health.
Co-delivery
Risk and protective factors

• Age

• Infant crying
• Multiple doses

• Teaching parents mindfulness and reflective parenting

• Combining education with increased support

• Population-level approaches that include home visiting

• All approaches need to reach males
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Cases were identified by ICD9 codes for SDH (852.3, 852.2, 807, 8002, 8012, 8017) and retinal haemorrhage (EH) (362.1). All six coding fields were included, so codes for child abuse were identified. However, these codes were not our primary search strategy. A trial run demonstrated clearly that the broader strategy identified more infants with SDH.
“This study also found that the data collected by the key agencies involved in cases of NAHI, was inconsistent and often incomplete. In the absence of a systematic, prospective and collaborative approach to these cases, it could be suggested that the child protection system in New Zealand is conducting a form of poorly controlled experiment. Children and families are subjected to a wide variety of interventions, and re-notification is taken as the measure of success or failure - a measure for whose validity little good evidence exists”

Kelly 2009
Cases admitted to Starship 1991 to 2010
- Age <2 years
- Intracranial injury and/or skull fracture
- AHT diagnosed and reported to statutory authorities

Birthplace was identified.
- Nine DHB where ≥ 5 cases were born included

Four controls randomly selected for each case
- born on the same day in the same hospital
- who did not sustain AHT by the age of 5 years
<table>
<thead>
<tr>
<th>District Health Board</th>
<th>Included</th>
<th>Excluded</th>
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<tr>
<td>Counties</td>
<td>46</td>
<td>4</td>
</tr>
<tr>
<td>Auckland</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>Waitemata</td>
<td>21</td>
<td>2</td>
</tr>
<tr>
<td>Waikato</td>
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<td>4</td>
</tr>
<tr>
<td>Lakes</td>
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<tr>
<td>Bay of Plenty</td>
<td>7</td>
<td></td>
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<td>MidCentral</td>
<td>7</td>
<td></td>
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<td>Capital Coast</td>
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<tr>
<td>Taranaki</td>
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<td>2</td>
</tr>
<tr>
<td>Nelson</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Canterbury</td>
<td></td>
<td>2</td>
</tr>
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<td>Southland</td>
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<tr>
<td>Whanganui</td>
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</tr>
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</table>
Data collection and analysis

• 142 cases (86%), 550 controls (97%)
• Maternal and child perinatal records
• 75 variables arranged in related groups
• Frequency analysis: \( p < 0.1 \)
• Univariable analysis: \( p < 0.1 \)
• Multivariable analysis: \( p < 0.05 \)
Table III. Variables remaining in the final multivariable model

<table>
<thead>
<tr>
<th>Variables</th>
<th>Categories</th>
<th>Cases No. (%)</th>
<th>Controls No. (%)</th>
<th>Conditional multivariable OR (95% CI)</th>
<th>Unconditional multivariable OR (95% CI)</th>
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</thead>
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<td>Maternal age (per y)</td>
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<td></td>
<td></td>
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<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
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<td>European</td>
<td>31 (21.8)</td>
<td>255 (46.4)</td>
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<td>0.91 (0.85, 0.97)</td>
<td>0.92 (0.88, 0.96)</td>
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<td>Pacific</td>
<td>25 (17.6)</td>
<td>115 (20.9)</td>
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<td>2.17 (0.92, 5.14)</td>
<td>1.92 (0.93, 3.98)</td>
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<td>Asian</td>
<td>5 (3.5)</td>
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<td>2.13 (0.62, 7.38)</td>
<td>2.06 (0.64, 6.63)</td>
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<td>2.33 (0.39, 13.74)</td>
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<td><strong>Maori</strong></td>
<td>78 (54.9)</td>
<td>107 (19.5)</td>
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<td>4.61 (1.98, 10.78)</td>
<td>3.97 (2.12, 7.44)</td>
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<td>1.00</td>
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<td>1.00</td>
<td>1.00</td>
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<td>De facto†</td>
<td>45 (31.7)</td>
<td>111 (20.2)</td>
<td>3.10</td>
<td>3.10 (1.23, 7.83)</td>
<td>3.42 (1.59, 6.74)</td>
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<td><strong>Single</strong></td>
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<td>84 (15.3)</td>
<td>5.10</td>
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<td>Supplements¶</td>
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<td>1 vs 0</td>
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<td>95 (17.3)</td>
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<td>5.75 (2.27, 14.59)</td>
<td>3.89 (2.02, 7.50)</td>
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<td>2+ vs 0</td>
<td>55 (38.7)</td>
<td>83 (15.1)</td>
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<td>13.53 (2.39, 74.67)</td>
<td>7.96 (3.06, 20.71)</td>
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<td>No</td>
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<td>11 (2.0)</td>
<td>0.79</td>
<td>0.79 (0.69, 0.91)</td>
<td>0.77 (0.69, 0.86)</td>
</tr>
<tr>
<td>Prolonged rupture of membranes**</td>
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<tr>
<td>Breastmilk</td>
<td>65 (45.8)</td>
<td>432 (78.5)</td>
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<tr>
<td><strong>Formula</strong></td>
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<td>49 (8.9)</td>
<td>4.53</td>
<td>4.53 (1.67, 12.28)</td>
<td>4.25 (1.8, 8.29)</td>
</tr>
<tr>
<td><strong>Both</strong></td>
<td>31 (21.8)</td>
<td>59 (10.7)</td>
<td>6.06</td>
<td>6.06 (2.39, 15.36)</td>
<td>4.72 (2.42, 9.28)</td>
</tr>
</tbody>
</table>

