Report of the

Paediatric Death Review Committee

and

Deaths Under Five Committee

Office of the Chief Coroner
Province of Ontario

June 2011

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Message from the Chair

It is my pleasure to provide to you the 2011 Annual Report of the Paediatric Death Review Committee (PDRC) and the Deaths Under Five Committee (DU5C) of the Office of the Chief Coroner (OCC).

Both Committees had several changes in membership over the year. The PDRC welcomed Ms. Dorothy Zwolakowski in her role as Executive Officer-Investigations and thanks Ms. Doris Hildebrandt for her years of service. Ms. Mary Ballantyne from the Ontario Association of Children's Aid Societies joined the Committee replacing Ms. Jeanette Lewis, past Executive Director. We are grateful for Ms. Lewis' many years of dedicated service. Dr. Glenn Taylor left the PDRC in the past year and was replaced by Dr. Gino Somers. Both have provided stellar paediatric pathology consultations to the Committee. New police officers on the Committee include Detectives Avi Fagu from the Toronto Police Homicide Unit and Leon Lynch from the Homicide Squad of the Durham Regional Police Service.

Dr. Dirk Huyer, Regional Supervising Coroner and long serving member, graciously agreed to become the Chair of the Deaths Under Five Committee in January, 2011. We welcome his vitality, enthusiasm, energy and perspectives as a both a coroner and former child maltreatment expert. The DU5C as well welcomes Ms. Dorothy Zwolakowski in her role as Executive Officer-Investigations and thanks Ms. Doris Hildebrandt for her years of service. In addition, Dr. Michelle Shouldice, paediatrician and child maltreatment expert from the Hospital for Sick Children joined the Committee in 2010. We also welcomed Dr. Joyce Bernstein, a statistician and epidemiologist from Toronto Public Health to the Committee. Dr. Gino Somers left the DU5C in 2010, and was replaced by Dr. Charis Kepron, a staff forensic pathologist at the Provincial Forensic Pathology Unit who maintains an interest in paediatric cases. Inspector Philip George from the OPP retired this year. New policing members include Detective Avi Fagu (Toronto Police) and Detective Sergeant Leon Lynch (Durham Police) as well as Detective Inspector Mark Pritchard from the Ontario Provincial Police.

The theme of paediatric death investigations in 2010 was directed toward death reviews. Several were completed including the Committee Report to the Attorney General: Shaken Baby Death Review released in March 2011. The Pikangikum Youth Suicide Review, which examined the deaths of 16 youth in the Pikangikum First Nation in the years 2006-2008 will be released in the future. A summary is included in this report.

This year, the inquest into the death of Sara Carlin was completed. It examined the use of selective serotonin reuptake inhibitors in youth and their role in the treatment of depression. A summary of the inquest is provided in this report.

Importantly, the Committees continued to review the deaths of children who were actively receiving service from a children's aid society at the time, or within the 12 months prior to their death, under the leadership of Ms. Karen Bridgman-Acker. This year, there has been a slight decline in the total number of deaths. Themes which will be reviewed in this report arising from an examination of these deaths include deaths of children in alternate care, including kinship and foster care, as well as issues with the approach to sharing of information between and amongst health care professionals, service providers and investigators.

This year, the Committees dedicated themselves to quality in the conclusions that they reached; the reports that were prepared and particularly, the quality of the Coroners Investigation Statements for deaths of children under five years of age.

Special thanks to Ms. Zwolakowski, Ms. Bridgman-Acker, Ms. Rowena Cruz and all members of the Committees for their dedication in assisting the Office of the Chief Coroner in this important work. As Chair, I would also like to thank and acknowledge Dr. Huyer for his stamina and support in all aspects of the Committees' functions, and for continually pushing the bar higher in the interests of quality in paediatric death investigation.

As always, our office remains committed to serve the living through high quality death investigations and inquests to ensure that no death will be overlooked, concealed or ignored.

Dr. A. E. Lauwers
Deputy Chief Coroner-Investigations
Chair, Paediatric Death Review Committee
Former Chair (2010), Deaths Under Five Committee

Classification of Death

In the Province of Ontario, death classification falls into one of five categories.

1. Natural:
A death is natural if it is due to a natural disease or known complication thereof; or known complication of treatment for the disease.

2. Accident:
A death is accidental if it is due to an occurrence, incident or event that happens without foresight or expectation. An accidental death is caused by an external factor, where death or harm was not foreseen or expected.

3. Suicide:
A death is a suicide if it results from an intentional act of a person knowing the probable consequence of what he/she is about to do—that is the commission or omission of an act that results in his/her own death.

There is to be a presumption against suicide at the outset, and there must be sufficient clear and convincing evidence of a non-accidental action, initiated by the deceased, that led to the death.

Suicide is a finding of fact, not of law or morality. A finding of suicide does not imply agreement with, or understanding of the decision of the deceased.

4. Homicide:
A death is a homicide if it resulted from the "action of a human being killing another human being" (Oxford dictionary definition).

The action must be non-accidental and originate from a person other than the deceased. A finding of homicide in the coroners' system is a finding of fact and does not carry with it a determination of guilt. It is however, a serious finding and should be made only on clear and convincing evidence of a non-accidental action of a person that led to the death of another person.

5. Undetermined:
A death is classified as undetermined if: a full investigation has shown no evidence for any specific classification; or there is equal evidence or a significant contest among two or more classifications; or the death is an apparent suicide of a child under the age of 10.

A finding of "undetermined" may be a positive and appropriate finding, after a full investigation and careful consideration of all the evidence. It should not be considered a failure to reach a conclusion.

CAUSE AND MANNER OF DEATH CLASSIFICATION FOR UNEXPECTED INFANT DEATHS

Group	Findings at Autopsy	Investigative Findings	Cause of Death on Death Certificate	Manner of Death
1	Autopsy reveals a definitive cause of death (pneumonia, congenital heart disease, head injury, etc.)	Are variable and might include a specific disease or injury event	**Will generally reflect the findings of the forensic pathologist at autopsy** e.g. Pneumonia	**Classified based on the circumstances**
2	No anatomic or toxicologic cause of death identified following a complete autopsy by a forensic pathologist	**Negative** • Following the complete autopsy, review of the death scene, and review of the clinical history • The infant was found supine (laying on back) or prone (laying on stomach) • There was no evidence of "sleep-associated risk factors" • There may have been exposure to environmental tobacco smoke or in utero tobacco use	**Sudden Infant Death Syndrome** (SIDS)	**Natural**
3	No anatomic or toxicologic cause of death identified following a complete autopsy by a forensic pathologist	**A:** **Presence of sleep associated risk factors such as:** • Bedsharing • Infant sleeping on surfaces not intended for infant sleep such as sofas, waterbeds, adult beds, child carriers, car seats, non-approved playpens or bassinets ***OR***	**Sudden Unexpected Death in Infancy (SUDI)** e.g. No anatomic or toxicologic cause of death. Sudden Unexpected Death in Infancy. Sleeping in an unsafe sleep environment. (Bedsharing with two adults)	**Undetermined**

CAUSE AND MANNER OF DEATH CLASSIFICATION FOR UNEXPECTED INFANT DEATHS

Group	Findings at Autopsy	Investigative Findings	Cause of Death on Death Certificate	Manner of Death
3	No anatomic or toxicologic cause of death identified following a complete autopsy by a forensic pathologist	**B:** **Findings in the investigation reveal the presence of high risk factors such as:** • A history of violence involving children in the parents or non-parental caregivers involved at the time of death • Prior hospital visits of the deceased with unexplained illnesses or injuries • Substantive mental health histories in caregiving parents or non-parental caregivers • Domestic violence, alcohol or substance abuse in the parents or non-parental caregivers • The deceased or a sibling have received direct service from a Children's Aid Society • Concerning but non-specific investigative findings, e.g. inconsistent accounts of the circumstances surrounding the death • The previous death of a sibling in the same family of parents or non-parental caregivers	**Sudden Unexpected Death in Infancy** (SUDI) e.g. No anatomic or toxicologic cause of death. Sudden Unexpected Death in Infancy.	**Undetermined**
4	No anatomic or toxicologic cause of death identified following a complete autopsy by a forensic pathologist	Findings at the autopsy reveal an anatomical finding that suggests non-accidental injury or abuse (e.g. unexplained healing fracture) but the cause of death can not be found at the autopsy. • The appearance of atypical bruises or fractures found at autopsy which remain unexplained	**Unascertained** (e.g. Unascertained in a child with healing rib fractures)	**Undetermined**

Sudden Infant Death Syndrome

Sudden Infant Death Syndrome (SIDS) is a cause of death defined as:

"The sudden death of an infant under one year of age which remains unexplained after thorough case investigation, including the performance of a complete autopsy, examination of the death scene, and review of the clinical history."[1]

This definition is based on the 1989 National Institute of Health consensus statement. Although not in the definition, it is generally agreed that a SIDS death takes place during sleep.

It is clear from this definition that when the cause of death is given as SIDS, this does not arise from the autopsy findings in isolation. In Ontario, SIDS is given as a cause of death following a thorough review of all components of the death investigation including the autopsy and all its elements, examination of the death scene, review of the clinical history, and a review of the police investigation. Following this, the death will be reviewed by the Deaths Under Five Committee with a consensus decision when a death is attributed to SIDS.

If any aspect of the investigation is positive, the cause of death will not be given as SIDS. SIDS is only given as a cause of death when all other causes have been ruled out. It is a finding of exclusion.

The manner of death for SIDS deaths is given as "Natural".

[1] Willinger M., James C., Catz C., Defining SIDS: Deliberation of an expert panel convened by the National Institute of Child Health and Human Development. Pediatr Pathol 1991;11:677-84.m

Sudden Unexpected Death in Infancy (SUDI)

The term Sudden Unexpected Death in Infancy (SUDI) is used when the death of a child less than one year of age is unexpected and unexplained. This term in synonymous with Sudden Unexpected Infant Death (SUID). This death category includes SIDS (Sudden Infant Death Syndrome) deaths from accidental injury and non-accidental injury, those due to neglect or abuse or resulting from a previously undiagnosed natural disease.

In many unexpected deaths of infants, the autopsy, death scene examination and review of the clinical history, will identify a cause of death. However, a certain number will persistently have no cause of death determined. In Ontario, we have traditionally and continue to provide the cause of death in these cases as Sudden Unexpected Death in Infancy. Other jurisdictions define these deaths as Sudden *Unexplained* Deaths in Infancy.

SIDS rates have decreased by 50% since 1999 when the "Back to Sleep" public education program was initiated. It has been recognized that the number of SIDS deaths have been falling, while SUDI deaths have been increasing in number. This is partly due to the effective "Back to Sleep" education, but comprehensive death investigative approaches and a more strict application of the definition of SIDS have likely also contributed to the rising number of SUDI deaths. In Ontario, unsafe sleep environments found on review of the death scene precludes the death from being classified as SIDS. Any factor identified at the death scene which might impair an infant's respirations and/or cause entrapment, overlaying, or suffocation is identified. These include deaths associated with bedsharing; infants sleeping on unsafe sleep surfaces (not intended for infant sleep) such as adult mattresses, waterbeds, couches, car carriers, car seats; a safe sleep

surface which is cluttered with toys, blankets and pillows; or a non-approved bassinet or playpen. In these circumstances, provided the autopsy does not reveal any abnormal findings, the cause of death will be given as Sudden Unexpected Death in Infancy (SUDI). In previous literature and in some jurisdictions, these deaths have, and continue to be classified as SIDS.

The manner of death for SUDI deaths is given as "Undetermined."

Deaths Under Five Committee

The Deaths Under Five Committee of the Office of the Chief Coroner meets at least six times per year for the purpose of carefully reviewing all deaths of children less than 5 years of age investigated by a coroner in Ontario. It is a multidisciplinary group and at any one meeting, attendees include typically 3 senior forensic pathologists, 2 senior coroners, between 5-8 senior homicide officers from different jurisdictions in Ontario, a paediatrician who is a child maltreatment expert, a crown attorney, a health statistician and epidemiologist, a child welfare consultant and experienced staff from the Office of the Chief Coroner.

One of the challenges the reviewers face, is the proper assignment of the cause and manner of death for children less than 1 year of age when the autopsy performed has not clearly demonstrated a cause of death. It is not uncommon for no definitive anatomic or toxicologic cause of death to be identified despite the comprehensive post mortem examination process undertaken by experienced and knowledgeable forensic pathologists.

The Ontario Forensic Pathology Service has provided direction that these cases shall only be performed by duly qualified registered pathologists, ensuring that the most challenging cases are examined by Ontario's most knowledgeable, senior and experienced staff.

The struggle to properly classify the cause and manner of death in children less that one year of age is not unique to Ontario. The National Association of Medical Examiners in the United States provided guidance in this regard in 2005. Ontario, based in part on this guidance, has developed a method for classifying manner and cause of death for children between birth and one year of age, commonly known as infants. The table on page 4 and 5 reflects the classification approach currently utilized in Ontario.

The Chief Coroners and Medical Examiners from all Canadian provinces and territories meet at least annually. At the June 2010 meeting of the Canadian Chief Coroners and Medical Examiners (CCME), there was an acknowledgement that a lack of consistency existed in Canada for the classification of sudden unexpected deaths in infancy. As such, a Manner of Death Working Group was tasked with standardizing the certification and classification of sudden unexpected deaths in infancy across all Canadian jurisdictions.

Cases Reviewed by Deaths Under Five Committee

Manner of Death	Case Reviews	
	2009	2010
Natural	16	17
Accident	14	14
Homicide	2	4
Undetermined	60	73
Total	**92**	**108**

The association between unsafe sleep environments and sudden unexpected deaths in infancy has long been recognized by death investigators and has been reported in the literature. It has been acknowledged that further research is necessary to enhance understanding of the cause, effect and potential prevention strategies. The documentation of the sleep environment at the time of death is required for this

research, and ultimately, to inform prevention strategies.

Cases Involving Unsafe Sleeping Environments		Cases Involving Bed Sharing	
2009	**2010**	**2009**	**2010**
38	45	24	31

In Ontario, a province with more than 13,000,000 residents, there are approximately 165 deaths of children less than 12 months of age in any year. Of these, approximately 50 deaths are classified as Sudden Unexpected Deaths in Infancy (SUDI). Of these 50, over 70% occur in unsafe sleep environments including bedsharing and sleeping on unsafe sleep surfaces. Given the large number of deaths in which the sleep environment has been accurately documented each year, the Office of the Chief Coroner in Ontario takes the position that these unsafe sleep environments are reasonably likely to be associated with the deaths of these infants, and records the sleep environment in the cause of death statement. (e.g. Sudden Unexpected Death Infancy. Sleeping in an unsafe sleep environment. Bedsharing with two adults).

In some jurisdictions, these deaths have, and continue to be classified as SIDS (Sudden Infant Death Syndrome). It is our view that this is incompatible with the definition of SIDS.

The Office of the Chief Coroner of Ontario will support the recommendations of the Manner of Death Working Group. In the interim, the Deaths Under Five Committee will continue to classify manner and cause of death for infants utilizing the principles outlined in the chart on pages 4 and 5.

Deaths of Children 0 - 5 Years of Age Investigated by a Coroner in Ontario (2004 – 2009)

Manner of Death	2004	2005	2006	2007	2008	2009*
Natural	178	136	134	122	118	90
Accident	34	33	43	36	24	24
Homicide	5	10	13	7	3	2
Undetermined	41	53	58	52	66	53
Total	**258**	**232**	**248**	**217**	**211**	**169***

* NB: 2009 are preliminary statistics. These figures may change once the statistical year is completed.

Deaths of Children (0-19 yrs of age) Investigated by the Office of the Chief Coroner: By Manner of Death

The table below summarizes the children's deaths investigated by the Office of the Chief Coroner on an annual basis. The statistics for 2009 remain preliminary at the time of printing. Clearly, the largest numbers consistently fall into the ***natural*** and ***accidental*** categories.

The deaths reviewed by the PDRC represent a fraction of the total number of children who died in Ontario.

The Office of the Chief Coroner investigates approximately 46% of the total number of deaths of children between 0 - 19 years of age. The OCC does not investigate deaths of children due to natural causes, generally, where death is expected. On average, Children's Aid Societies have been involved with less than 20% of those deaths investigated by a coroner.

Deaths of Children 0 - 19 Years of Age Investigated by a Coroner in Ontario (2005 – 2009)

MANNER	2005	2006	2007	2008	2009*
Natural	218	218	192	192	168
Accident	235	229	199	173	171
Suicide	65	48	68	53	62
Homicide	26	41	46	34	32
Undetermined	71	71	62	71	60
Total # of Coroners Cases	**615**	**607**	**567**	**523**	**493***
Total # of Deaths in Ontario **	**1335**	**1249**	**1297**	**N/A**	**N/A**

* 2009 are preliminary statistics.
These figures may change once the statistical year is completed.

** Source: Statistics Canada. *Table 102-0504 - Deaths and mortality rates, by age group and sex, Canada, provinces and territories, annual*, CANSIM (database).
http://cansim2.statcan.gc.ca/cgi-win/cnsmcgi.exe?Lang=E&CNSM-Fi=CII/CII_1-eng.htm
(accessed: May 6, 2011)

Overview of the Child Death Review Process in the Province of Ontario

There are approximately 320 coroners in the Province of Ontario. The province is divided into 4 regions with 9 Regional Supervising Coroners overseeing the investigations in each region.

The Paediatric Death Review Committee (PDRC) reviews medically complex deaths where the cause and/or manner of death may be in question, or where there are concerns regarding the medical care. The Committee may also review selected cases where concerns are raised by family members or caregivers.

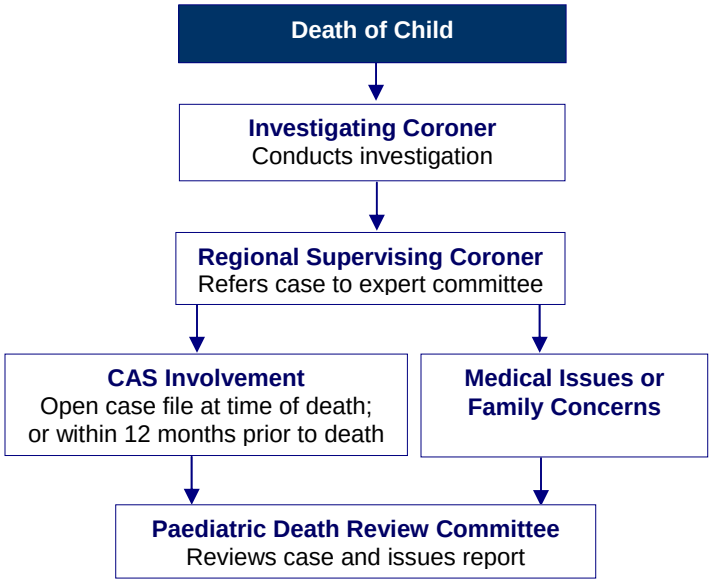
The Deaths Under Five Committee (DU5C) reviews the deaths of children under five years of age in Ontario, assists in the classification of cause and manner of death, and may forward the case for further review to the PDRC as required.

The Regional Supervising Coroner, having decided that the case requires a review, will refer the case to the PDRC. Items reviewed by the PDRC will include the Coroners Investigation Statement, autopsy report, toxicology report, ancillary reports, police report, child welfare documents and medical files.

All cases where the deceased child had an open file with a Children's Aid Society (CAS) at the time of death, or within the preceding 12 months, are reviewed.

The contents of the file are distributed to the various experts on the Committee and a report is generated by a Committee member who is designated as the primary reviewer. At the monthly meeting, the entire Committee, with representation from all disciplines, discusses the report and a consensus report, including recommendations, is developed by all members. The final PDRC report is forwarded to the Regional Supervising Coroner, the CAS, if involved, and the Ministry of Children and Youth Services (MCYS). The Regional Supervising Coroner may decide to send the recommendations to other relevant agencies depending on the circumstances of the case.

Flow of Information in Ontario's Child Death Review Process



Post Mortem Examinations: An Integral Part of a Child Death Investigation

Introduction

Investigations of sudden and unexpected deaths in children are challenging for many reasons. These deaths typically invoke a significant emotional response which is experienced not only by family and friends, but also by first responders, health care providers and death investigators. Minimal external findings on the body and a lack of evidence at the death scene are frequent features of these cases, and can exacerbate the associated confusion and grief. Further complexity arises for the pathologist and coroner as the cause and manner of death may not be apparent, even after a complete autopsy. This is particularly true in children less than one year of age.

In an effort to ensure that the best information is available to the death investigation team, defined investigative protocols are utilized. The aim of these protocols is to permit consistent and high quality paediatric death investigations across the province. For example, coroners in Ontario follow the *Guideline to Investigating Coroners Regarding Paediatric Death Investigations* which provides guidance in death investigations involving children less than 19 years of age.