*Ethnicity. Participant-defined. If multiple, prioritized as Maori, Pacific, Asian, Other, European.
†Other social history. Any social concern documented in clinical notes. Examples: attempted suicide, child in care, child protective services involved, partner in jail, prostitution, single parent, social worker involved.
‡De facto. Living together as a couple but not married.
§Unknowns in substance abuse history, other social history, partner status, and booking.
¶Supplements. Any medication not usually prescribed (e.g., folate, vitamins, iron [if not prescribed for anemia]).
**Membrane rupture more than 48 hours before delivery.
††Pattern of feeding in 24 hours before discharge. Breast includes expressing.

Inter-pregnancy interval

• The interval between deliveries was not included in the final model because it eliminated 265 primiparous women.

• It was significant in group analysis (31 months for cases, 38.8 for controls, $p=0.026$) so we performed an additional analysis of the effect for 422/427 multiparous women.

• Shorter inter-pregnancy intervals were significantly associated with AHT ($p=0.029$), OR 0.76 (95% CI, 0.59-0.98) per year.

• The risk for a second baby born after three years was less than half that for one born after one year.
Not…

• Alcohol or drug use
• Medical or psychiatric history
• Smoking
• NZ deprivation index
• Parity
• Antenatal care provider
• Admission to SCBU
• Birth type (singleton or twin)
• Birthweight
• Gender
• Referral for social support or statutory intervention
Model performance

Limitations

• Retrospective study
• Missing data
  – Father and/or mother’s partner
  – Education
  – Intimate partner violence
  – Psychosocial factors
• Possibility of residual confounding
  – measured or unmeasured factors
• Cannot be used to predict individual risk
Aims

• To investigate whether there is a relationship between a family being known to Oranga Tamariki or the police at the time of birth and the risk of subsequent abusive head trauma.

• To investigate whether data from child protective services or the police improve an existing risk model derived from perinatal health records.
Data collection

- Name and date of birth of the father obtained from the Birth Certificate
- Names and date of birth of father, mother and baby provided to OT
- OT database searched for data concerning the parents, parents’ partner(s), siblings and step-siblings (16 variables)
  - Notification, investigation, substantiation, type of abuse, response
  - Youth Justice
- Names and dates of birth provided to the police
- Police database searched for data related to intimate partner violence (IPV) or offences for “other violence”, alcohol or drugs (5 variables)
- Data included a count
Is there a relationship between these variables and the risk of AHT?

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Cases N (%)</th>
<th>Controls N (%)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age of the father</td>
<td>27.3</td>
<td>32.5</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Father not on the Birth Certificate</td>
<td>26/142 (18%)</td>
<td>52/550 (9%)</td>
<td>0.004</td>
</tr>
<tr>
<td>Notification</td>
<td>64/142 (45%)</td>
<td>56/550 (10%)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Substantiation</td>
<td>53/142 (37%)</td>
<td>36/550 (7%)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Custody obtained by Oranga Tamariki</td>
<td>24/142 (17%)</td>
<td>16/550 (3%)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Parent involved in Youth Justice</td>
<td>30/142 (21%)</td>
<td>16/550 (3%)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Police call-out for IPV</td>
<td>50/142 (35%)</td>
<td>86/550 (12%)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Partner violence offence</td>
<td>26/142 (18%)</td>
<td>55/550 (10%)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Other violence offence</td>
<td>33/142 (23%)</td>
<td>55/550 (10%)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Drug offence</td>
<td>24/142 (17%)</td>
<td>37/550 (7%)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Alcohol offence</td>
<td>28/142 (20%)</td>
<td>68/550 (12%)</td>
<td>0.03</td>
</tr>
</tbody>
</table>
**Receiver Operator Characteristic Curve**

Model based on perinatal health records alone
AUC = **89.5%** (95% CI 86.6 - 92.5)

*Nagelkerke’s pseudo R² = 33.1%

Model incorporating notifications to CPS
AUC = **90.9%** (95% CI 88.0 - 93.7)

*Nagelkerke’s pseudo R² = 35.5%
Limitations

• Data from notifications and the police may not be sensitive indicators of risk
  – most child abuse and neglect is not reported
  – most intimate partner violence is not reported

• Association does not mean predictive value
  – Model cannot be used for individual risk prediction
Conclusions

• There is a relationship between data known to statutory authorities at the time of birth, and the risk of subsequent abusive head trauma
• These data do not help to explain risk identified from perinatal records:
  – preterm delivery
  – missing data in particular domains of perinatal records
  – discontinuance of breastfeeding in the first week of life
  – prolonged rupture of membranes
• Accessing these data would be unlikely to assist perinatal healthcare providers in predicting the risk of subsequent AHT
• Information gathered by healthcare providers as part of routine care may be more useful in predicting risk and guiding interventions than information available to the statutory authorities
Home visiting
The Healthy Families America Strategy

Healthy Families America (HFA) is the signature program of Prevent Child Abuse America, based in Chicago, Illinois, providing support, technical assistance, training, and evaluation to organizations across 38 states, the District of Columbia, American Samoa, Guam, Puerto Rico and in Canada.

WHAT

Early Start Evaluation Report
<table>
<thead>
<tr>
<th>Medical Record Screen</th>
<th>Family Stress Checklist Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Unmarried</td>
<td>1. Childhood history of being abused</td>
</tr>
<tr>
<td>2. Partner unemployed</td>
<td>2. Substance abuse, mental illness or criminal history</td>
</tr>
<tr>
<td>3. Inadequate income</td>
<td>3. Previous or current Child Protective Services involvement</td>
</tr>
<tr>
<td>4. Unstable housing</td>
<td>4. Low self-esteem, poor coping ability</td>
</tr>
<tr>
<td>5. No phone</td>
<td>5. Multiple life stressors</td>
</tr>
<tr>
<td>6. Education under 12 years</td>
<td>6. Potential for violent temper outbursts</td>
</tr>
<tr>
<td>7. Inadequate emergency contacts</td>
<td>7. Unrealistic expectations for child’s development</td>
</tr>
<tr>
<td>9. Inadequate prenatal care</td>
<td>9. Perceives child as being difficult or provocative</td>
</tr>
<tr>
<td>11. History of psychiatric care</td>
<td></td>
</tr>
<tr>
<td>12. Abortion unsuccessfully sought or attempted</td>
<td></td>
</tr>
<tr>
<td>13. Adoption sought or attempted</td>
<td></td>
</tr>
<tr>
<td>14. Marital or family problems</td>
<td></td>
</tr>
<tr>
<td>15. History of depression</td>
<td></td>
</tr>
</tbody>
</table>

Item scoring: True, false, unknown  
Positive screen:  
True score on either item number 1, 9, or 12  
Two or more true scores  
Seven or more unknowns

Item scoring for each parent:  
0 = No problem  
5 = Mild problem  
10 = Severe problem  
Positive assessment: A total score of 25 for either parent triggers referral to Healthy Start.

The Impact of the Family Start Home Visiting Programme on Outcomes for Mothers and Children

A Quasi-Experimental Study

February 2016

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Home visiting since 1907
Paraprofessional programs since 1998
30 of 74 districts
No routine screening
Ad hoc referral
Maternal age, partner status, unknowns (booking, social history, partner status, substance abuse), preterm delivery, not breast-feeding, inter-pregnancy interval
Where to from here?

• Take responsibility for the issue
• Reframe the question
  – “intentional” and “unintentional” injury
• Collect good data, systematically
  – “unknown” matters
  – we don’t know what doesn’t matter
  – unashamed
    • health providers can’t afford to avoid the difficult conversations
• Analyse and respond to that data
Perinatal healthcare providers are a natural home for prevention

There are already lessons for AHT prevention

- Possible effect of programs which address teen pregnancy, increase the spacing of pregnancies and promote breastfeeding
- The importance of comprehensive data collection
  - Planned or unplanned pregnancy
  - Partner status
  - Substance use, untreated mental health issues
  - Intimate partner violence
  - Other social circumstances
- The criteria used for referral into home visiting programs
- “No child left behind” – prioritising the missing
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- The National Advisory Board for Power to Protect
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