Post Mortem Examinations of Sudden and Unexpected Deaths of Children Under Five Years

The Ontario Forensic Pathology Service (OFPS) has a specific protocol for the post mortem examination of sudden and unexpected deaths in infants and children where circumstances are not criminally suspicious or indicative of a potentially homicidal manner of death. In general, this protocol is applied to all applicable cases involving children less than 5 years of age, but may also be invoked in older children with specific vulnerabilities (i.e. severe physical or developmental delay). For criminally suspicious cases and homicides, forensic pathologists follow the *Guidelines for Criminally Suspicious Cases and Homicides*.

A complete post mortem examination will be completed in all sudden and unexpected deaths of children. The autopsy will be conducted by a pathologist on the OFPS Pathologist Register who is qualified to perform paediatric examinations (Category A or C). Paediatric autopsies occur exclusively at the following locations:

- Provincial Forensic Pathology Unit (Toronto)
- Hamilton Regional Forensic Pathology Unit
- London Regional Forensic Pathology Unit
- Eastern Ontario Regional Forensic Pathology Unit (Ottawa)
- The Hospital for Sick Children (Toronto)
- Children's Hospital of Eastern Ontario (Ottawa)

In addition, cases from north-western Ontario may be sent to Winnipeg, Manitoba where the autopsy will be performed by a paediatric or forensic pathologist registered with the OFPS. This ensures that these complex examinations are performed by pathologists with the necessary training, working within appropriately equipped forensic pathology settings.

What Information Does the Pathologist Need?

In order to properly inform the post mortem examination, historical and investigative data must be provided to the pathologist who will conduct the autopsy. While the specific details required will depend on the nature of the case, the following information should be considered in all paediatric cases:

- Past medical history of the child (including birth records, if appropriate)
- Medical history of siblings and/or parents
- Family history of sudden unexpected deaths in infants or others
- For deaths occurring in the context of sleep, the details of the sleep environment (crib, adult bed, pillows, etc.)
- Position the child was found in (prone, supine)
- Risk factors in the home (pets, smoking, alcohol use, parental history of substance abuse, etc.)
- Description and photographs of the scene
- History of involvement of a Children's Aid Society

Post Mortem Examination

A standardized radiographic skeletal survey is performed in all cases involving children under the age of five prior to the start of the post mortem examination. These X-rays must be reviewed and reported by a paediatric radiologist *prior* to release of the body (a post mortem CT scan may also be performed, at the discretion of the pathologist). Should any skeletal injuries be identified, the pathologist must excise the involved bones to allow for detailed histologic assessment.

The pathologist will complete a comprehensive external exam. A standard set of photographs will be obtained in all cases.

Following external examination, the pathologist will undertake a thorough step-by-step internal examination including detailed anatomic evaluation, for any evidence of trauma. Examination will include layered musculocutaneous dissection of the neck and torso, exposure of optic nerve sheaths and middle ears, and examination of the spinal cord. Each of the organ systems will be examined, including detailed microscopic evaluation.

Additional procedures may be carried out depending on the autopsy or imaging findings. These may include; resection of fractures for decalcification (chemical treatment of bone that softens the tissue to allow for cutting into thin sections) and histology; *en bloc* resection and retention of injured organs; and removal and retention of the eyes.

The nature of the neuropathologic examination is at the discretion of the pathologist and may include consultation with a neuropathologist, with or without brain retention. While formal brain retention may still be required, overnight fixation and sampling has become common practice. In these cases, release of the body will be delayed to allow the tissues to be returned to the body. If the pathologist believes that organ retention is required, family members are promptly notified of this by the coroner. Disposition options for the retained tissue are discussed at that time, and the family wishes will be documented and provided to the pathologist.

Ancillary Testing

Frequently, the external and internal examinations completed at the time of autopsy do not review an anatomic cause of death. A so-called "negative autopsy" may present in a number of situations including, but not limited to:

- Toxicologic deaths
- Metabolic disorders
- Asphyxial deaths (i.e. airway obstruction)
- Infectious disease
- Cardiac diseases (i.e. conduction disorders)
- Sudden Infant Death Syndrome (SIDS)

Ancillary (additional) testing is therefore required to evaluate for these potential causes and includes:

- Histology
  - Comprehensive sampling of organs and tissues
  - Routine set of ~40 tissue samples
- Full toxicology
- Vitreous biochemistry (if eyes not retained)
- Post-mortem metabolic screen (blood and bile)
- Microbiology (bacterial and viral cultures)
- Fibroblast culture ± cytogenetics
  - to allow further molecular testing (if required)
  - to allow further metabolic testing (if required)

Report of Findings

The pathologist is responsible for documenting their findings in a transparent and reviewable manner, and opining on the cause of death and other relevant medicolegal issues. The final report of the post mortem examination must include documentation of all samples collected and tissues retained. In addition, all ancillary tests and consultation reports will be appended. Stakeholders understand that the complexity of post mortem examinations in children less than 5 years of age may lead to a longer than average turn-around time for the completed report.

The relevant medicolegal opinions provided by the pathologist will be reviewed in the context of the circumstances of death identified during the investigation. The coroner will provide a cause and manner of death upon completion of the investigation and when completing the medical certificate of death. It is not uncommon for no definitive anatomic or toxicologic cause of death to be identified despite the comprehensive post mortem examination process.

Following submission of the coroner's final report, the police investigative materials and the report of the post mortem examination will be reviewed by the Deaths Under 5 Review Committee.

Post Mortem Metabolic Testing: Implementation of a New Service

There are many metabolic disorders that represent potential causes of sudden and unexpected death in young children. In an effort to reduce the morbidity and mortality associated with these rare diseases, blood spot samples from all newborns in Ontario are screened for a total of 31 disorders. This testing is completed through Newborn Screening Ontario (NSO), a program associated with the Children's Hospital of Eastern Ontario in Ottawa. As part of any investigation into the death of a child under the age of five, coroners must obtain the NSO results and provide these to the examining pathologist.

A successful pilot project was undertaken in 2009 to inform the creation of province-wide metabolic testing of post mortem blood and bile samples by NSO. In July 2010, NSO became the sole provider of metabolic testing to the Ontario Forensic Pathology Service (OFPS) replacing a laboratory service based in the United States.

The post mortem testing by NSO is more comprehensive than that which was provided previously; the same panel is used for screening of post mortem samples as is used for all Ontario newborn samples (http://www.newbornscreening.on.ca).

Consideration was given to relying solely on the newborn screening results for ancillary post mortem metabolic testing. However, the current approach is based on the belief that terminal physiologic stress may increase the quantity of substrate present in the post mortem samples. Testing of bile spots may provide greater sensitivity for some diseases, as certain substrates are

more concentrated in the bile. In addition, the current process allows comparison of neonatal and postmortem testing results which facilitates quality based review of the newborn screening process. This has the potential to inform future newborn screening testing approaches.

Between July 14 and December 31, 2010, the Ontario Forensic Pathology Service submitted samples from 77 cases to NSO. The process has been both efficient and effective.

A recent case illustrates the utility of this new approach: Testing of samples from the sudden, unexpected death of a 3 month old revealed findings consistent with long chain acyl-CoA dehydrogenase (LCAD) deficiency; confirmatory testing is currently underway. There was clinicopathologic correlation with this finding. A retrospective review of the newborn screen result is also being undertaken, including review of the newborn testing reference ranges.

Apart from NSO meeting the need for post mortem metabolic testing for paediatric deaths, other benefits of the new testing protocol include:

1. The potential identification of a metabolic cause of death in the sudden and unexpected death of a child;
2. A potential public health benefit to the surviving family members;
3. Provision of a quality assurance measure for the current newborn screening process; and
4. Utilization of a “local” resource with ready availability for direct enquiries and potential for clinico-pathologic correlation at a reduced cost to the Ontario public.

Summary

Newborn Screening Ontario has successfully implemented a province-wide protocol for post mortem metabolic testing. This local resource supports one of the integral ancillary tests required during the post mortem examination of children under age five who die suddenly and unexpectedly. Implementation of this process is just another example of how the Office of the Chief Coroner and the Ontario Forensic Pathology Service work together to continually improve death investigations for the people of Ontario.

Working to Improve Patient Safety

Introduction

In 2004, the Baker and Norton Report was published. This has become a landmark paper which discussed the incidence of adverse events in hospitalized patients.[2] In their study they defined an adverse event (AE) as:

> " *…an unintended injury or complication that results in disability at the time of discharge, death or prolonged hospital stay and that is caused by health care management rather than by the patient's underlying disease process. We defined disability as temporary impairment of function lasting up to a year, permanent impairment of function or death. Health care management includes the actions of individual hospital staff as well as the broader systems and care processes and includes both acts of omission (failure to diagnose or treat) and acts of commission (incorrect diagnosis or treatment, or poor performance)."*

Their study demonstrated that an estimated 7.5% of patients admitted to acute care hospitals in Canada in the year 2000

experienced 1 or more adverse events. 36.9% of the patients affected were judged to have had a highly preventable adverse event. Most of the patients who experienced an adverse event recovered without a permanent disability. However, adverse events contributed to longer stays in hospital or temporary disability. A small group of patients died or experienced a permanent disability as a result of their adverse event(s). By extrapolation, the authors estimated that in 2000, "*between 141,250 and 232,250 of 2.5 million similar admissions to acute care hospitals in Canada were associated with an adverse event and that 9,250 to 23,750 deaths from AE's could have been prevented*[3]*."*

Accreditation Canada Required Organizational Practices (ROP)

Accreditation Canada is a non-profit independent organization, accredited by the International Society for Quality in Health Care. Accreditation Canada have been promoting quality in health care for a half a century. Hospitals and health care organizations have utilized their accreditation process to examine and improve the quality of services offered to their patients and clients. [4]

This group has developed specific required organizational practices (ROP) used in the accreditation process. These assist hospitals in improving safety and quality in services provided to their clients. Broadly, these are classified in six categories:

1. **Safety culture**
2. **Communication**
3. **Medication use**
4. **Worklife/workforce**
5. **Infection control**
6. **Risk assessment**

In 2009, they identified a number of new ROP's including: dangerous abbreviations,

[2] Baker, R and Norton, P et al, The Canadian Adverse Events Study: the incidence of adverse events among hospital patients in Canada, Can. Med. Assoc. J., May 2004; 170: 1678 – 1686.

[3] Ibid., pg. 1685.

[4] Accreditation Canada, 2010 Report on Required Organizational Practices: Result from Canadian Health Organizations.

heparin safety, narcotics safety, hand hygiene, and suicide prevention amongst others. In 2011, surgical checklists, workplace violence prevention, home safety risk assessment and venous thromboembolism (VTE) prophylaxis were newly added ROP's.

One ROP that is not infrequently identified during investigation of paediatric deaths is ***the effective information transfer at transition points.*** Several ROP's that have a high compliance rate of >75% nationally include:

- Ensures policies and procedures meet infection control guidelines
- Evaluates and limits availability of narcotic (opioid) products
- Adopts client safety as a written strategic goal
- Produces quarterly reports on client safety, including recommendations from adverse incidents
- Develops and implements a client safety plan

Opportunities for improvement with ROP's that have less than a 75% compliance rate include:

- Conducts medication reconciliation at admission
- Conducts medication reconciliation at transfer
- Defines roles, responsibilities and accountabilities for client care and safety
- Educates clients and families about their roles in promoting safety

Adverse Events in Children

There is an increasing body of literature with respect to hospital-reported medical errors in hospitalized children. According to Slonim et al, the rate of hospital-reported medical errors was between 1.81 and 2.96 per 100 discharges. In Slonim's United States-based study, which evaluated findings for the ten year period of 1988-1997, children with special medical needs or dependence on a medical technology had higher rates of hospital-reported medical errors.[5]

Miller reported patient safety events for hospitalized children and found that these occurred more frequently in the very young.[6] Dunn et al evaluated the success of a program of continuous medical record-based reviews of deaths, unexpected intensive care unit admissions, and admissions referred by medical and nursing staff for review in providing a range of adverse events from which a large paediatric hospital would gain insight. In that study evaluating a six year period, event types were categorized as related to: operations, procedures and anaesthesia (56.5%), diagnosis and therapy (24%), drug and fluid management (12.6%) and system issues (7%).[7]

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[5] Slonim AD., et al, Hospital-reported medical errors in children. Pediatrics. 2003 Mar;111(3):617-21.

[6] Miller MR., et al, Pediatric patient safety in hospitals: a national picture in 2000, Pediatrics. 2004 Sep; 114(3):907.

[7] Dunn, KL., et al, Medical record review of deaths, unexpected intensive care unit admissions, and clinician referrals; detection of adverse events and insight into the system. Arch Dis Child. 2006 February; 91(2): 169-172.

Case Examples

The Office of the Chief Coroner investigates many hospital-related deaths each year. Identifiers have been removed from the case descriptions in the interests of confidentiality.

These cases highlight:

1. Management of a foreign body aspiration in a 21 month old.
2. The diagnosis of Hirschsprung's disease in a 6 week old infant.
3. The ventilatory management of an infant with respiratory failure due to Respiratory Syncytial Virus (RSV).
4. Hemorrhagic shock complicating injury to a branch of the pulmonary vein during lung surgery in a 7 month old.

Case #1

A 21 month old boy was brought to the emergency department (ED) of a community hospital at 1930 hrs on August 14th with a history of a choking spell while eating popcorn. He became cyanosed and was given chest compressions in the home. After approximately 10 minutes, he began coughing. On arrival in the ED, his vital signs were pulse: 129/min; respiratory rate 24/min; O_2 saturation = 92%. A chest x-ray was done which was reported as normal. He was discharged 45 minutes later. Vital signs prior to discharge noted pulse 154/min; O_2 saturation = 95%.

He was brought back to the ED on August 16th at 2210 hrs with a history of choking spells and turning blue. His pulse was 156/min, respiratory rate 40/min and his oxygen saturation was 99%. A chest x-ray was done which was reported as normal. Contact was made with a paediatric intensivist at a tertiary care hospital and the child was transferred there accompanied by an anaesthesiologist and a respiratory therapist.

He arrived at 0030 hrs on August 17th. His vital signs were pulse 119/min, RR 50/min, temperature 36.7ºC. His saturation was 97%. He was in no obvious distress. He was seen by a paediatric intensive care specialist and an ear nose throat (ENT) consultant. Auscultation noted diminished air entry to the right lower lobe. This finding was noted by both physicians as well as a staff anaesthesiologist who also saw the child. The chest x-ray done in the community hospital was reviewed and considered normal. The ENT physician and the paediatric intensivist agreed on a plan to admit the child to the intensive care unit (ICU) for overnight observation. The nursing observations overnight noted "when patient upset raspy indrawing"; "hoarse with inspiration" and that the paediatric intensivist had "heard hoarseness." He was reassessed the following morning by the paediatric intensivist who ordered an inspiratory/expiratory chest x-ray. This was reviewed with the radiologist and reported to be normal. The child was discharged at 1700 hrs on August 17th with instructions for follow up with the family physician in one week.

At approximately 0825 hrs on August 20th, the child had an episode of choking and loss of consciousness at home. Emergency Medical Services (EMS) were called and when they arrived he was pulseless. Cardiopulmonary resuscitation (CPR) was commenced but he had no perfusing cardiac rhythm when he arrived in the ED of the community hospital. Restoration of cardiac output was achieved after 33 minutes of CPR.

He was transferred to a tertiary care centre where an emergency bronchoscopy was done and a split popcorn kernel was removed from the trachea. He failed to regain purposeful neurological function. Further investigations there confirmed that there was no possibility of any meaningful

neurological recovery, and with the agreement of the family treatment was withdrawn. He died on August 28th.

Cause of Death
Hypoxic ischemic encephalopathy (HIE)
due to cardiopulmonary arrest (resuscitated) *due to* aspiration of a foreign body (popcorn kernel).

Manner of Death
Accident

Themes and Comments

1. The cause of death was foreign body aspiration leading to airway obstruction, cardiac arrest and hypoxic ischemic encephalopathy.

2. The history of the child eating popcorn followed by several episodes of severe cyanosis should have mandated a bronchoscopy.

3. The observations of hoarseness while overnight in the ICU serve to underline that opinion.

4. Inspiratory/expiratory films are unreliable in excluding a foreign body and, given the history, would not be a suitable substitute for performing a bronchoscopy.

Recommendations

1. The tertiary care centre should perform a quality of care review of this death, to consider the total care, including the reasons why the Intensivist and ENT physician elected not to perform a bronchoscopy during the admission on August 17th.

Case #2

A male infant was seen at 23 days of age on October 15 at an urgent care clinic with a complaint of vomiting between one and two hours after every feed. His weight was 4.7 kilograms and he was passing stool 7 or 8 times a day. His abdomen was distended however the baby appeared well and in no distress. He was referred to the emergency room with a diagnosis of "query volvulus or malrotation". The referral note referred to "recurrent bilious emesis."

An abdominal x-ray was performed in the community radiology facility. The urgent care clinic physician interpreted the x-ray as "? – volvulus and malrotation." It was reported as demonstrating gaseous distention of the large bowel extending all the way down to the rectum with an appearance regarded as consistent with Hirshsprung's Disease. The report was transcribed on October 16, 2009 and printed on the same date. There was a handwritten note on the x-ray report saying "October 21/09, spoke to Mom will return. Patient's mother aware TCI (to come in)." There is a further note on November 4, 2009: "send letter."

The results were stamped on October 16th in which TCI routine was circled. The package also contained a letter from the urgent care clinic to the infant's parents dated November 4th, 2009, asking the parents to return to the clinic as soon as possible for review of the results.

The infant was seen in a community hospital Emergency Room(ER) on October 15th (the same day as the urgent care clinic visit and x-ray). Triage code was "urgent" and vital signs were normal (temperature 36.8ºC, pulse 136, respiratory rate 32, weight 4.62 kilograms, O_2 saturation 96%).

The physician's notes recorded vomiting with the last emesis 10 hours earlier and the last bowel movement 20 minutes earlier. The abdomen was distended; there was a note of bilious yellow vomiting. On examination, he looked well and was sleeping. The abdomen was described as distended and "taunt." Bowel sounds were present; "does not seem tender as does not awaken through

examination, but does arouse a little." The x-rays were interpreted by the Emergency Room physician as having large loops of gas in the bowel and non-specific. The x-ray was reviewed over the telephone with a paediatrician. The results of this assessment was recorded as "vomitus is not (illegible - ?green) and child is well, abdo soft and stooling non-specific, seems OK, can go home." Discharge diagnosis: "well child, feeding problem."

A later note by the Emergency Physician stated "vomiting white and yellow, is actually spitting up 1 to 2 hours after eating. Is gaining weight, no fever, does not cry unless hungry, passes soft breastfed stools, passes less gas than before. Watch closely if changes or cries with abdo pain, febrile or not passing stool." Baby was discharged home after this. It is noteworthy that the nursing record states that, "patient discharged home as per doctor's decision. Writer is uncomfortable with this."

On November 8th, 2009, the infant was found by his parents to be unresponsive in his crib. He was pronounced dead upon arrival at the community hospital.

An autopsy was performed and revealed a distended abdomen as a consequence of Hirschsprung's Disease with a section of the distal end of the bowel showing absence of ganglia in the resection margin. There was no cardiac lesion.

Cause of Death
Toxic Colitis due to Hirschsprung's Disease

Manner of Death
Natural

Themes and Comments

1. The history of bilious yellow vomiting and the presence of a taut distended abdomen, together with abnormal abdominal x-ray should have prompted referral to a paediatrician or surgeon by the ER physician, beyond a telephone consult. Surgical management (or even conservative rectal dilatation) at this stage would be expected to have a good outcome.

2. The final presentation of the sudden death as a result of toxic colitis is an unusual presentation of this entity. Traditionally, toxic colitis is stated to have 25% mortality in the newborn. However, more recent estimates are of the order of 2% even when infants present when they are gravely ill.

3. This was a preventable death.

Recommendations

1. The community hospital should perform a quality of care review of this death. This review should consider:
   - the discharge of an infant of 6 weeks of age with vomiting from an emergency department.
   - the interpretation of the abdominal x-rays by the emergency room physician.
   - the process for referral and/or verbal consultation with consultants.

2. The community hospital should share the results of its quality review with the Office of the Chief Coroner.

Case # 3

On March 24th, a one month old infant was admitted to a level II/modified level III neonatal intensive care unit after presenting with refusal to feed and respiratory difficulties. His admitting diagnosis was presumed RSV (Respiratory Syncytial Virus) bronchiolitis. RSV was cultured from a nasopharyngeal swab. 1L of oxygen by nasal prongs was required to maintain his oxygen saturations over 93%. He was continuing to feed after his admission to the general paediatric ward for observation and further management. Ventolin, 0.2 mL in 3 ccs normal saline was provided. He received

3% normal saline inhalations as well.

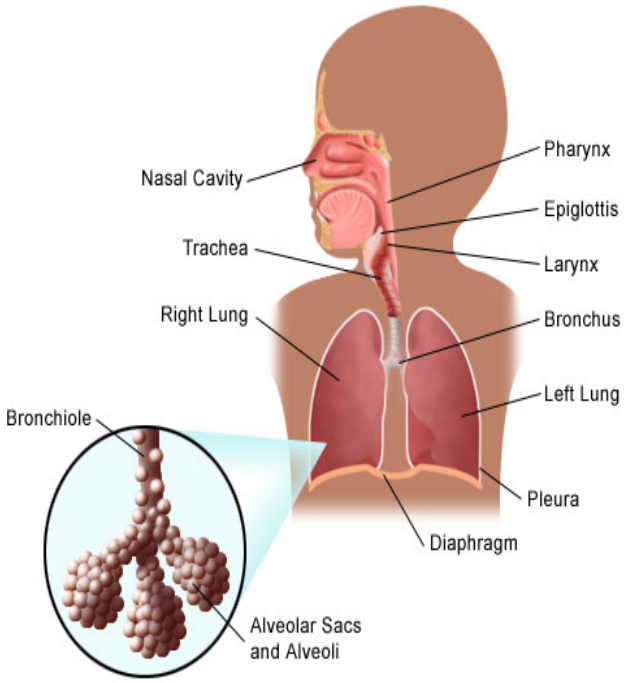
On March 25th, his work of breathing increased with refusal of feeds. A capillary blood gas (CBG) showed a pH of 7.35 with a CO_2 of 68 and bicarbonate of 38. He was transferred to the Neonatal Intensive Care Unit (NICU), to allow closer monitoring. Nasal CPAP (continuous positive airway pressure) at 5 cm of water was provided. Increased respiratory efforts and further rise of CO_2 developed on March 26.

A decision was made to intubate this baby in the NICU using fentanyl, midazolam, and atropine. A size 4.0 endotracheal tube (ETT) was placed and the patient was maintained with sedation (10 µg/kg/hr of midazolam) and neuromuscular blockade (0.4 mg of pavulon IV Q1 – 2h prn). Ampicillin 100 mg IV Q6 and gentamicin 10 mg IV Q8 were initiated. Blood cultures were not drawn. Intravenous fluids (D5 0.45 with 20 mmol of KCL/L) were provided at 20 cc/hr.

A chest x-ray done after intubation confirmed the ETT placement and some increased opacity in both lung bases was documented. Review of the chest x-ray noted that the lower end of the tube was located at the level of the clavicles. Ventilator settings were: rate of 60 and pressure 27/5.

Subsequent blood work showed a sodium of 136, potassium 5.5, chloride of 106, BUN of 2.2 and creatinine of 23. Hemoglobin was 115, WBC of 6.9, and platelets were 371. Numerous CBGs were completed while he was on the ventilator revealing improvement in blood gas values. His CO_2 had stabilized around 50 with a decrease in oxygen provided (FiO_2) to 35% by the end of the day. The ventilator rate was decreased to 50breaths/minute and pressure was decreased to 22/5. At 02:00 hrs on March 27th, CBGs demonstrated significant improvement with a pH of 7.37, CO_2 50 and bicarbonate 29. No ventilator changes were made at that time.

At approximately 0500 hrs on March 27th, his vital signs were: heart rate of 163, respiratory rate of 50, blood pressure 102/54. At around 0555 hrs bedside alarms alerted the nurse of a decreased heart rate and decreased oxygen saturation. The nurse disconnected the infant from the ventilator and started bagging with 100% oxygen, but the oxygen saturation continued to decrease to zero concurrent with a heart rate decrease. The respiratory therapist and paediatrician were called stat and full resuscitation efforts were initiated. The paediatrician arrived at the bedside within 5 minutes and assisted with the resuscitation. Given a lack of visible chest movement during bagging, the ETT position was checked with direct laryngoscopy. The tube was felt to be in the trachea. As the resuscitation proceeded, no chest movement with bagging continued prompting the paediatrician to perform a right chest needle thoracentesis. There was no evidence of an air leak. A bolus of fluid was given during this time.



As there was a continued lack of chest movement, at approximately 14 minutes into the resuscitation, the first ETT was removed and the infant was re-intubated on the second attempt. Ventolin was given through the ETT. Given an inability to obtain blood, no gases or blood work were completed. The resuscitative efforts were continued for approximately 50 minutes until the infant was pronounced deceased at 0645 hrs. A chest x-ray completed around 0642 hrs (after re-intubation) showed correct tube placement in the trachea, with the lower end just above the carina. An x-ray was not done at the time of sudden clinical deterioration.

Cause of Death
Complications of Respiratory Syncytial Virus (RSV) Bronchiolitis

Manner
Natural

Themes and Comments

1. This 1 month old baby had RSV positive bronchiolitis leading to respiratory failure, requiring intubation and mechanical ventilation.

2. The post mortem examination (and subsequent review) did not specifically demonstrate the exact sequence of his acute deterioration but revealed severe RSV bronchiolitis.

3. Clinical information suggested that the ETT was not functional. Despite the fact that the resuscitation team members confirmed the placement of the ETT by direct laryngoscopy, clinical findings (lack of chest movement with bagging, desaturation and bradycardia) suggested ETT displacement.

4. The ETT was changed approximately 14 minutes after resuscitation was initiated. Reintubation was successful and the placement of the tube was confirmed by chest x-ray.

5. This hospital has a level II/modified level III NICU. While the centre has neonatologists, daily management of critically ill children would be limited given the lack of critical care physicians and volume of patients. Consideration might have been given to transferring this child, given the severe RSV bronchiolitis.

6. A paediatric critical care unit may have responded optimally to this rapid deterioration.

Recommendations

1. The hospital should conduct a Quality of Care review of the care and management of this infant during his March 2010 admission with a focus upon:

   a. The approach to care and management of severe RSV in a community hospital.

   b. Use of sedation and neuromuscular blockade in the absence of in-house management by physicians with airway management expertise.

   c. The approach to airway management during the resuscitation attempts.

   d. The use of end tidal CO_2 monitoring in airway management.

2. The hospital should review the Pediatric Critical Care Network guidelines regarding management of critically ill children in their hospital and revise their approach if indicated.

Case #4

A 7 month old infant had a cystic lesion in his lung known as an intralobular sequestration of the left lower lobe with draining veins extending into the left inferior pulmonary vein.

He was brought to the operating room to proceed with surgical correction. The lung was collapsed and a thorascope inserted. Two abnormal systemic vessels, subsequently identified at autopsy as bronchial arteries, were seen arising from the thoracic aorta and these were dissected. These, and a third systemic vessel, also a bronchial artery, were ligated with 2-0 silk ties. The surgeon then dissected along the pulmonary ligament with the LigaSure V vessel sealing device until the inferior pulmonary vein was in view. Further dissection was undertaken along the right pulmonary artery to define the bronchial arteries arising from the pulmonary artery to the left lower lobe of the lung. These arterial branches were dissected individually and "sealed" and "divided" using the LigaSure device. No problems were identified.

The inferior pulmonary vein was dissected and the LigaSure device was used to seal the vessel. Without cutting the vessel, the surgeon opened the instrument jaws at which time the sealed tissues were observed to be stuck in the upper jaw. With gentle movements, the surgeon was able to free the jaw and the LigaSure device was reapplied to seal and divide the vein more proximally. As the surgeon opened the LigaSure device jaws, there was bleeding from the vein. A clip was applied to control the bleeding. The LigaSure instrument was removed from the patient. The surgeon asked the nurse to clean the instrument to minimize the chances of the instrument getting stuck again after sealing the vessels. The surgeon verified that the instrument was properly cleaned before reinserting it. The same vein was then sealed toward the lung distal to the clips that had been applied. The instrument was cleaned again and applied proximal to the clips without cutting the vein. When opening the instrument slowly, the tissue was stuck on the instrument and the vein was torn. Clips were used to try and control the bleeding, but this was unsuccessful.

There was a sudden onset of significant bleeding into the chest cavity and the decision was made immediately to convert to an open thoracotomy. The surgeon asked one of his colleagues to "scrub in" and help with the emergency thoracotomy. The paediatric cardiac surgeon was also paged and came to the operating room. Despite the emergency thoracotomy, the bleeding proved impossible to control and there were a series of cardiac arrests. Despite vigorous resuscitation, a sustained perfusing cardiac rhythm was impossible to achieve. The infant was declared dead and the case was reported to the coroner. The coroner seized the LigaSure V vessel sealing device and LigaSure vessel sealing system and arranged for an evaluation and testing.

The LigaSure vessel sealing system is an electrosurgical generator that delivers a controlled electrical current to specialized instruments used in laparoscopic procedures. In this case, the instrument was the LigaSure V vessel sealer/divider. These units were sent to a medical technology laboratory in Toronto for expert analysis. The LigaSure V vessel sealer/divider is a bipolar instrument with electric current passing from the conduction area of one of the jaws, through tissue held between the jaws, to the conduction area of the facing jaw. The instrument is used to seal blood vessels using heat and then divide this with a cutting blade that's built into the instrument. The expert reported a previous safety bulletin published in 2006 and a scientific literature article in 2007 which reported limitations of the device including:

- That the device should not be used to seal vessels greater than 7 mm

- There is a need to minimize tissue sticking to the instrument jaws as excessive sticking can lead to tearing of tissue after sealing and can interfere with the proper functioning of the instrument.

- Methods to minimize sticking include:
  - Keeping the jaws clean at all times
  - Cleaning the instrument more frequently when working in a bloody field
  - If consistent sticking is encountered, decreasing the bar setting of the power source

The expert noted a number of previous reports of LigaSure instruments sticking to tissue.

During the analysis of the instrument, the jaw blades were found to be contaminated with carbonized tissue which the consultant noted was indicative of excessive heat applied to the tissue causing sticking. The diameter of the pulmonary vein was not measured at autopsy. In the procedure performed leading to the death, the instrument was cleaned on two occasions. The power source was maintained at a 3 bar setting throughout the thorascopic procedure.

The expert noted that he felt the most likely cause was that the surgeon was attempting to use the instrument under conditions that were outside its defined limitations. However, the pulmonary vein was not measured at autopsy, making this finding difficult to substantiate.

Cause of Death
Haemorrhagic Shock

Due to Intraoperative Tearing of a Branch of the Pulmonary Vein

Complicating Surgical Removal of an Intralobular Sequestration of the Left Lower Lobe

Manner of Death
Accident

Themes and Comments

1. This death resulted from blood loss that occurred during an elective surgical procedure undertaken with a minimally invasive surgical technique.

2. Use of thorascopic approach is a standard procedure for pulmonary sequestration in paediatric centres. The frequency of thorascopic procedures at the hospital is unknown given the likelihood of relatively low paediatric surgical volumes. Experience is dependent on frequency of procedures.

3. The death resulted from an unanticipated complication of LigaSure V sealing/ divider device use. The approach to instrument use most likely led to tissue sticking on the jaws leading to tearing of the pulmonary vein.

4. Injury to a pulmonary vein is a high mortality event because of the difficulty in accessing the bleeding site to allow for proper repair.

5. Although the surgeon did have the instrument cleaned when sticking began to occur, it was this very same propensity for sticking that lead to the tragic tear.

Recommendations

1. The Regional Supervising Coroner should ensure that this death arising from use of the LigaSure sealing system is reported to Health Canada.

2. Health Canada should issue a product alert to health care practitioners utilizing the circumstances of this death to ensure they are fully informed of the possible complications arising from use of the LigaSure vessel sealing system.

3. The Chief of Paediatric Surgery at the hospital in consultation with the Chairman of Surgery at the University should facilitate a quality of care review of this case (with consideration of utilizing an external consultant) to focus upon:

   - The surgical approach utilized in a low volume procedure within the paediatric surgical department.

   - The approaches utilized during use of the LigaSure vessel sealing/dividing device as informed by the findings of the external consultant contained in this report.

4. The Ontario Hospital Association should utilize this case as an example to remind surgical departments of the previously identified safety risks with the LigaSure vessel sealing/dividing device.

These cases demonstrate the difficulties which can arise in the care of paediatric patients when they become ill, particularly the very young, and the challenges which health care practitioners face in treating them.

The Paediatric Death Review Committee continues to review the deaths of children in the hopes of improving outcomes for children whose illnesses bring them contact with health care. The hospitals and health care institutions with whom we have contact are continuously seeking to reduce adverse events for their patients and are very engaged in working through these complex deaths to ensure patient safety in the future.

Public and Patient Safety Initiatives

Within its mandate to promote public safety the Office of the Chief Coroner works to enhance patient safety. At times, both public and patient safety mandates are undertaken within a single case as presented below.

Past Medical History

April, the oldest of four children, was born with complex congenital cardiac defects including an atrioventricular septal defect (AVSD) and a coarctation of the aorta. She initially underwent pulmonary artery banding. At 9 months of age during surgery to repair her cardiac defects, she suffered a global cerebral hypoxic event which resulted in severe spastic quadriplegia and severe global developmental delay. As a result, she was confined to a wheelchair or her bed for the remainder of her life.

She developed a seizure disorder requiring more than one medication for seizure control. She was followed by neurology at the Health Sciences Centre until 2004. She was also treated with Baclofen, a drug for spasticity, and underwent a number of orthopaedic surgeries. She had recurrent urinary tract infections.

She was exclusively G-tube fed. Her G-tube feeds consisted of Compleat as directed by her community based dietician. Her medical condition predisposed her to chronic gastroesophageal reflux, for which she was prescribed Ranitidine, and respiratory problems including recurrent aspiration pneumonia.

In approximately 2003 in response to allegations of domestic violence, a restraining order was issued against her father. Her mother and the 4 children relocated from a western province to Ontario. In September 2003, her father committed suicide.

The office notes from her paediatrician on 3 December 2004 recorded that her physical examination was normal except for contractures, scoliosis, cerebral palsy and gingivitis. Her last visit to her paediatrician was on September 14th, 2005 for a pre-operative physical for dental surgery. At that time, her medications were recorded as Topiramate 150 mg twice daily, Baclofen 7.5 mg three times daily, Ranitidine 75 mg twice daily and Senekot 10 ml daily as necessary. The surgery on September 16th, 2005 was aborted due to hypotension and the inability to secure intravenous (IV) access. She did not attend for her scheduled June 26th, 2006 annual check-up. There was no evidence that she was seen by a physician after September 16th, 2005 until her death.

Serial measurements of her weight were documented. On June 25th, 2006 her weight was 21.7 kg (48 lbs) and by September 19th, 2006, it was 60.5 lbs. Community Care Access Centre (CCAC) school and home-based services were terminated at her mother's request because she was no longer in school in September 2006.

Review of the pharmacy records demonstrated that the Ranitidine, Topiramate, Baclofen and Senekot were not refilled after May 25th, 2005. Repeats of 120 cans of Compleat were dispensed approximately every 3 months until 4 January 4th, 2008.

The Children's Aid Society (CAS) had 4 separate child protection interventions with the family between 2004 and 2006.

The last contact of CAS with the family commenced on March 22, 2006 in response to a complaint from an involved physiotherapist who alleged that the child's mother was watering down her feeds and was not meeting her daughter's physical needs by failing to follow through with required medical appointments. She had withdrawn April from school and had failed to ensure that the required repairs occurred for her daughter's wheelchair.

At the time of the final referral, April was 16 years of age and her age exceeded the legislated mandate of the child welfare agency. Initially, a decision was made that the complaint could not be investigated, however, after consultation with the senior management of the CAS, a decision was made that the allegations would be investigated.

During a telephone consultation with the referral source on March 29th, 2006, it was learned that the personal support workers no longer attended the residence unless her mother previously provided approval for their visit. It was also reported that the majority of calls to her mother from community-based professionals were unanswered.

On April 20th, 2006, it was learned that her mother had cancelled any further appointments with the dietician. On April 28th, 2006, the CAS closed their file on the family.

Terminal Events

On February 18th, 2008, at approximately 0040 hrs her mother called 911 and reported that her 17 year old daughter was cold to the touch and was unresponsive. Her mother removed her from her bed in the living room of the main floor of the house, and placed her on the floor. Upon arrival of EMS, her mother informed them that the child had been experiencing respiratory difficulties for the 2 to 3 days prior and that she had last checked on her daughter at approximately 2200 hrs on February 17th, 2008. The EMS personnel found the child's vital signs absent and made no resuscitative efforts.

Post Mortem Findings

Post mortem examination revealed that the child weighed only 35.2 pounds (16 kg) at the time of her death. She was noted to be in a state of marked cachexia with flexure contractions of her upper and lower extremities. There was no subcutaneous fat or omental fat. An open ulcer was noted on her right hip, exposing a metal prosthesis. She had very lax skin indicating dehydration and extensive and numerous head lice. There was fibrosis of the heart from previous surgery.

Microscopic examination of the lungs showed evidence of chronic aspiration pneumonia with a superimposed acute bronchitis. There was scarring of the myocardium, but no other cardiac abnormalities.

Vitreous fluid analysis showed an elevated sodium of 165, chloride of 150 and urea of 22.5. Creatinine was 64. The femoral blood Topiramate level, an anti-seizure drug was < 6.3 mg/L , which was subtherapeutic.

Neuropathological examination confirmed extensive remote global hypoxic ischemic injury.

Cause of Death
Acute bronchitis, superimposed on aspiration pneumonitis, due to dehydration and malnutrition.
***Contributing factors**:* Congenital heart disease (repaired), severe chronic hypoxic ischemic encephalopathy.

Manner
Homicide

Comments and Issues Raised

From the Coroner's Investigation Statement:

"The records suggest that the support agencies and health care professionals had been quite actively involved up until 2005 or 2006. Included in their reports was the fact that many appointments were cancelled and many attempts to contact her mother went without response. Access to the home was apparently difficult. As she got older, it is understood that some of these agencies no longer had legal authority or obligation to continue monitoring the situation. The

photographs were particularly helpful in that the deceased appeared to have been previously well nourished. The mother appeared to have had issues with her other children's schooling and ultimately withdrew them from school. She had last been seen by her paediatrician in September 2005 and had not been taken for her scheduled annual exam in June 2006. The prescriptions for her tube feedings in the months prior to her demise suggested that she was not receiving as much as had been prescribed. In essence, it could not be ascertained with certainty that anyone who might have been able to appropriately assess the deceased's health had seen her for a year or more.

It was concluded that the deceased had been severely neglected, leading to her death. As a result of these investigations, criminal charges were laid against the mother."

The mother was convicted of manslaughter and sentenced to five years in custody.

Protection of 16 and 17 year old developmentally delayed youth at risk of harm

The *Child and Family Services Act* affords no protection to youth sixteen (16) and seventeen (17) years of age unless they are the subject of a court order.

The Ministry of the Attorney General's Office of the Public Guardian and Trustee mandate is specific to adults eighteen (18) years of age and older.

This deceased was significantly at risk and extremely vulnerable. This was recognized by her school, CCAC workers, paediatrician, allied health professionals and the CAS. The CAS and CCAC case files were however, still closed in September 2006. It is clear that she deteriorated from September 2006 until her death in February 2008. She was relatively well and stable at her September 2005 preoperative medical assessment by her paediatrician. Her weight was up to 60.5 lbs on September 19th, 2006. She was however, not seen by a medical professional after September 19th, 2006. Her medications except for the Compleat, were not refilled after May 25th, 2005.

Consideration could have been given to obtaining a court order under the Child and Family Services Act to ensure that she received appropriate medical care and services until she became an adult, and then the Office of the Public Guardian and Trustee could have ensured ongoing care for her. She was clearly at high risk of a negative outcome and it is possible that had all the various services and caregivers been well coordinated, that a different course of action may have resulted.

PDRC Medical and Child Welfare Analysis of Society Actions and Decisions:

- All children presented in the family as vulnerable: April had significant physical and medical disabilities while all of her siblings were home schooled.

- April's weight was documented in 2006 by the Association for Community Living as 63 pounds. At the time of her death she weighed 35.2 pounds (16 kg).

- April's last contact with a medical professional occurred in September 2005.

- April's mother stated that on April 13th, 2006 that she was feeding April two cans of meal supplement per day. Subsequent medical review incorporating a 2006 Dietician's recommendation indicated that a seventeen year old requires at minimum, a daily intake of 1700 – 1800, calories or the equivalent of five (5) cans of "Compleat" plus two cans of "Resource."

- The CAS made a decision to investigate the March 22, 2006 complaint even though April was 16 years of age; an age which exceeded their mandate as per the Child and Family Services Act.

- The majority of mandatory provincial recording documents were completed in excess of established timeframes.

- The CAS in Ontario did not seek the physical records of the western province's Ministry of Children and Family Services.

- The CAS attended one case conference involving the school and community service providers involved in service on behalf of April, but declined participation in two other proposed meetings.

- There was no evidence in the submitted materials that the October 29th, 2004 allegation that all children had head lice, that the residence smelled of cat litter and that there was no food in the home was actively investigated by the CAS.

- During all investigations, the CAS was diligent in contacting involved community based service providers including April's physicians and dentist.

- No substantive child protection concerns were ever noted by the physicians and/or dentist involved in the care of April.

- During a December 2, 2005 contact, the involved in-home support worker advised the CAS that in two years of direct service, no child protection concerns had been identified.

- April's mother demonstrated a repeated pattern of failing to consistently follow up on services required or recommended for April.

- Her mother eventually withdrew April from school ostensibly in response to the number of child welfare complaints made by the involved school board.

- There was no evidence that the CAS considered involuntary intervention during their four interventions with April's family.

- There is an absence of legislated protection for 16 and 17 year old developmentally and/or physically handicapped youth who have allegedly suffered from, or are at risk of harm.

PDRC Recommendations

1. **The Government of Ontario, Ministry of Child and Youth Services (MCYS) should consider proclaiming legislation protecting sixteen (16) and seventeen (17) year old developmentally and/or physically handicapped youth who may have allegedly suffered from, or be at risk of harm, or neglect.**

The *Child and Family Services Act* affords no protection to youth sixteen (16) and seventeen (17) years of age unless they are the subject of a court order. The *Developmental Services Act* and the *Services and Supports to Promote the Social Inclusion of Persons with Developmental Disabilities Act* afford no protection to youth under the age of eighteen (18). The Ministry of the Attorney General's Office of the Public Guardian and Trustee mandate is specific to adults eighteen (18) years of age and older. There is clear evidence of a gap in legislation protecting vulnerable 16 and 17 year old youth.

2. **The Children's Aid Society should ensure a standard practice of securing the child protection records of their clients, as applicable, which are held by other child welfare authorities.**

Submitted documentation referenced existing child protection files on the family from the western provinces child welfare authorities and while telephone consultation occurred, the case manager did not request copies of file materials, even though there was direction to do so by the managing supervisor.

3. The Children's Aid Society should ensure compliance to Provincial Recording Standards.

In addition to meeting Provincial child protection standards, recordings also provide opportunity to regularly and critically assess service effectiveness through application of structured assessment, reflection and collaboration with all involved parties.

4. The Children's Aid Society should consider case conferencing as a preferred practice model involving all community based organizations and individuals involved in service provision to a child and family.

The CAS did not participate in two of three proposed case conferences organized by April's school. Participation may have provided additional information about the family, the perceived risks as well as served to identify the unique roles and responsibilities of each organization.

5. The Office of the Chief Coroner through the Regional Supervising Coroner should convene a case conference including but not limited to the CAS, the Community Care Access Centre, the District School Board, the Office of the Public Guardian and Trustee and the Child Welfare Specialist at the OCC.

This case conference will serve to review the roles and responsibilities of the various service providers as applicable during April's life and in particular following her sixteenth (16) birthday, in order to identify service gaps and/or other avenues available to protect developmentally handicapped youth.

The case conference was conducted on April 15, 2011. The results are as follows:

The CAS:

- The CAS has reaffirmed policy changes regarding obtaining information from outside regions and also addressing documentation issues
- The CAS agreed that there was a necessity for a focus on case conferences and their value was reinforced
- Case conferencing for 'individually fragile' individuals under the auspices of support services was felt to be essential for high quality care

Office of the Public Guardian and Trustee (OPG&T - part of the Ministry of the Attorney General):

- Identified that adults classified as of age 16 for personal care; age 18 for property
- Discussion occurred regarding the added value of multidisciplinary case conferences at age 16 for high risk individuals and consideration of OPG&T being involved with this case conference.

District School Board:

- Identified that "Learning to Age 18" is new legislation proclaimed in 2005 requiring attendance at school to age 18 and no longer just age 16 unless "lawfully excused" from attendance in accordance with section 21 of the *Education Act* (which includes home schooling under PPM131)
- The School Board now employs five social workers to support students to liaise with other agencies
- The School Board has reviewed and explored the added value of a multidisciplinary case conference considered at age 18 and prior to leaving the school system

Conclusions:

1. Consideration of multi-agency transition case conferencing for high risk individuals:

   a. as required
   b. at age 16 and prior to leaving the mandated age scope of the CAS and should include OPG&T, as appropriate
   c. at age 18 and/or prior to leaving the mandate of the School Board and to include OPG&T, as appropriate

2. Consideration that PDRC recommend to the Ministry of Children and Youth Services that high risk children require agency case review to ensure proper care and supervision after age 16, and that the Ministry raise the age of children in need of protection to age 18 like other provinces.

3. Consideration that the PDRC recommend to the Ministry of the Attorney General that the definition of "facility" be expanded to include access to records held by School Boards and Children's Aid Societies.

Note: The Ontario Association of Children's Aid Societies (OACAS) recently released the 2011 Child Welfare Report (*Children's Well-Being: The Ontario Perspective)* which includes the results of a survey of 1002 randomly selected Ontarians regarding their views on child welfare. Survey respondents flagged the "age of protection" as a top priority for child welfare agencies. Currently, Children's Aid Societies (CASs) are unable to protect children 16 or older even if there are concerns for the safety of youth. Only 7% of the survey respondents feel that it is adequate to protect children only until the age of 16, whereas 49% of respondents said that the age of protection should be 18, 12% said the age of 19 and a further 26% of respondents believe youth should be protected to the age of 21.

Also, see the response from the Ministry of Children and Youth Services on page 88.

PDRC Medical Reviews: Themes and Recommendations

Purpose of the PDRC Medical Review

Medical reviews are undertaken to provide clarity to medical issues involved in the time preceding a child's death to ensure that the Regional Supervising Coroner has a complete understanding of the circumstances of the death. The cause and manner of death are provided and recommendations may flow from the findings or the Committee review. Themes may emerge from each review, but also over time as similar issues are identified in other reviews.

Commonly, recommendations are directed to health care facilities and suggest that the organization:

1. Review the death through a Quality of Care Review Process, allowing the health care organization, which has a far better understanding of its human and fiscal resources, to develop internal processes and policies to avoid similar outcomes in the future. The health care organization will be asked to inform the Committee Chair of the recommendations that arise from their internal review process.

2. Review a health care provider's performance.

3. Participate in a Regional Coroner's Review, or occasionally, an inquest.

4. Conduct an educational meeting utilizing the circumstances of the death to illustrate historical facts and medical issues with health care providers.

PDRC Medical Case Reviews by Year and Manner of Death (2004-2010)

Manner of Death	2004	2005	2006	2007	2008	2009	2010
Natural	18	20	20	17	30	19	19
Accident	3	1	0	0	1	2	2
Homicide	1	0	0	0	1	0	2
Suicide	2	0	0	1	0	0	0
Undetermined	3	0	3	0	8	7	5
Total Case Reviews:	**27**	**21**	**23**	**18**	**40**	**28**	**28**

PDRC Medical Case Reviews (2009-2010)

System/Mechanism	Number of Cases Reviewed 2009	2010	Medical Causes of Death for Cases Reviewed in 2010
Adverse Events	**3**	**1**	1. Intra-operative hemorrhage due to left lower lobectomy for intralobular sequestration
Cardiac	**3**	**5**	1. Probable dilated cardiomyopathy 2. Cardiac decompensation due to critical aortic stenosis; complicating hypoxic-ischemic encephalopathy 3. Complex congenital heart disease 4. Complications of complex congenital heart disease 5. Hypoxic ischemic complications of cardiopulmonary arrest (resuscitated) due to unascertained. Contributing factors: prolonged QT interval and benign myoclonic epilepsy
Congenital	**5**	**5**	1. Hypoxic-ischemic complications of anomolous origin of left coronary arteries from main pulmonary artery 2. Acute heart allograft rejection due to unascertained; Contributory factor: intercurrent laryngotracheobronchitis 3. Multi-organ failure due to Recurrent Wilms Tumour 4. Toxic colitis due to Hirschsprung's Disease 5. E. coli sepsis due to or as a consequence of: aspiration pneumonia; due to or as a consequence of: bowel obstruction; due to or as a consequence of: congenital anal stenosis
Infectious	**6**	**4**	1. Septic complications of streptococcus pneumoniae pneumonia 2. Staphylococcus aureus septicemia 3. Muti-organ failure due to cardiopulmonary arrest (resuscitated) due to unascertained in the presence of clinical features of infection 4. Myocardial ischemic complications of thrombotic microangiopathy (hemolytic uremic syndrome (HUS))
Metabolic	**2**	**0**	
Neglect	**0**	**1**	1. Acute bronchitis, superimposed on aspiration pneumonitis and malnutrition
Neurological	**1**	**2**	1. Brainstem herniation due to raised intercranial pressure due to cerebellar tumour 2. Pneumonia due to cerebral edema due to complications of status epilepticus

System/Mechanism	Number of Cases Reviewed 2009	2010	Medical Causes of Death for Cases Reviewed in 2010
Poisoning	**1**	**0**	
Respiratory	**1**	**5**	1. Hypoxic ischemic encephalopathy due to cardiopulmonary arrest (resuscitated) due to aspiration of a foreign body 2. Acute and chronic tracheal bronchitis with patchy bilateral pneumonia 3. Respiratory syncytial virus bronchiolitis 4. Bilateral acute bronchopneumonia contributing factor hydanencephaly 5. Saddle pulmonary embolism
Sudden Unexpected Death in Infancy (SUDI)	**3**	**2**	1. No definitive anatomic or toxicologic cause of death identified; Sudden Unexpected Death in Infancy (SUDI) in an unsafe sleeping environment (cluttered crib) 2. No definitive anatomic or toxicologic cause of death; Sudden Unexpected Death in Infancy (SUDI) in the presence of bed sharing in an unsafe sleeping environment (adult bed with both parents); Contributing factor: Patent Ductus Arteriosis
Trauma	**1**	**1**	1. Craniocerebral trauma associated with multiple traumatic injuries (recent and healing). Contributing Factors: Bilateral bronchial pneumonia.
Unascertained	**2**	**2**	1. No definitive anatomic or toxicologic cause of death 2. Complications of hypoxic ischemic encephalopathy due to cardiopulmonary arrest (resuscitated) due to unascertained manner of death
Total Reviews	**28**	**28**	

Medical Case Reviews: Themes

Since its inception in 1991, the Paediatric Death Review Committee has compiled a number of common themes that have recurred in the review of children's deaths. Our reviews echo the findings of an increasing volume of literature on errors in medicine, which suggests that tragedies rarely result from a single fatal error or flaw and are more likely to arise from a series of latent flaws in both systems and in performance. The occurrence of multiple imperfections is frequently synergistic.

In 2010, a total of 28 medical cases were reviewed by the PDRC and upon completion of the comprehensive review and analysis of each case, the cases were determined to be associated with 5 major themes. These themes and a brief description of inclusive characteristics have been outlined as follows:

1. **Treatment – Quality of Care**
   - failure to record vital signs
   - failure to appreciate abnormal vital signs
   - errors in diagnosis and subsequent intervention
   - poor follow up and monitoring of compliance and attendance of patients at follow up appointments
   - lack of adherence to established protocols

2. **Differential Diagnosis**
   - Non-recognition or lack of appreciation of symptoms, laboratory test results, diagnostic imaging, vital signs or patient response to current treatment. This subsequently precluded the initiation of further testing and or a broader consideration of differential diagnosis.

3. **Documentation**
   - failure to document patient records in a timely and/or qualitative consistent manner
   - poor or illegible hand writing

4. **Communication**
   - lack of transfer and/or discussion of vital patient information between and among physicians and medical specialty departments
   - lack of comprehensive and failure to articulate discharge advice/ instruction

5. **Medical Transport**
   - communication issues with transferring and receiving health facilities
   - paediatric resource issues
   - transfer record issues

Paediatric Death Review Committee: Medical Case Review

Past Medical History

This 19 day old male was born to a 23 year old Gravida 4 Para 3 mother with two previous live term deliveries, one in 2005 and the other in 2006. The date of her last menstrual period (LMP) was April 15, 2009, giving an expected date of delivery (EDD) of January 25, 2010.

The hospital chart did not contain the record of antenatal visits, but his mother appears to have been healthy. She presented in labour with ruptured membranes on December 17th and had a spontaneous vaginal delivery shortly after admission. Gestational age was recorded as 35-36 weeks although the LMP and EDD suggested it should be 34 weeks and 6 days.

This infant's birth weight was 2.975 kg – no physical anomalies were present and apart from marginal hypoglycemia (1.9) at 30 minutes of age, the neonatal period was uneventful. He was discharged home after two days with a discharge weight of 2.795 kg and arrangements were made for follow-up at 48 hours.

His mother was unable to keep the 48 hour appointment (on December 21st) because of car problems and presented at the Emergency Room(ER) of a community hospital with her child on December 23rd with jaundice. Bilirubin in the ER was 360. The baby had been breastfeeding well with normal stools and regular voiding. He was managed overnight with feeding supplements and phototherapy. Overnight the bilirubin came down to 295 and subsequently to 256 and his weight had risen from 2.795 to 2.8 kg.

He was discharged home on December 24th with arrangements for a bilirubin check the following day.

The child did well, but presented at the ER of the community hospital again on January 1st with a history of two days of a cough. The nursing note said that he was turning blue intermittently and was vomiting his entire milk intake.

There were three pages of notes in the chart. The first was an emergency triage record. This contained a note documenting a heart rate of 118, respiratory rate of 30 and oxygen saturation of 100%. He was also observed as breathing "easy/no distress, pink in colour and alert with moist mucus membranes." There was no record of temperature or weight.

The second page with similar handwriting included a temperature recording of 32.7ºC (rectal), but no other data aside from a repeat of the brief history.

The third page appeared to be a physician record which contained no vital signs, a brief note saying: "no fever, vomiting since the morning with no diarrhea, saturating at 100%." Some words are illegible although "abdo soft non-tender" was easily read. Diagnosis was reported as an upper respiratory infection (URI) and the plan was for family doctor follow-up and return to the Emergency Room if the infant worsened.

There was no record of any investigation and it appeared that the family arrived at the community hospital ER at 2128 hrs, were seen at 2145 hrs, and had been discharged home by 2200 hrs suggesting that no x-ray or blood work was considered and that the infant was felt to be stable.

On January 3rd, the child was brought to the community hospital ER with vital signs absent. During the previous day and a half, he had been difficult to rouse and became increasingly cold. He was bundled up and it was the grandmother who opened the blankets to find him not breathing and

responding to stimulation. Emergency Medical Services (EMS) initiated cardiopulmonary resuscitation (CPR) and arrived at the hospital some 15 minutes later, giving bag and mask ventilation. CPR resuscitation consisted of intubation and ventilation, four boluses of normal saline, three boluses of bicarbonate, three doses of epinephrine and initiation of dopamine, ampicillin and Cefotaxime. Heart sounds were first heard at 2030 hrs suggesting a minimum of one hour of absent cardiac activity.

The child was subsequently transferred to a paediatric hospital. On arrival, he was hypothermic with a temperature of 29ºC. His pH was 6.8 and despite continuous aggressive resuscitation, his lactate continued to rise and his pupils became fixed and non-reactive to light. Despite aggressive supportive management, he had severe multi-organ dysfunction and the parents agreed to the withdrawal of life support. He died on January 5th, 2010.

Post Mortem Examination Findings

An autopsy revealed a respiratory syncytial virus (RSV) pneumonia, with positive RSV immunostaining of the bronchiolar and tracheal epithelium. There was multiple organ failure with acute renal necrosis. A heavy growth of pseudomonas and coliforms and Staph aureus were obtained from the lung tissue and there was severe global hypoxic-ischaemic damage in the central nervous system (CNS).

Cause of Death
Hypoxic-ischemic multi-organ failure due to cardiopulmonary arrest (resuscitated) due to respiratory syncytial virus (RSV) pneumonia
Contributing factor: Prematurity

Manner of Death
Natural

Comments and Issues Raised

Infection with RSV is extremely common in childhood and it is commonly stated that almost all children in North America will have been exposed to the organism by the second to fourth year of life. However, infection in the first four weeks of life is uncommon and occurs one-third of the time compared to the second month of life. In the neonatal period, its clinical expression is atypical and diagnosis is frequently unsuspected or delayed. However, the illness typically is relatively mild and presents with cough and on some occasions, apnea.

In an outbreak in a Newcastle nursery it was found that out of 8 infants, only 1 had radiographic evidence of pneumonia. In another outbreak occurring over 3 months in Rochester, New York, in a Neonatal Intensive Care Unit (NICU), the mortality was 17% with death being sudden and unexpected in half of the babies who died (information from the Feigin Textbook of Paediatric Infectious Disease).

Mortality for RSV is less than 1% and is almost entirely confined to high risk infants with chronic lung disease, congenital heart disease or survivors of extreme prematurity. Hospital admission is usually recommended for infants in these groups and also in infants with respiratory rate uncertainty, abnormalities on chest x-rays and oxygen saturation of less than 95% on room air. Hospital admission is frequently recommended for infants less than 3 months of age.

This assumes however, that the diagnosis of RSV has been made at the time of presentation, and as stated above, atypical presentations mean that this will not always occur.

Palivizumab prophylaxis is effective in reducing the need for hospital admission and mortality. Current American Academy of Pediatrics (AAP) recommendations

include administration to infants at 32-35 weeks gestation who are younger than three months at the start of the RSV season and who have one or more siblings younger than five years of age. A slightly different approach is used in Ontario with a questionnaire which adds parental smoking, gender and an absent family history of eczema to calculate risk levels. Using either approach, this child met criteria for prophylaxis. However, possibly because of the inaccuracy in calculating gestational age, or because of his stability, size and brief hospital stay, it appears not to have been considered. The proportion of infants similar to this child who actually receive prophylaxis is unknown, but may not be high.

Presentation of a two week old infant with a cough, particularly associated with colour change is unusual and the Paediatric Death Review Committee believes it should have demanded a significant degree of investigation, including at the very least, a chest x-ray and CBC.

A temperature of 32.7ºC appears to have been considered to be a technical error. However, it may have been a significant finding in light of the infant's final diagnosis, and at the very least, should have been repeated.

Recommendations

1. A quality of care review of the death of this child should be conducted by the community hospital involving the Emergency Department and the Department of Paediatrics/ Neonatology.

   The review should focus on RSV prophylaxis in infants with moderate prematurity, with particular emphasis on:

   a) Emergency Room (ER) management of infants less than one month of age, presenting to an ER, with a cough and episodes of turning blue, vomiting, a recorded temperature of 32.7ºC (rectal) and prematurity.

   b) ER recording of temperature in infants and the significance of hypothermia.

2. The Office of the Chief Coroner should include this case in their Annual Report of the Paediatric Death Review Committee/ Deaths Under Five Committee.

The hospital has responded to the Office of the Chief Coroner that recommendation #1 has been implemented.

Paediatric Death Review Committee: Journal Publication

Fatal Hydrocodone Overdose in a Child: Pharmacogenetics and Drug Interactions

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Fatal opioid toxicity occurred in a developmentally delayed child aged 5 years 9 months who was inadvertently administered high doses of hydrocodone for a respiratory tract infection. The concentration of hydrocodone in postmortem blood was in the range associated with fatality; however, hydromorphone, a major metabolite catalyzed by cytochrome P450 2D6 (CYP2D6), was not detected when using mass spectrometry. Genetic analysis revealed that the child had a reduced capability to metabolize the drug via the CYP2D6 pathway (*CYP2D6*2A/*41*). Coadministration of clarithromycin (a potent cytochrome P450 3A4 inhibitor) for an ear infection and valproic acid for seizures since birth further prevented drug elimination from the body. This case highlights the interplay between pharmacogenetic factors, drug-drug interactions, and dose-related toxicity in a child.

Key Words: hydrocodone • adverse drug event • child • CYP3A4 • CYP2D6 • clarithromycin • valproic acid

Abbreviations: CYP2D6 = cytochrome P450 2D6 • CYP3A4 = cytochrome P450 3A4 • UGT = uridine diphosphate glucuronosyltransferase • GC = gas chromatography

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Vol. 126 No. 4 October 2010, pp. e986-e989
(doi:10.1542/peds.2009-1907) by the AAP

Research Study

Accidental deaths of children in Ontario 11-15 years old during the years 2004 to 2007

What are the behavioural, social and environmental risk factors that are associated with paediatric accidental deaths in children ages 11 to 15 in Ontario?

Laura Walker, Student Researcher, Faculty of Medicine, University of Toronto, Karen Bridgman-Acker, Child Welfare Specialist, OCC, and Dr. James Edwards, Regional Supervising Coroner, OCC

Abstract

MeSH keywords: Child, Cause of death, Accidents, Risk factors

The objective of this study was to determine the behavioural, social and environmental risk factors that are associated with paediatric accidental death. The study population that we used were children, ages 11 to 15, who died in Ontario due to accidental causes between January 1st, 2004 and December 31st, 2007 inclusive. The determinant of health in question was education, and more specifically, public health policy, which is particularly relevant to the primary prevention of accidental fatalities in youth.

The 11 to 15 age category was subdivided into 11-13 and 14-15 age categories. Overall, the number one cause of accidental death in both age categories was motor vehicle collisions (MVCs) where the child was a passenger, followed by drowning. The majority of accidental fatalities occurred in boys, and the majority of children in both age groups were actively involved in their death. In both age groups, over 1/3 of MVC fatalities occurred when the child was not wearing a seatbelt.

Approximately 75% of fire fatalities in both age groups occurred in the home. In the 11-13 age group, almost 70% of fire fatalities occurred in the context of a non-functioning or non-installed smoke alarm.

The overwhelming majority of children in both age groups involved in off-road motorized vehicle fatalities were wearing a helmet during the incident. However, approximately 67% of children in both age groups involved in biking fatalities did not use a helmet. It is therefore evident that by increasing the amount of youth and parental safety education programs, and by enforcing stricter provincial policies, many paediatric accidental deaths of these types could be prevented in the future.

Background

The Office of the Chief Coroner (OCC) for Ontario serves the living through high quality death investigations and inquests to ensure that no death will be overlooked, concealed or ignored. The findings are used to generate recommendations to help improve public safety and prevent deaths in similar circumstances.[1] The OCC investigates deaths in individuals of all ages. Of particular concern, however, is the paediatric population. This population is particularly vulnerable to unintentional injuries leading to fatality, which necessitates the need for various primary prevention programs to be put in place to reduce these risks. In fact, unintentional injuries are the leading cause of mortality in children ages 0 to 19 in Canada.[2] In the 2009 British Columbia Child Death Review, it was found that 43 percent of all childhood deaths reviewed were due to accidental causes, with motor vehicle collisions representing the largest fraction in this category.[3] In addition, this study found that 60 percent of all childhood deaths were preventable.[3] The most recent completed investigations from 2007 conducted by the OCC revealed that accidental deaths

represented 35 percent of all investigated deaths in children ages 0 to 19.[4] Depending on the particular paediatric age group, certain types of accidental causes of death will be more prevalent than others. There are obvious differences amongst children who are 0 to 19 years of age; thus, it is practical and relevant to segregate this large age group into smaller age ranges. A recent study conducted by the OCC revealed that in children ages 5 to 10 in Ontario, the leading cause of accidental deaths was motor vehicle collisions where the child was a passenger, followed by drowning.[5] Although this is true, the OCC has yet to extensively analyze the particular causes of accidental deaths in other paediatric age groups. Thus, the focus of this research project is to analyze the causes and risk factors associated with paediatric accidental deaths in children ages 11 to 15 in Ontario and to provide the OCC with a more comprehensive view of paediatric accidental deaths across a wider age range.

The Jakarta declaration states that building healthy public policy is one of the five essential strategies that can strengthen health promotion in society.[6] Education and legislation via public health policy is a powerful tool in preventing injuries and accidental deaths in many societies.

There are many examples in Canada that illustrate the positive impact of healthy public policy on the prevention of accidental injury and death in youth. When the Ontario legislation requiring all persons 18 years of age and younger to wear a helmet was implemented, bicycle-related mortality was reduced by 52%.[7]

By elucidating the risk factors associated with paediatric accidental death in children ages 11 to 15 in Ontario, this research will enable the OCC to direct recommendations toward primary prevention programs in Ontario in order to create safer environments for children. This project's research question is as follows: What are the behavioural, social and environmental risk factors that are associated with paediatric accidental deaths in children ages 11 to 15 in Ontario?

Methodology

All accidental causes of paediatric death in Ontario that occurred in children ages 11 to 15, between January 1st, 2004 and December 31st, 2007 were retrospectively reviewed. The data were obtained from coroner reports and case files, which contained data about the date of death, gender and age of the deceased, geographic region of death, the death environment, and cause of death. Compared to coroner reports, case files contained additional information, such as police and Fire Marshal reports, pathology reports, toxicology reports, and CAS reports. Both coroner reports and case files also contained "cause of death-specific" data, such as information about seatbelt, helmet, and life jacket use, alcohol and drug abuse during the incident, as well as smoke detector status, weather conditions, and types of vehicles driven. Most coroner reports and case files from 2004 to 2007 had been completed, providing us with 158 cases that satisfied the inclusion criteria.

This methodology satisfied all the criteria found in the Canadian Institutes of Health Research Tri-Council Policy Statement on the Ethical Conduct for Research Involving Humans.[8]

Results

Overall, there were 158 children, ages 11-15, who died in Ontario due to accidental causes between 2004 and 2007. Out of these 158 children, 66 were 11-13 years of age, and 92 were 14-15 years of age. In the 11-13 age category, the number one cause of accidental death was motor vehicle

collisions, which represented 26% of deaths (Figure 1). The second highest cause of accidental deaths was drowning, which was followed by fire-related deaths (Figure 1). In the 14-15 age category, the number one cause of accidental death was also due to motor vehicle collisions, which represented 29% of deaths (Figure 2). The second highest cause of death was also due to drowning, however, the third highest cause of accidental death was due to off-road motorized vehicle fatalities (ORMV), (Figure 2).

In this older age category, there was also a significant portion of accidental deaths due to drug overdoses, while there were no cases of fatal drug overdoses in the 11-13 age category (Figures 1, 2). In both age categories, the overwhelming majority of accidental deaths occurred in boys, who represented 76% and 66% of accidental deaths in the 11-13 and 14-15 age categories, respectively.

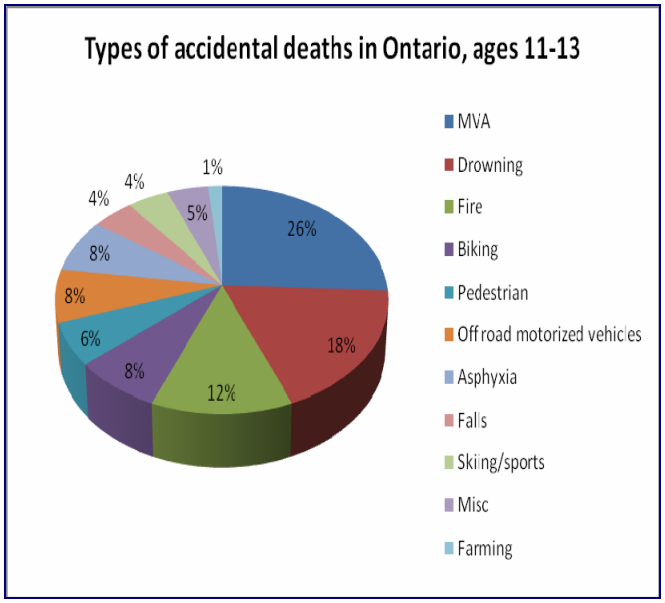

Figure 1. Types of accidental deaths in Ontario, 2004-2007, ages 11-13 (n = 66).

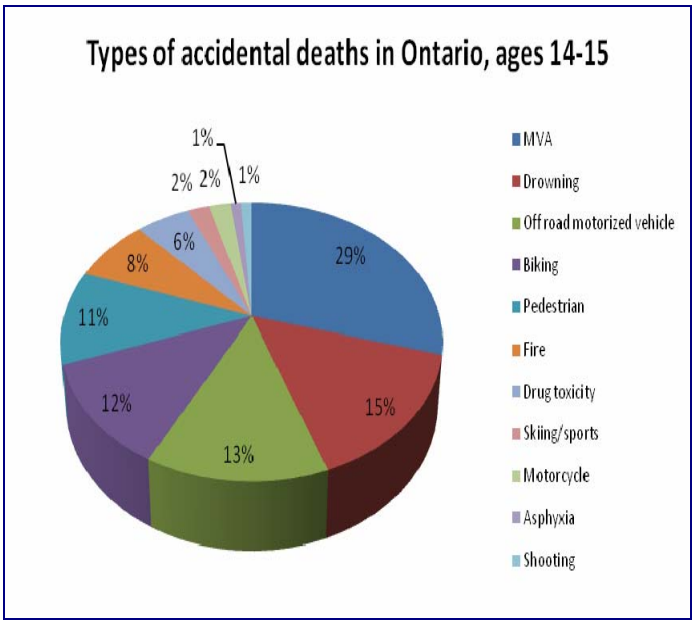

Figure 2. Types of accidental deaths in Ontario,2004-2007, ages 14-15 (n = 92).

The majority of accidental deaths in both age groups were active in nature, meaning that the children were doing something illegal or dangerous which ultimately led to their death. 50% of accidental deaths in the 11-13 age category and 58% of accidental deaths in the 14-15 age category were active in nature. Finally, when the active and passive nature of accidental deaths was segregated according to gender, it was found that in the 11-13 age category, both males and females had similar proportions of active involvement in their death (Figure 3). Males were actively involved in their death in 52% of cases, and females were actively involved in their death in 44% of cases (Figure 3). However, in the 14-15 age category, males were actively involved in their death 69% of the time, whereas females were actively involved in their death only 35% of the time (Figure 4).

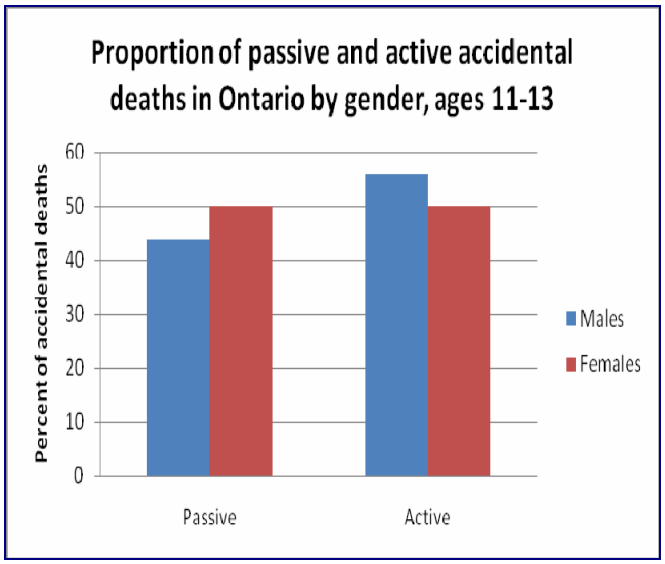

Figure 3. Proportion of passive and active accidental deaths in Ontario by gender, ages 11-13. n = 66

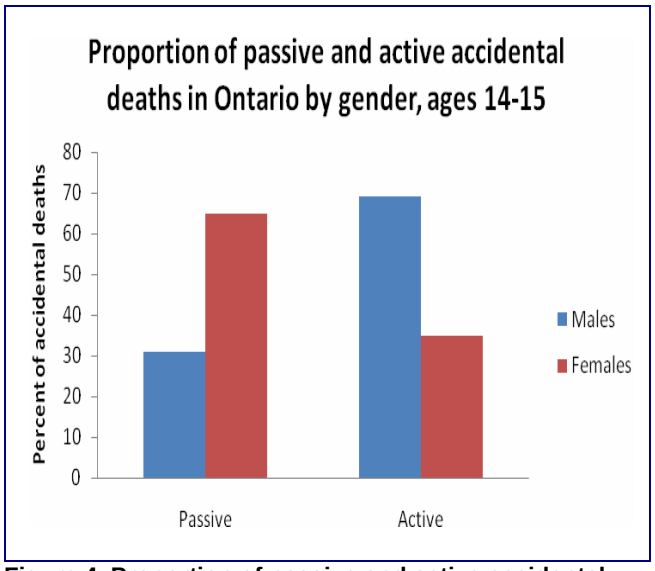

Figure 4. Proportion of passive and active accidental deaths in Ontario by gender, ages 14-15. n = 92.

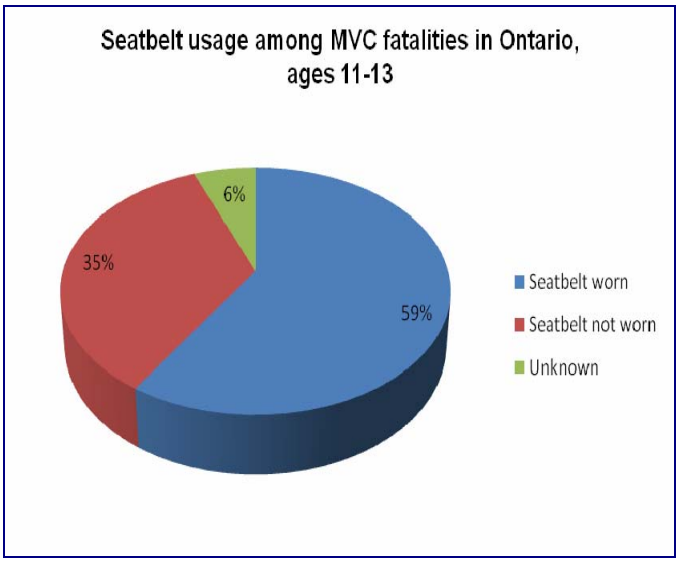

Figure 5. Seatbelt usage among MVC fatalities in Ontario, ages 11-13. n = 17

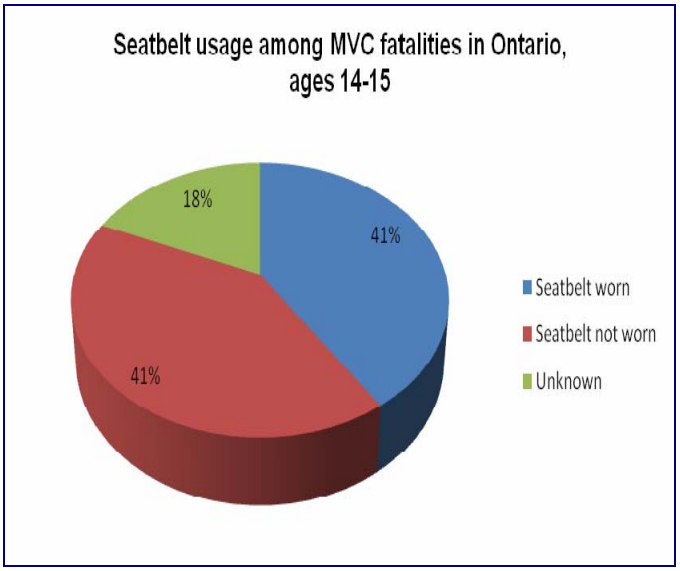

Figure 6. Seatbelt usage among MVC fatalities in Ontario, ages 14-15. n = 27

There were 17 motor vehicle collision (MVC) fatalities in the 11-13 age group, and 27 MVC fatalities in the 14-15 age group between 2004 and 2007 (Figures 5, 6). In the 11-13 age group, 35% of the children were not wearing seatbelts at the time of the accident, and in the 14-15 age group, 41% were not wearing seatbelts (Figures 5, 6). All of the children in the 11-13 age category were passengers in the motor vehicle that was involved in their accident. This is contrasted with the 14-15 age group, where 15% of the children were the driver of the vehicle in question.

Discussion

By analyzing the behavioural, social, and environmental risk factors associated with paediatric accidental deaths in children ages 11 to 15, there are various trends that have come to light. Overall, deaths due to MVCs, drowning, fire, ORMVs, and biking represented significant proportions of accidental deaths in both age groups, making these modalities potential foci for interventions. In addition, boys were involved in the majority of accidental deaths in both age groups, thus, future primary prevention strategies should aim to target

this demographic. Finally, the majority of accidental deaths in both age groups occurred when the child was actively involved in his or her death. This has many implications for developing future primary preventative strategies, in that child behaviour needs to be a prime target for these interventions.

With respect to paediatric accidental deaths caused by motor vehicle collisions, it is evident that a significant portion of both age groups were not wearing a seatbelt during the incident. Provincial legislation states that all drivers and passengers must wear a seatbelt while traveling in a vehicle.[16] Specifically, if a passenger is under the age of 16, it is the driver's legal responsibility to ensure that the passenger is belted. [16] Evidently, this legislation is not sufficient to enforce the use of seatbelts in minors. Since children in the 11-15 age category are still under 16, it is therefore the parent's responsibility to ensure that their child is belted in their vehicle.

Therefore, it is recommended that there should be an increase in parental education across the province with respect to seatbelt safety. In addition, stricter penalties for disobeying provincial seatbelt regulations could be considered. Currently, the maximum fine for failing to wear a seatbelt in a motor vehicle is $1000 and two demerit points, which does not appear to be sufficient to deter individuals from breaking this law.[9]

It is also recommended that there should be more education regarding seatbelt safety, as well as general motor vehicle safety, in elementary schools and high schools across the province in order to empower these children to make their own smart decisions while traveling in a vehicle.

When analyzing the accidental drowning fatalities that occurred in these children, it was evident that the majority of drowning occurred in lakes, ponds, or rivers. In addition, between 10 and 20% of children in both age groups were consuming alcohol during or prior to the incident. After discovering this, it is recommended that there needs to be more education in elementary schools and high schools regarding outdoor water safety. In addition, there were numerous children who did not possess adequate swimming skills who succumbed to drowning in these outdoor waters (although there were too many unknowns in the coroner reports to thoroughly analyze this risk factor). In addition, the majority of children involved in these drowning fatalities were not wearing life jackets, regardless of their swimming status.

Currently, federal legislation mandates the possession, but not the wearing of life jackets while on a boat.[10] There are many children who are not physically adept at swimming in open waters, which are generally more unforgiving than a residential or public pool, so we recommend that provincial legislation should be proclaimed to include the mandatory use of life jackets for swimmers who do not possess adequate swimming training.

After analyzing the risk factors associated with paediatric fire deaths, it was evident that the majority of fire deaths in both age categories occurred in the home. In particular, in the 11-13 age group, almost 70% occurred in the context of a non-functioning or non-installed smoke alarm. This is in spite of the current Ontario fire code, which states that smoke alarms must be installed on every storey of a home and outside all sleeping areas.[11] Clearly, legislation alone is not sufficient to enforce the proper installation and maintenance of smoke alarms. Since it is parents' responsibility to install smoke alarms in their homes, we recommend that parental educational programs regarding fire safety

should be employed across Ontario. In addition, in order to empower children, and teach them to recognize unsafe living environments, it is recommended that there should be fire safety training in elementary and high schools across Ontario.

With respect to deaths due to ORMV accidents, it was evident that All Terain Vehicles (ATV) were the leading cause of ORMV fatalities in the 11-13 age group, whereas snowmobiles were the leading cause of ORMV fatalities in the 14-15 age group. Interestingly, the majority of children in both age categories were wearing helmets during their accident, which is in accordance with Ontario legislation, which states that all operators of ORMV's must wear a motorcycle helmet at all times.[19] Although this is true, helmets are not enough to prevent serious injury and death when an ORMV collides with a tree or another motor vehicle, or rolls onto its occupant. Currently, Ontario legislation allows children over 12 with a valid motorized snow vehicle operator's license to operate a snowmobile.[12] In addition, provincial laws allow children with a valid driver's license to operate ATV's.[13] However, given our findings in this project, the use of ORMV's should be restricted to persons at least 16 years of age and older. Children may be too inexperienced to operate such potentially dangerous vehicles.

Finally, when analyzing the paediatric deaths due to biking accidents, it was evident that approximately 2/3 of children in both age categories did not wear a helmet during the incident. Current Ontario legislation mandates that all children under the age of 18 must wear a helmet while riding a non-motorized bicycle on any public road.[14] Evidently, this current law is not sufficient to compel youth to wear helmets while riding their bikes. Hence, we recommend that there should be bike safety training in all elementary and high schools across Ontario.

These recommendations can all have a positive impact on public health policy in Ontario. By increasing the amount of youth and parental safety education programs, and by enforcing stricter provincial policies, many paediatric accidental deaths could be prevented in the future. By targeting the specific behavioural, social, and environmental risk factors that were found to correlate with paediatric accidental deaths, it is our hope that these unnecessary fatalities can be a thing of the past.

Case Examples:

MVC – Passenger Fatality

This 15 year old female was a passenger in the middle position of the back seat of a vehicle, driven by a peer, at 2:00 a.m. after a graduation party. It appeared the vehicle left the south side of the roadway after coming over the crest of a hill at a high rate of speed. The vehicle struck a hydro pole and had multiple roll-overs before coming to rest. The deceased was not wearing a seat belt and was ejected from the vehicle.

Cause of Death: Multiple Injuries

Manner of Death: Accident

Drug Toxicity Fatality

A 15 year old female, who was reportedly familiar with ecstasy and marijuana use, was in the company of a 16-year-old girlfriend. Each took a tablet, reported to be ecstasy, about 2:00 p.m. and they walked around for some time. Over the afternoon, because the drug had not initially been seen to be effective, the deceased took a total of 3 1/2 tablets. She became stuporous, unsteady, and developed seizure activity. She was transferred to the local children's hospital where she was cared for in the Intensive Care Unit for several days before she died. The autopsy report documented multi-organ failure.

Cause of Death: Acute Drug Toxicity

Manner of Death: Accident

ORMV Fatality

A 14 year old male had gone for a trail ride on his dirt bike behind a farm and into a bush. This dirt bike was a non-plated off road vehicle that the police advised could not be driven legally on a road. The front handlebar of the boy's vehicle hit a tree and then spun around; his right side hit another tree. 911 was called; the location was quite remote, the air ambulance was also dispatched and he was VSA on their arrival. Of note, the deceased had been wearing a helmet and a chest protector. Autopsy showed that the youth had suffered multiple ruptures of the internal organs and a left subdural haematoma.

Cause of death: Multiple internal injuries

Manner of Death: Accident

Biking Fatality

A 12 year old boy was riding north on his bicycle with head phones on and no helmet. As he waved to friends in a passing car to his right, he swerved left into the path of an oncoming tractor trailer, suffering massive head injury. His blood was tested for alcohol and marijuana and was positive for THC (Cannabis product).

Cause of Death: Cranio- Cerebral Trauma

Manner of Death: Accident

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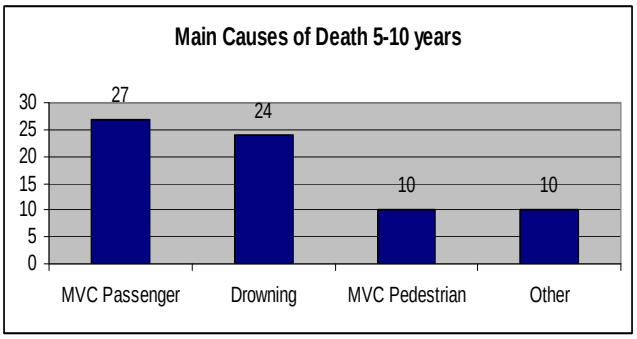
Comparison of 3 Main Causes of Death For Children aged 5-15 in Ontario 2004-2007

In the 2010 PDRC annual report, a research study on accidental deaths of children aged 5-10 years was presented. The following charts demonstrate a comparison of the 3 main causes of accidental deaths for the age categories studied thus far. A study examining the accidental deaths of children aged 0-4 years is currently underway (see next page for case examples from that study). Preliminary findings suggest that the most common causes of accidental deaths in this age group are drowning, motor vehicle collisions and asphyxia.

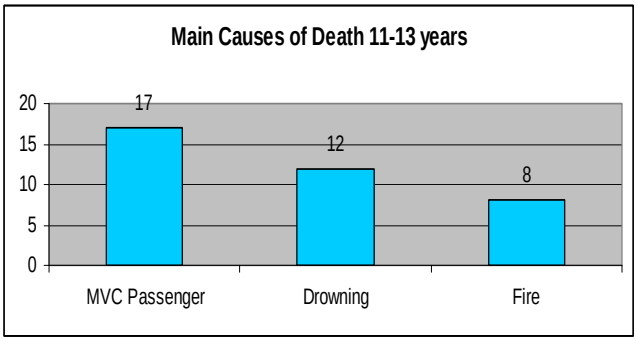
5-10

1	MVC – passenger
2	Drowning
3	MVC – pedestrian/other



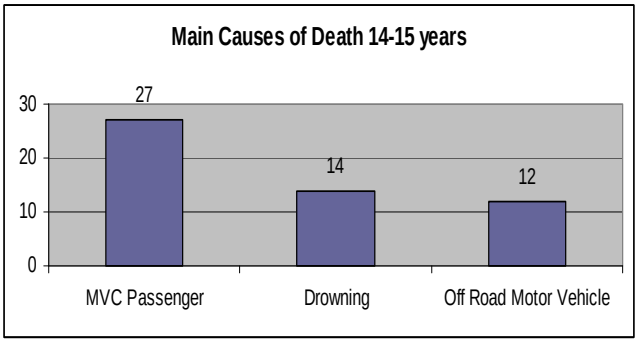
11-13

1	MVC - passenger
2	Drowning
3	Fire



14-15

1	MVC - passenger
2	Drowning
3	Off Road Motor Vehicles



Accidental deaths of children in Ontario 0 to 4 years old during the years 2004 to 2007

As noted previously, accidental death is one of the most common manners of death in children investigated by the Office of the Chief Coroner, at approximately 200 cases a year in the province of Ontario. Accidental deaths are often preventable, especially in cases of infants and toddlers where constant adult supervision is required to provide responsible care. The vulnerability exhibited by children of this particular age group is the main motivation behind a current OCC study. Findings from this study, while not ready to be published, provided the following typical case examples.

Accidental Death Case Examples (0-4 years of age)

Drowning

A 3 year-old was found face down floating in a back yard swimming pool. Prior to this, the father had removed the child's safety water wings after securing the promise that she would not return to the water. The father then left to take care of a one year-old sibling for approximately five minutes, leaving the three year-old temporarily unattended.

MVC

A driver lost control of the vehicle in which her two children, ages 3 and 8, were passengers; both children died of massive head trauma. No child seats were found on the scene. Reportedly the children often used one seat belt for the two of them; however there was no evidence of seat belt use on this occasion.

Choking

A 2 year-old was found unresponsive in his playroom. EMS arrived and attempted CPR unsuccessfully. It was later determined that he had choked on a small rubber ball which became lodged in his throat.

Positional Asphyxia

A 5 month-old was found unresponsive wedged in a gap between an adult bed and the wall. The baby could have rolled headfirst into the gap, but had not yet developed the ability or strength to push herself out.

Paediatric Death Review Committee and the Ontario Children's Aid Societies

Overview of the Death Investigation of a Child Receiving Services from a Children's Aid Society in Ontario

This documents the comprehensiveness of an investigation of a child who dies while receiving services from a Children's Aid Society (CAS) in Ontario as per the Joint Directive (2006). It includes:

1. A Serious Occurrence Report, provided by the CAS to the Office of the Chief Coroner (OCC), immediately.

2. A Child Fatality Case Summary, provided by the CAS to the Office of the Chief Coroner within 14 days.

3. Upon review of the circumstances of the death, the OCC will notify the CAS if a full Internal Review is necessary. This notification will occur within 21 days of the death. For example, a child who dies in hospital of complications of prematurity may not require an Internal Review. However, if a child died under suddenly and unexpectedly at one year of age while in the family home where there is a history of substance abuse with the parents, an Internal Review would likely be considered mandatory.

4. The Internal Review must be completed by the CAS within 90 days of the death. All of these reports are shared with the PDRC.

5. A coroner's investigation. The police assist the coroner and provide such assistance as is necessary for the purposes of carrying out the coroner's duties.

6. If the death is a homicide or criminally suspicious, a parallel police investigation will be conducted for the criminal justice system.

7. An autopsy by a forensic and/or paediatric pathologist. In criminally suspicious cases, the forensic pathologist may attend the scene.

8. A toxicologist's report.

9. A radiologist's report.

10. A case conference is often convened. This meeting is generally chaired by the Regional Supervising Coroner, and involves police, the investigating coroner, the pathologist, the toxicologist, a neuropathologist when required, and a child welfare expert. This meeting will determine what, if any investigative issues may need to be addressed. It may also facilitate development of opinions as to cause and manner of death.

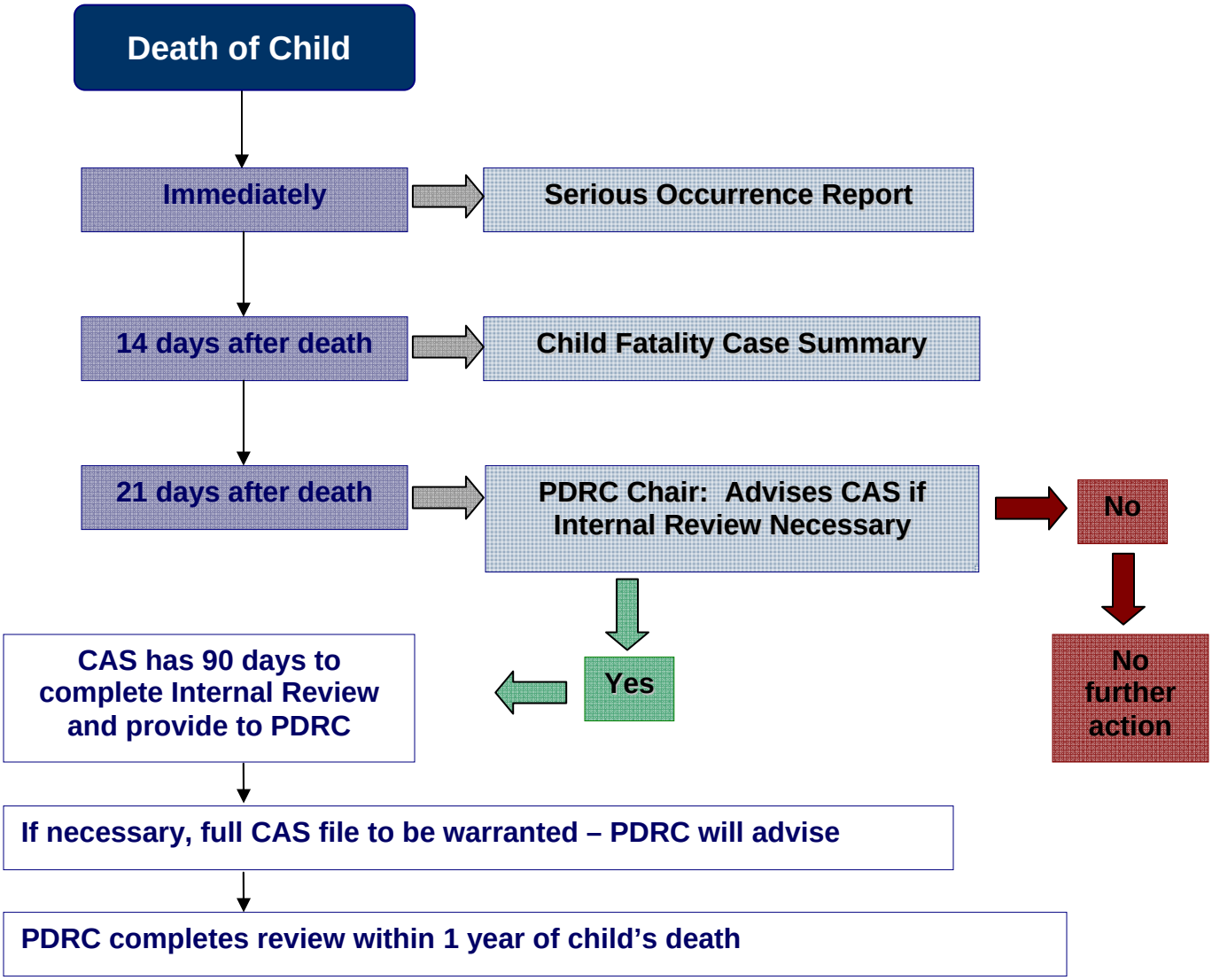
11. The investigating coroner will conclude the investigation, and send his Coroner's Investigation Statement to the Regional Supervising Coroner (RSC). The RSC will review the case for any errors or omissions, and may choose to send the case for further review to an expert committee. If the child was under the age 5 years, referral to the Deaths Under Five Committee is *mandatory*. The age and circumstances surrounding the death will determine a referral to the Paediatric Death Review Committee (PDRC).

12. A review of the death by the Deaths Under Five Committee will be conducted. This multidisciplinary Committee consisting of coroners, pathologists, a child maltreatment expert, homicide detectives, a crown attorney, and child welfare experts has a quality assurance mandate. The officers assigned to the Committee will inquire of the original investigating police service about the nature of the investigation utilizing a summary framework. When providing their findings to the Committee they will provide death scene and selected autopsy photographs. These officers are senior homicide detectives. A pathologist will review the original pathologist's autopsy report, and present an oral summary of the findings. If there are any concerns about the pathologist's original autopsy report identified, the Chief Forensic Pathologist is asked to review the case. This Committee may make findings of cause and manner of death. This report will then be forwarded to the RSC, who will review the report and make any necessary updates to the Coroner's Investigation System. The Committee will also make recommendations regarding quality-related issues in the death investigation. In addition, the Committee may refer the death to the PDRC for further review.

13. A review by the Paediatric Death Review Committee will be completed. The members include child welfare experts, coroners, homicide detectives, paediatricians, and pathologists, who create the reports of the Committee. The report may focus on the child welfare aspects of the death, the medical/paediatric aspects of the death, or both. Recommendations will be developed and sent to the RSC, the CAS, and the Ministry of Children and Youth Services (MCYS). The Committee is independent of both the Ministry and the CAS.

14. The CAS will implement the recommendations where practical and usually provide feedback to the PDRC about the Committee's findings. The Ministry of Children and Youth Services will independently report expectations arising from the death to the CAS through its regional offices and will respond to any recommendations directed to them.

The chart below shows the flow and timelines as outlined in the Joint Directive for Child Death Reporting and Review:



Paediatric Death Review Committee and the Ontario Children's Aid Societies

In Ontario, child welfare services are provided by 53 Children's Aid Societies (CAS's), 6 of which are designated Aboriginal agencies. Each CAS is an independent, non-government agency governed by a board of directors and funded by the Ministry of Children and Youth Services. In 2006, the Office of the Chief Coroner and the Ministry of Children and Youth Services entered into a Joint Directive and Memorandum of Understanding which directs and guides Children's Aid Societies regarding the process of reporting and reviewing all child deaths where the family has had involvement within the previous 12 months.

BACKGROUND: HISTORY OF CHILD DEATH REVIEWS

Child fatality review teams were first established during the late 1970's in the United States, as a result of concern on the part of parents and professionals over the increasing number of children who were dying from apparently preventable abuse, neglect or injury. The first multidisciplinary child death review team was established in California in 1978. Since then, child death review teams have been formed in 49 states, in several Canadian provinces and in many other countries around the world.

Multi-disciplinary child death reviews have been upheld by numerous jurisdictions in both Canada and the United States as the most advantageous form of child death review. There is significant agreement among jurisdictions on the core disciplines expected to be represented on a review team. These include representatives from the Coroner's Office, law enforcement, prosecutorial agencies, medicine, child protection services, and public and mental health agencies. In Ontario, the Paediatric Death Review Committee (PDRC) serves the purpose of an external, multidisciplinary review mechanism for child deaths.

The basic objective of child death review teams is to review child fatalities in order to identify trends and risk factors to prevent similar deaths in the future. Recommendations are aimed at improvements and enhancements to service, practice and policies, which may improve the outcome for children at risk.

Ontario was one of, if not, the first province to have a paediatric death review committee. In the early 1990's Ontario's Office of the Chief Coroner (OCC) implemented the PDRC to review complex medical deaths of children in order to assist investigating coroners in completing child death investigations. In the mid-nineties, the OCC and the Ontario Association of Children's Aid Societies, with support from the children's ministry, undertook a study of the deaths of children receiving child welfare services, in part, due to increasing concern about a number of tragic and high-profile paediatric deaths in families who had involvement with child welfare agencies.

This study, known as the Child Mortality Task Force, reviewed 100 child deaths in the 2-year period between January 1994 and December 1995. The outcome of the study, and resulting report, coincided with a series of inquests into the deaths of children who had been involved with Children's Aid Societies.

While these inquiries had a large impact on child welfare reform in the province of Ontario in the late 1990's, they also led to an expanded mandate for the Paediatric Death Review Committee. In 1997, the PDRC began reviewing all cases of children who died while receiving child welfare services, or who had done so within the

previous 12 months. The committee membership expanded to include child welfare experts, police and crown attorneys in the review of these deaths.

The Joint Directive: Office of the Chief Coroner and the Ministry of Children and Youth Services

In 1999 a joint directive was developed between the Office of the Chief Coroner and the provincial children's ministry (Ministry of Community and Social Services and more recently, the Ministry of Children and Youth Services) to guide the process of child death reviews; this directive was revised in March 2006.

Working in collaboration for the past five years under a Memorandum of Understanding, the PDRC, with funding support from the Child Welfare Secretariat (CWS) of the Ministry of Children and Youth Services (MCYS), has assumed the lead in the implementation of the Joint Directive. The tracking and analysis of the relevant data, themes, trends and recommendations is expected to be centralized, streamlined and disseminated in an annual report. This is the fifth annual report arising out of this collaboration.

The MCYS, with assistance from its regional offices and the Client Services Branch (formerly the Quality Assurance and Accountability Branch) has responsibility for a public report regarding the recommendations made by the PDRC in the child deaths reviewed. This response is meant to provide an update on the implementation of recommendations made to Children's Aid Societies and the MCYS during the reporting year (responses to 2010 reviews are provided on pages 87-90 in this report).

Internal Child Death Reviews by Children's Aid Societies

Internal Child death reviews must be completed by Children's Aid Societies under the joint direction of the Ministry of Children and Youth Services and the Office of the Chief Coroner, whenever:

1) The death of a child occurs;
2) That child is the recipient of current or recent service from a CAS; and
3) When the death is a result of abuse or neglect or occurs under questionable circumstances.

An internal child death review is conducted by the involved CAS in order to investigate thoroughly the death and the context within which the death occurred. The review seeks a contextual understanding of the details of intervention, decision-making and potential oversight which may have contributed to the death of a child and makes recommendations for the improvement of internal or external systems and structures to reduce the risk of future deaths of children served by the Society.

The internal child death review seeks to understand the circumstances relating to the child's death and to convey this understanding to the relevant staff, managers and collaterals in a manner that provides clarification, support and the capacity to continue to provide services.

The PDRC, upon reviewing the CAS Child Fatality Case Summary Report and the Coroner's Investigation Statement, considers specified criteria (not an exhaustive list) when requesting a CAS to conduct and forward an internal review to the PDRC (see table on following page).

CAS involved within 12 months
Sudden, unexpected deaths, including most accidents, suicides, homicides and undetermined
Some natural deaths (i.e. SIDS)
Potentially preventable with intervention possible
CAS file open for related reasons

An internal review of a child death is undertaken by the agency for the purposes of learning. Internal reviews, when shared among Societies, have the potential to promote an enhanced quality of practice within the broad field of child welfare. One of the goals of the Annual Report of the PDRC is to share the lessons learned by individual case reviews (both PDRC and Society) with other agencies across the province in order to improve the quality of child protection services provincially.

Analysis of Society Internal Child Death Reviews 2010

In order to evaluate the usefulness of the review process and the thoroughness of the Society Internal Child Death Reviews submitted by Children's Aid Societies, in 2010, members of the PDRC were asked to complete an analysis form (results are attached on the form template) on Society Internal Child Death Reviews they read. In 4/49 cases reviewed, the Society was not asked to complete an internal review, mostly due to the date of death being prior to the Joint Directive. 27 Society Internal Reviews were analyzed in 2010; 13 (48%) were in complete compliance with the expectations. In 3 cases, the CAS files were warranted or more information was requested due to incomplete information to complete the PDRC review.

The purpose of completing Society Internal Child Death Reviews, as per the Joint Directive and Guidelines, is to review and analyze the service agency's:

- Compliance with standards
- Adherence to internal policy/practice
- Decision-making

Internal reviews are meant to include:

- Source materials, i.e. file review/interviews/policies
- A thorough summary of the CAS history and relevant events
- Circumstances of the death
- An expert External Reviewer on the team – (see below)
- Findings
- Recommendations to prevent future deaths (flowing from the evidence of the case)
- A plan to implement recommendations
- Lessons Learned – identifying strengths and weaknesses in practice, policy, systems, decision-making, case management, supervision, organizational structure etc. with a goal to prevent future deaths **without blaming individuals**

In choosing an External Reviewer, the Society should:

➢ Avoid a reviewer with real or perceived conflict of interest or with an imbalance of authority, control, power;
➢ Avoid a reviewer with previous carriage or supervision of the case;
➢ Ensure the reviewer has a broad knowledge of child welfare from front line, management and systemic perspectives;
➢ Ensure the reviewer has knowledge of child fatality investigations/reviews;
➢ Ensure the reviewer is objective and able to conduct critical analysis and make meaningful and independent recommendations.

Analysis Form for 2010 Society Internal Reviews

Did the review include the following?

Analysis of:	Yes	No	Comments
Compliance with standards	25	2	Most internal reviews commented on whether services were in compliance with provincial standards.
Adherence to internal policy/practice	25	2	Most reviews discussed compliance with internal agency policies and practices.
Decision-making	21	6	All but 6 reviews commented on the decision making process in file management.
File review	26	1	Only one internal review was unclear as to how much of the file was reviewed.
Interviews	26	1	All but one internal review included interviews with agency staff and management.
Thorough summary of CAS history and relevant events	20	7	All but 7 reviews provided a thorough summary of CAS history and events.
External Reviewer	27	0	All reviews utilized an external reviewer either as a consultant or as a review panel member.
Findings	27	0	All of these internal reviews included a critical analysis which led to relevant findings and conclusions.
Recommendations to enhance or improve practice or policy	25	2	Almost all of the reviews offered recommendations derived from the facts and analysis of the case.
Did the PDRC find the Internal Review exhaustive and not make further findings/recommendations?	**0**	**27**	**PDRC had additional findings and made recommendations in all cases.**
Did this Internal Review provide sufficient information to complete a PDRC review and report?	24	3	In 3 cases, the PDRC had to request more information or more analysis in order to complete its review.

2010 Deaths Occurring and Reported by a Children's Aid Society

As per the Joint Directive for the reporting and reviewing of all child deaths known to a Children's Aid Society within 12 months of the death, **109** child deaths were reported to the PDRC in 2010. 2 of these deaths were from previous years (2007 and 2008) but not reported until 2010.

The CAS that provided service to the family submitted a serious occurrence report and within 14 days of the death submitted a Child Fatality Case Summary Report to the PDRC. The Executive Committee of the PDRC screens these reports and, within 7 days, a decision is made whether the CAS will be required to complete an Internal Review for the purposes of a future PDRC review. The decision to request an Internal Review is based on the criteria set out in the Joint Directive (see pages 53-54).

Most deaths are not reviewed in the year of death due to these timelines, the volume of cases, and the length of time required to complete a coroner's investigation, including various tests and reports. Additionally, cases before the criminal courts are generally not reviewed until any outstanding charges are resolved.

A preliminary analysis of the deaths reported in 2010 by a CAS is provided on the following page. As many of these deaths are still under investigation and have not yet been reviewed by the PDRC, the available information is limited. Further analysis of these deaths will be provided in the year in which they are reviewed.

The Executive Committee of the PDRC reviewed all **109** deaths and requested that Society Internal Reviews be submitted in **37** of them. A decision on **15** other cases is pending the anticipated review by the Deaths Under 5 Committee where cause and manner of death will be determined. It was decided that **57** of the **109** cases would not necessitate further review given the nature of the child's death and/or the Society's involvement. The majority of these cases were medically fragile infants or children who died as a result of natural causes, most of whom were in hospital, born prematurely or with complex medical and/or genetic conditions.

Of the deaths reported by a CAS in 2010, 40 of the decedents were female; 69 were male.

Categories of Review:

EXECUTIVE REVIEW ONLY: Are cases which, when reviewed by the Executive Committee of the PDRC it is determined that no further review by the CAS or PDRC is required, as the death could not reasonably have been prevented or predicted by a CAS or medical intervention. For example, cases where the child's family had no CAS involvement until the injury leading to the death, or the child was known to CAS, but the death was natural and not unexpected, or the child died as the result of an incident unrelated to the family's involvement with CAS.

PENDING DU5C: On occasion, the decision to request an Internal Child Death Review is postponed pending the results of the coroner's investigation and/or review by the Deaths Under 5 Committee when more information will likely be known.

INTERNAL & PDRC REVIEW: If the PDRC requests an Internal Child Death Review, agencies are given 90 days in which to submit their report, and the PDRC has up to 12 months to review the case and issue a report that may contain further recommendations.

Children Known to CAS Who Died In 2010

TOTAL	*EXECUTIVE REVIEW ONLY 2010	*PENDING DU5C 2010/2011	*FUTURE INTERNAL & PDRC REVIEW
109	57	15	37
%	52%	14%	34%

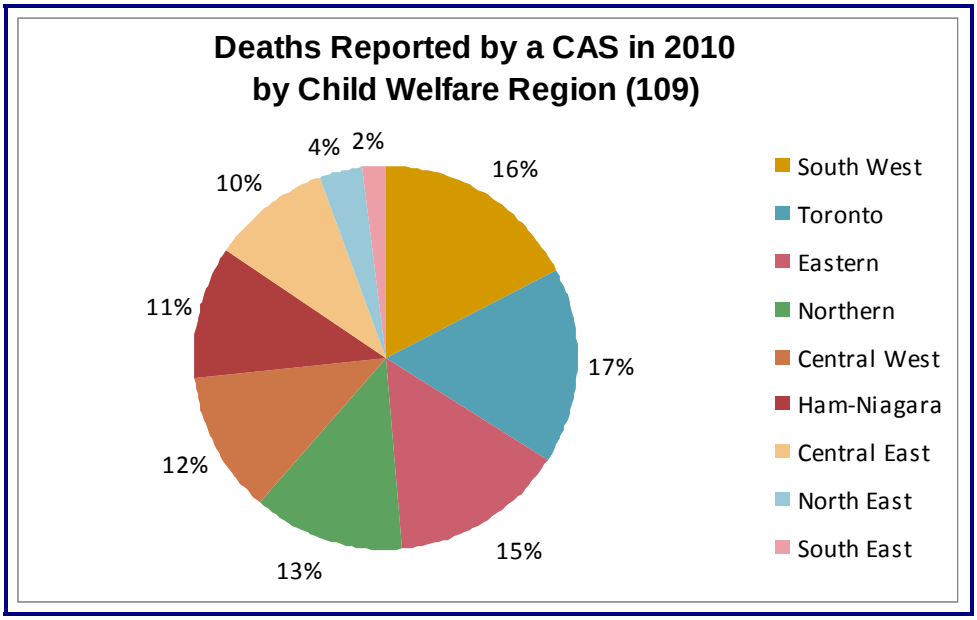
* These categories are explained on the previous page in more detail

CAS Status of Children Who Died In 2010

		In CAS Care	In Home Service
Total	109	22*	87
%	100%	20%	80%

* *At least 50% of the children in the care of a CAS died of natural causes and were considered medically fragile. 8 deaths of children in the care of a CAS resulted in the Society being requested to complete an Internal Review and will undergo a PDRC review.*

The Ministry of Children and Youth Services (MCYS) is divided into 9 regional areas that oversee 53 Children's Aid Societies. The chart below provides a breakdown, by region, of the percentage of deaths reported to the PDRC in 2010.



Paediatric Death Review Committee Children's Aid Society Case Reviews Overview: 2008 - 2010

As presented in the following table, in 2008 reports were issued on 41 CAS cases; 56 of the CAS cases reported that year were reviewed and resolved by the Executive Committee of the PDRC, requiring no further review.

In 2009, reports were issued on 33 CAS cases; 74 of the CAS cases reported were reviewed and resolved by the Executive Committee of the PDRC, requiring no further review.

In **2010**, there were **49 CAS** child death reviews, resulting in 43 reports being issued; these cases are analyzed in detail throughout this report. As stated earlier, **57** of the deaths reported this past year were reviewed and resolved by the Executive Committee of the PDRC, requiring no further review.

There has been a steady increase in the number of CAS cases the PDRC has reviewed since the revised Joint Directive between the Office of the Chief Coroner and the Ministry of Children and Youth Services, effective March 31, 2006 allowing for a timelier and more streamlined approach to reviewing CAS files.

YEAR	2008		2009		2010	
Manner of Death	CAS	Executive Review	CAS	Executive Review	CAS	Executive Review
Natural	2	27	1	34	5	31
Accident	1	11	9	12	18	9
Homicide	4	3	3	6	5	4
Suicide	14	1	6	2	4	4
Undetermined	20	3	14	7	17	5
Still Under Investigation	-	11	-	13	-	4
Total Case Reviews:	**41**	**56**	**33**	**74**	**49**	**57**
Total # of Cases per Year:	**97**		**107**		**106**	

2010 PDRC Reviews of Cases with Children's Aid Involvement

49 deaths of children receiving service from a CAS were reviewed by the PDRC this year, resulting in 43 reports being issued (5 cases involved sibling groups where more than one child died).

27 of the children were female and 22 were male.

The age of the children ranged from 1 day to 19 years.

The majority (74%) of deaths involved children under 5 years of age (n = 36) and 21 of those 36 children were under 1 year of age (43% of the overall total).

Almost 60% of the children reviewed were either under one or over 15 years old, a consistent trend in Ontario.

<1 yr	1-4 yrs	5-14 yrs	>15 yrs	Totals
21	15	5	8	49
43%	31%	10%	16%	100%

Cases were reviewed from deaths occurring in the following years:

2009 – 14	2008 – 24	2007 – 6	2006 – 2	2005 – 2	1998 – 1

CAS Involvement (n = 49):

- 34 cases were open protection files to a CAS at the time of the death
    - Types of open files: 5 Intake; 26 Ongoing Services; 3 Other services;
    - 4 families were under a court order of supervision;
    - 1 child was placed in a Kinship Service Home
- 6 of the 49 children were in the care of a CAS
    - 2 Crown Wards
    - 1 Extended Care and Maintenance (ECM)
    - 1 Kinship Care
    - 2 Other
- 43 children were not in care of a CAS, and were in the care of a parent/family member
- 15 cases had been closed within the 12 months preceding the death

Paediatric Death Review Committee and the Ontario Children's Aid Societies

PDRC REVIEW OF CASES WITH CHILDREN'S AID SOCIETY INVOLVEMENT

While the PDRC does not assign blame, it does review cases from a view toward prevention. One of the roles of the PDRC is to make recommendations to avoid future deaths in similar circumstances. For example, these questions are considered: Could this child's death have been prevented? Could similar child deaths in the future be prevented? If so, how? Given the circumstances of the 2010 case reviews, future deaths might be avoided by the provision of:

- **Safer sleep environments**
- **More vigilant supervision of young children around water and fire starting materials**
- **Greater compliance with installation and maintenance of working smoke alarms**
- **Enhanced information sharing amongst service providers, including case conferences**
- **Community collaboration through joint protocols related to high risk populations (i.e. infants, substance abusing parents, neglect)**
- **Broader understanding of the community on the impact of chronic neglect on children (including within the family court system)**

All child deaths are tragic and are usually the result of a number of factors. Occasionally, the actions or inactions by those in a caregiving role (parents and/or systems) have a part in the circumstances leading up to a fatality. The PDRC reviews these circumstances and makes recommendations for consideration by the health and child welfare systems and others with a goal to reduce the number of child fatalities.

Recognizing the Committee has the benefit of hindsight (which includes access to information that may not have been available prior to the death) in conducting its assessment of agency practices, it is helpful to bear in mind the following questions posed by Dr. Peter Markesteyn (from the Turner Review and Investigation, Newfoundland, September 2006):

- What did they know at the time of the events?
- What could they have known, but did not when those events occurred?
- Based on what they knew or could have known, were the decisions appropriate?

The Committee acknowledges the difficult work of Children's Aid Societies in protecting children from harm.

The number of child deaths during this time frame clearly represents a very small percentage of the volume of children and families involved in the child welfare system. It must always be remembered that families obtaining service from a Children's Aid Society may suffer from a variety of social ills such as addiction, poverty, unemployment, social isolation, substance abuse and mental illness.

These children are "high risk" and CAS's must mitigate their responsibilities to protect a child under the Child and Family Services Act with the desire and rights of a family to raise a child, even when the childrearing situation is less than optimal. Clearly, this is a very difficult task. The recognition of these challenges is not intended to minimize or rationalize the death of any

child; we are all genuinely and seriously concerned whenever a child dies.

There are occasions during retrospective reviews, where concerns are identified with systems, decision making, management of cases or the provision of health and/or child protection services to families and children.

At times, children's deaths are found to be preventable, meaning avoidable in the future. It is particularly concerning when a child dies and contributing factors may include the service the child may or may not have received from the child protection system. One case is highlighted where the Committee believed that more collaboration and different decisions might have resulted in different outcomes for the child. The involved agency completed an internal child death review and recognized that changes in service, policy and training were warranted. Occasionally, more intrusive action by a Society is called for in certain circumstances; the child in the following case may have benefited from such intervention.

Review of the death of MQ

Two month old MQ resided with his parents and seven siblings in a two bedroom home in a First Nations community. On the night of his death, at approximately 2:00 a.m., the mother reportedly gave her son 3 ½ oz. of formula. He was then placed back in his crib in his usual sleeping position on his stomach. The parents indicated that they would usually feed MQ at about 2:00 a.m. and he would then sleep until 9 or 10 in the morning. At approximately 11:00 a.m. the parents got out of bed and at 11:45 a.m. they became worried that the baby had not awakened and went to check on him. MQ was lying on his stomach, unresponsive and cold to the touch. 911 was called and the ambulance arrived and confirmed that vital signs were absent. The home was noted to be untidy and cluttered.

When the parents were interviewed by CAS they reported that after they fed MQ they kept him in bed with them until about 5:00 a.m. when he was put in his crib.

- **Cause of Death:** No definitive anatomic or toxicologic cause of death. Sudden Unexpected Death in Infancy (SUDI) in an unsafe sleeping environment (prone sleeping position in cluttered crib).

- **Manner of Death:** Undetermined

The family had CAS involvement off and on for the three years prior to MQ's death. Throughout the involvement by CAS the family home was chronically in disarray with garbage, clothing, dirty dishes, and lack of food in the home. Despite community intervention to attend the home and assist, this did not result in the home being maintained. There were also chronic concerns of the children being unsupervised and a history of sexual abuse by a family member. No information was in the case file regarding the issue of sleeping arrangements for MQ.

An extensive internal review was completed by the CAS with the assistance of an independent external reviewer. The Society endorsed the review and recommendations and developed a detailed implementation plan.

PDRC Analysis of Society Actions and Decisions:

- The internal review provided an informative overview of the communities that the CAS provided service to and information on the relationship between the agency, First Nation Band and Native child welfare agency.
- The internal review is an exceptionally thorough document that contains a comprehensive

summary of the child welfare history with the family; identifies compliance with standards; policies/procedures and critically analyzes the quality of service.

- The reviewers clearly articulated the significant concerns regarding the parents' capacity to parent and the weaknesses in the agency response given the concerns and high risk level.
- New information received about the family was not fully assessed and risk factors were minimized.
- It is evident that no progress had been made by the parents in addressing the concerns yet the supervision order that had been in effect was terminated four months prior to the birth of MQ. This occurred despite the mother expecting her eighth child.
- There is no information that the workers reviewed safe sleeping practices with the parents or viewed the sleeping arrangement for MQ.
- The agency response in allowing a particular family member to have unrestricted access to the home and the children, despite verification that he sexually abused a child and did not complete a sexual risk assessment, is concerning.
- The risk of sexual harm that this person posed to the other children does not seem to have been assessed or considered.
- The PDRC acknowledged the significant challenges the agency faced in trying to provide service in keeping with the standards and risk level when the worker needed to attend family appointments with a First Nations Band representative and worker.
- Upon learning of MQ's death there was no investigation initiated at the time and no immediate assessment of the safety of the other children. There was no in-person contact with the family until two weeks after the death.
- The information in the internal review indicated that this was a SIDS death and clarification should be made in the file indicating that this was classified as Sudden Unexpected Death in Infancy (SUDI) in an unsafe sleeping environment (prone sleeping position in a cluttered crib).
- The implementation plan and update on progress with the plan demonstrated the agency's commitment to addressing the concerns identified in the internal review and improving the quality of service.

PDRC Recommendations

The PDRC has received the Society's recommendations and adds the following:

1. **The Society should ensure its staff is trained on safe sleeping practices for infants. Procedures should be put in place to assess the sleeping arrangements of infants being served by the agency including visual inspection of the sleeping arrangements and methods of educating parents on safe sleeping arrangements for children.**

   There was no information in the file that the worker viewed the sleeping arrangements or discussed safe sleeping practices.

2. **Given the significant concerns regarding the parents, young age of the children, and little progress in addressing any of the**

concerns, consideration should be given for a Parenting Capacity Assessment.

In reviewing the internal review and file documentation there has been no measurable progress in the parents' ability to meet the needs of the children. There continue to be concerns regarding the risk to the surviving children.

3. **Communication about the Cause and Manner of Death should occur with the Office of the Chief Coroner or Regional Supervising Coroner.**

   Communication regarding the cause of death occurred with the local coroner and the internal reviewer identified SIDS rather than SUDI.

4. **The Society should meet and exercise its child protection mandate with respect to this family.**

   The PDRC had grave concerns about the parents continuing to parent the surviving children for the following reasons:

   - Reported and verified history of sexual abuse.
   - That a family member continued to have access to the children but who is on the Child Abuse Register.
   - Weekly visits did not occur; the Society did not meet its own level of supervision.
   - The parents refused to be involved in drug testing.
   - There were concerns of neglect of the physical needs of the children, the home was devoid of food and the children were seeking food from others outside of the house.
   - Two months prior the death, a Band representative voiced an opinion to the CAS that the children needed to be removed.
   - Despite this, several months later a Band Council Resolution by the First Nation restricted the Society's access to the family.

5. **The Regional Office of the Ministry of Children and Youth Services should review this death and work collaboratively with the agencies involved to achieve protocols for service provision between the CAS, First Nations agency and Band Council.**

   This recommendation is made, in part, to the Society and the MCYS to assist with discussions to develop a protocol for service provision. A Band representative voiced an opinion to the CAS that the children should be removed. However, five months later, a Band Council Resolution was passed restricting the Society's access to the family. Restrictions were placed on how the Society could interact with the family in the absence of a worker from the First Nations.

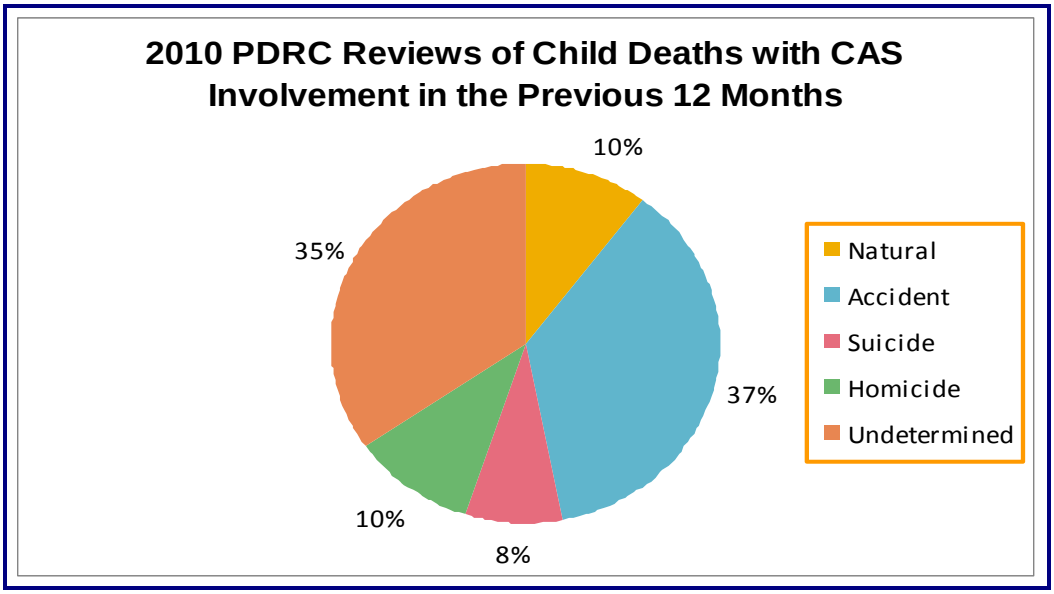
   The Child and Family Services Act is a provincial statute. The MCYS must establish whether or not governance structures present in the First Nations communities supersede or take precedence over provincial statute. The Society should not be asked to navigate this complex issue on its own.

PDRC REVIEWS OF CASES WITH CHILDREN'S AID SOCIETY INVOLVEMENT by MANNER OF DEATH

49 children's deaths with CAS involvement were reviewed by the PDRC during 2010. This chart depicts the manner of death for these 49 children. The vast majority of deaths were classified as Accident (18) or Undetermined (17). Five of the deaths were Homicide and 5 were Natural; 4 Suicide deaths were reviewed this year.

Of the 17 deaths that were classified as Undetermined, 15 involved unsafe sleeping arrangements (6 with bed sharing).

Five of the children whose deaths were reviewed this past year were in the care of a CAS at the time. In addition, one was on Extended Care and Maintenance (ECM). Manners of death for these children were accident (3); natural (1); undetermined (1); suicide (1).

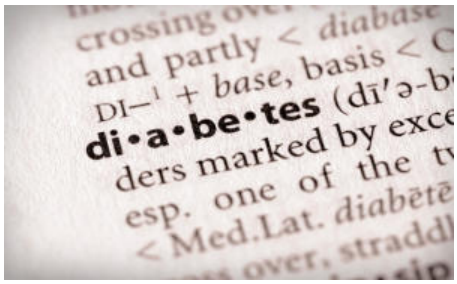


The following sections contain data from 2010 PDRC reviews and case examples which illustrate the five classifications of manner of death. As in all case examples in this report, identifying details have been altered to protect the privacy of the children and others.

Death by what means: NATURAL

Some children are so medically fragile that their deaths are expected and occur under medical care. Due to the nature of a child's illness and/or death, which are often predictable and not directly preventable by a CAS or medical intervention, few of these deaths receive full reviews by the PDRC, which include a complete report with recommendations.

However, there are some natural deaths of children known to a CAS that are reviewed by the PDRC. On occasion, there are concerns raised about the child's care prior to death and the PDRC will review both the CAS and medical care provided to the child. In 2010, we reviewed 5 deaths from natural causes; the children ranged in age from 1 day to 15 years and one was in the care of a CAS. Three of the cases, including the example below, also underwent a medical PDRC review.



Case Example:

15 year old SL, who had type one (1) diabetes and was insulin dependent, reportedly experienced nausea and approximately six to eight episodes of vomiting the day prior to his death. His ill health continued and the following day, he remained home from school. His mother left for work in the morning and telephoned him at approximately 11:00 a.m., at which time, SL reportedly told his mother that he had been drinking pop all day and that his blood sugar levels were normal. The mother directed her son to discontinue his insulin injections. She believed that she had previously been told to do this when her son was ill however, the diabetic clinic denied providing this advice. She reported that SL had been managing his own insulin needs for the year prior to his death, including four (4) daily blood sugar tests. He had not been taken to his scheduled appointments at the clinic during that time.

Later in the day, the mother returned home from work and found her son on the couch and was unable to rouse him. She immediately contacted 911 and began cardiopulmonary resuscitation, which was unsuccessful.

Cause of Death: Diabetic Ketoacidosis
Manner of Death: Natural

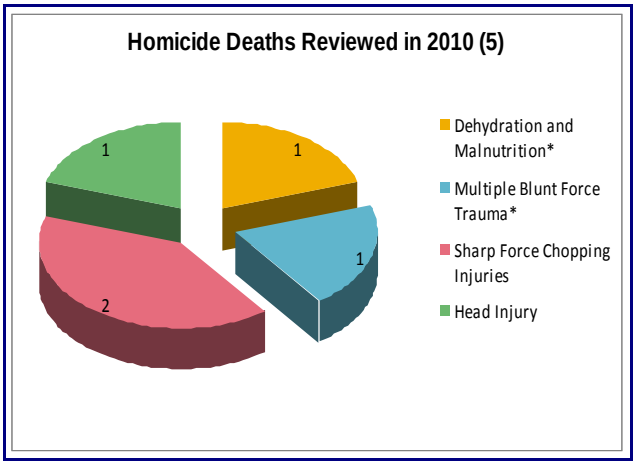
Recommendation to CAS: The Society should consider, when completing their review of this death, what constitutes a pattern of medical neglect under the *Child and Family Services Act*.

Rationale: Information readily available to the Children's Aid Society subsequent to the death demonstrated a lack of parental oversight into the decedent's medical care during the last six (6) month's of his life.

The Society is encouraged to utilize this case to formulate policy and procedure in response to allegations of medical neglect.

Death by what means: HOMICIDE

Five children's deaths reviewed in 2010 were the result of homicide, meaning the action of one person against another leading to death. A primary caregiver (s) was charged in all five deaths. One case involved two siblings being killed by one caregiver who was later found not criminally responsible; another involved one child being killed by two caregivers who were both convicted. The other two cases resulted in one conviction and one acquittal. These children ranged in age from 5 months to 17 years. One death also underwent a medical PDRC review.



* These 2 deaths were in the context of chronic neglect by caregivers

Case Example:

X and Y resided with their parents in Toronto. Police were called to the home by neighbours who were concerned about the father's violent behaviour. Police and paramedics attended the home and found that the children as well as the mother were deceased. Both children, aged 6 months and 3 years, were found in a bedroom beside their mother; all had sustained severe trauma to their bodies. The father was charged with three counts of first degree murder but was subsequently found not criminally responsible for the deaths.

The file was opened to the Children's Aid Society one year earlier for an investigation after a referral was made from a community member alleging that the father had threatened to harm a family member.

The father presented well in his contacts with the worker and there were no serious concerns about his mental health noted. Collateral service providers, including the physician and psychiatrist involved with the father, were not contacted during the investigation.

The Society's internal review noted that information made public after the deaths indicated that the health care providers involved with the father did not assess him as at risk of harming others.

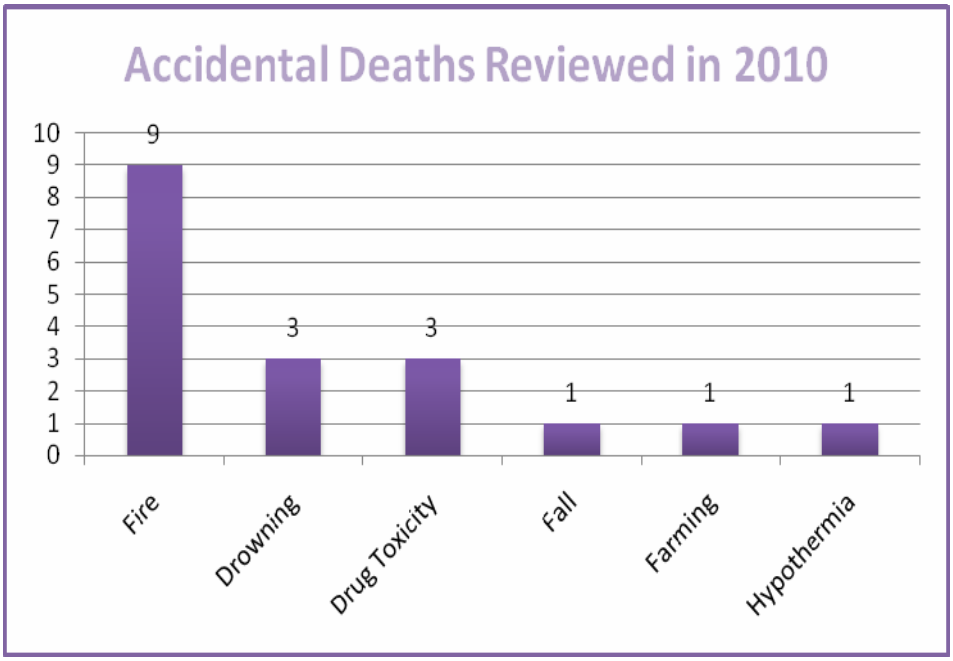
- **Cause of Death:** Sharp force chopping injuries
- **Manner of Death:** Homicide

Recommendation to CAS: The Society should ensure that its practice is to contact collaterals that are involved with a family particularly when the collaterals have information regarding the presenting concern(s).

Rationale: Seeking collateral information (psychiatrist, physician) was essential in this case given the presenting mental health concerns.

Death by what means: ACCIDENT

Eighteen of the 49 deaths (37%) reviewed by the PDRC in 2010 were classified as "Accident", meaning as a result of an incident that happened without foresight or expectation. Three of the eighteen children were in the care of a CAS. Most "accidental" deaths are preventable. Adequate supervision of young children near stairs, water, and fire starting materials, as well as an increased awareness through education about these risks, can help reduce or eliminate the majority of these deaths in the future.



"We often think that injury events are random "accidents." However, most injuries to children are predictable, understandable and therefore preventable".

(The National Center for Child Death Review - Michigan)

The 9 fire deaths were the result of 5 fires, 3 of which took the lives of 2 or 3 siblings. None of these homes had working smoke alarms, 4/5 fires were set by a child playing with matches or a lighter. In the vast majority of deaths (8/9) children died while the primary caregiver was under the influence of a significant amount of alcohol; 3 of these caregivers also perished in the fire.

Ten of all the reviewed deaths of children who died as a result of an accident were female and 8 were male. One child, as discussed in the following case example, was in the care of a CAS.

The 3 drowning deaths occurred in a swimming pool, a hot tub, and a bucket of water, in the absence of adult supervision.

Three of the children (2 youths and a toddler) died as a result of accidental drug toxicity. These children consumed substances that resulted in their unintentional death (inhalant and morphine). It is believed that the toddler ingested morphine tablets that were left within his reach, belonging to a family member.

Case Example:

Ten month old CS was found by his foster mother face down in the swimming pool in the foster parents' yard. CS's foster father performed CPR until emergency personnel arrived. The child was rushed to hospital where he later died.

The foster mother told the coroner that on the day of the incident she was using the computer and lost track of the child. She started searching for him when she realized she was unaware of his whereabouts. She did not immediately go outside because the sliding door to the back was closed. She later went to the backyard and found CS at the bottom of the pool. She pulled him out of the pool and called 911. She indicated that CS could not walk but could crawl well and he was able to go up and down stairs. The foster mother did not know how he could have gotten out to the pool as the sliding door was too heavy for him to open. The sliding glass door did not appear to have been latched. She speculated that their large dog may have opened the door as he had done so previously. The gate to the pool had a defective latch.

- **Cause of Death:** Drowning
- **Manner of Death:** Accident

Recommendation to CAS: Assessment of safety hazards in a foster home should not be limited to an annual assessment. There should be ongoing assessment of the physical safety of foster homes as circumstances can change. Resource and other Society workers attending a foster home should be checking at each home visit whether there are any apparent safety concerns that could place a child (ren) at risk given their age/behaviour.

Rationale: While the pool area in the foster home had fencing and a gate, the latch on the gate was not functioning properly. The sliding door to the pool area was not always locked and the door could be opened by the dog.

Death by what means: Suicide

A classification of suicide means the death is a result of an intentional act by a person knowing the probable consequence of what he or she is about to do – that is the commission or omission of an act that results in his or her own death.

The suicide deaths of 4 youths between the ages of 14 and 19 were reviewed in 2010 by the PDRC; 3 were male and 1 was female.

Three of the four young people were from a First Nation in northern Ontario; at least one was known to be struggling with sexual identity issues.

Three of the deceased had a history of alcohol abuse and had consumed alcohol on the day of death. Three had known histories of solvent abuse and previous suicidal ideation or attempts.

One youth was on Extended Care and Maintenance (ECM) with a CAS; the others resided with family members. All 4 youth came from families with lengthy CAS involvement for concerns of neglect, substance abuse and spousal violence.

All of these deaths were classified as:

- **Cause of Death:** Hanging
- **Manner of Death:** Suicide

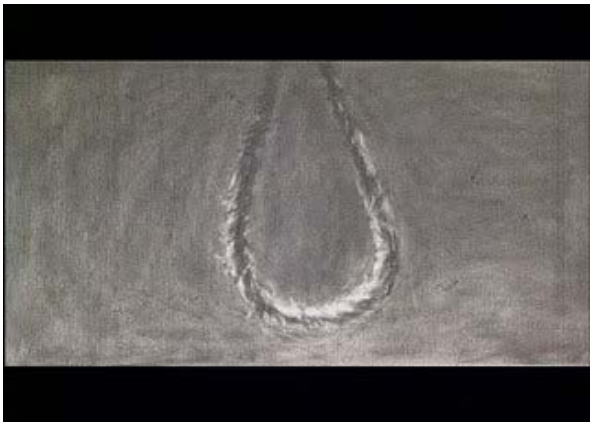
Case Example:

DM was found deceased in his bedroom by a family member. He had previously expressed suicidal thoughts and denied them when questioned. The previous evening he had been drinking what was reported to be hand sanitizer. At the time he went to bed, he did not mention suicidal or self-harming intentions.

The profile of this youth that emerged from the review of the files indicated many risk factors: dislocation from the reserve, low social skills, learning disability, bullied in school, aggressive toward other youth, no friends, concerned about health of grandfather, anger toward mother, desire to return to the reserve, issues with the law, as well as alcohol and solvent abuse.

Recommendation to CAS: The Society should review its' practices in terms of the use of assessments to inform service planning.

Rationale: Twice, after referrals were made for assessments, they were not implemented as DM's behaviour seemed to have improved. Also, it was only after being in programs for a couple of years that the issue of a Fetal Alcohol Spectrum Disorder (FASD) was being considered. Any or all of these assessments would have informed his treatment.

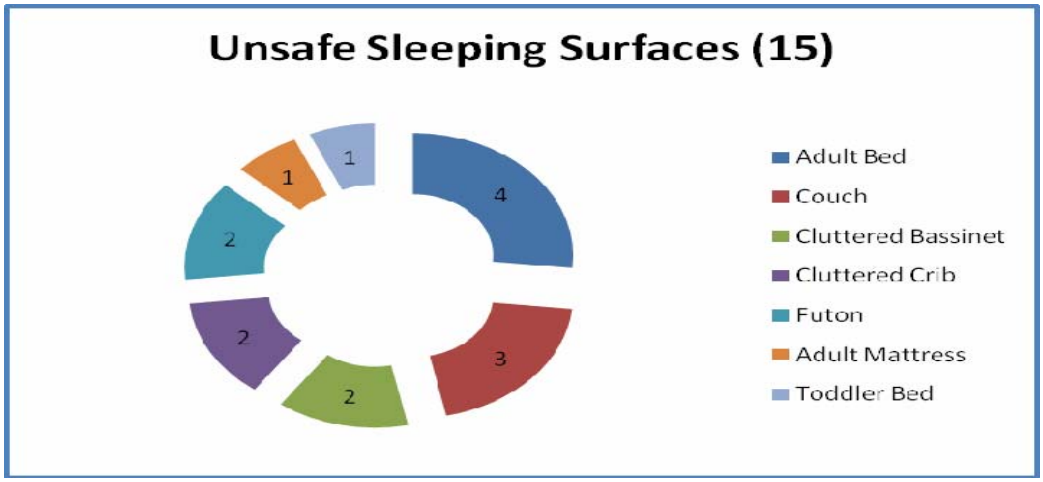


Death by what means: UNDETERMINED

When a full investigation, including autopsy, does not produce evidence for, or result in, a specific finding regarding the manner of death, the death is classified as undetermined. Many of the Sudden, Unexpected Deaths of Infants (SUDI), where no anatomic or toxicologic cause of death is found, are classified this way.

- 17/49 (35%) of deaths reviewed by the PDRC were classified as undetermined.
- 15/17 of these deaths (88%) involved infants less than 6 months of age who died in unsafe sleeping environments.
- Six of the unsafe sleeping-related deaths also involved bed sharing with an adult; in all cases, the mother.
- One of these children was in the care of a CAS.

The PDRC continues to note a disturbing trend in the deaths of infants sleeping in unsafe sleep environments, including bed sharing, which means sharing a sleep surface not approved for infant sleep, with an adult and/or sibling. The following chart demonstrates the types of sleep surfaces in which infants were found:



Safe Sleeping Position Statements and/or Warnings Issued:

1999	U.S. Consumer Product Safety Commission
1999	American Medical Association
1992 - 2008	American Academy of Pediatrics
2004	U.K. Department of Health
2004/2011	Canadian Paediatric Society
2004	Michigan Department of Community Health (Report of the Safe Sleep Work Group)
2007- 2011	Ontario Office of the Chief Coroner – PDRC
2007- 2011	Canadian Foundation for the Study of Infant Death
2008	Health Canada Consumer Product Safety
2010/11	Public Health Agency of Canada – Joint Statement on Safe Sleeping
2010/11	Registered Nurses Association of Ontario (Best Practice Guidelines – in process)

Case Example:

A one month old was found lifeless when her mother awoke shortly before 8:00 a.m. Her mother reported that she had been her usual self when she breast fed her at about 1:00 a.m. The mother called 911 and began to give cardiopulmonary resuscitation (CPR) under the direction of the 911 operator. The fire department arrived and continued CPR until the arrival of paramedics who could not revive the infant.

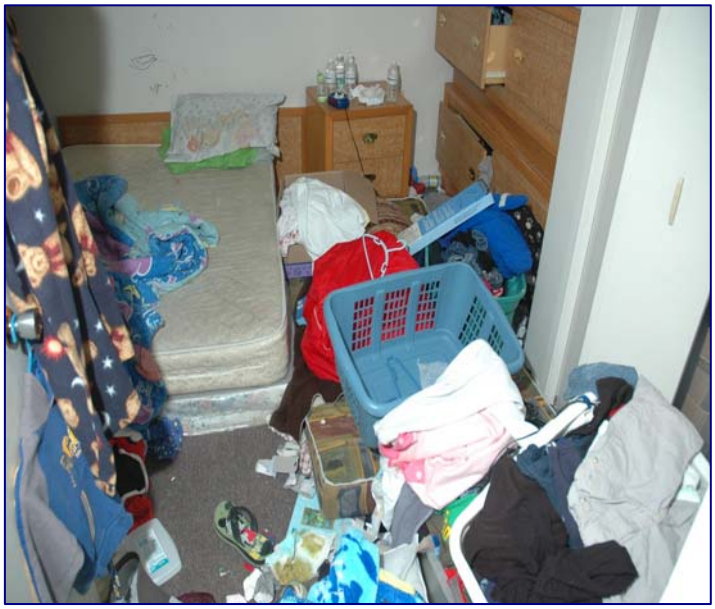
The baby had been sleeping on a double mattress with her mother. Her brother slept on a smaller mattress beside the mother. The home was extremely cluttered. First response personnel had to remove clutter to make enough room on the floor to attempt resuscitation.

- **Cause of Death:** No definitive anatomic or toxicologic cause of death. Sudden Unexpected Death in Infancy (SUDI) in the presence of bed sharing in an unsafe sleeping environment (adult double mattress)

- **Manner of Death:** Undetermined

Recommendation to CAS: The Society should ensure its staff is trained on safe sleeping practices for infants. Procedures should be put in place to assess the sleeping arrangements of infants being served by the agency, including visual inspection of the sleeping arrangements during home visits and methods of educating parents on safe sleeping arrangements for children.

Rationale: There was no information that Society staff reviewed safe sleeping practices with the parent and the home was not viewed. This child died in an unsafe sleeping situation and a very cluttered living environment.



Unsafe Sleeping and Bed Sharing

Case Example:

2006
Both parents had been drinking the night before this 3 month old baby died. The mother was on a couch with the baby, fed the baby a bottle around 2:30 a.m. and lay down to sleep with him after he finished. Evidently he was on top of the mother and slipped between the cushions.
When she awoke in the early morning she found he was not breathing. When EMS arrived at the home around 7:15 a.m., there were no vital signs and the baby could not be revived. CAS was not notified and the parents were advised the cause of death was natural (SIDS).

Cause of Death:
No definitive anatomic or toxicologic cause of death;
SUDI (Sudden Unexpected Death in Infancy), bed sharing in an unsafe sleeping environment (on sofa with mother).

Manner of Death: Undetermined

2008
Two years later, and after the birth of another infant, the same mother left the home at 4:00 p.m. and while out with her girlfriends reportedly consumed six beers. The grandparents were caring for the 5 week old baby. On her return around midnight, the mother lay down to sleep on the sofa where the baby was sleeping. She awoke at 4:30 a.m. to find the baby unresponsive and not breathing. 911 was called. While the paramedics were working on the baby, the mother commented that she may have smothered the baby in her sleep.

Cause of Death:
No definitive anatomic or toxicologic cause of death;
SUDI (Sudden Unexpected Death in Infancy), bed sharing in an unsafe sleeping environment (on sofa with mother).

Manner of Death: Undetermined

The PDRC has reviewed more than one case where a second infant has died in the same family in very similar circumstances. In this case, the parents were not advised that the unsafe sleeping/bed sharing was considered a factor in the death of their first child. It is imperative that parents receive accurate and informed information upon the death of a child.

It is also important that all parents be provided with consistent messages on the risks of unsafe sleeping so they can make informed and safe decisions about appropriate sleeping arrangements for their infants. The PDRC continues to make recommendations to CASs on the issue of safe sleeping and many agencies have developed literature, policy and best practice guidelines to enhance their response based on these recommendations:

- To provide training and policy on safe sleeping and prenatal substance abuse
- To develop a High Risk Infant protocol
- To ensure that any future children have appropriate and safe sleeping environments
- To develop Best Practice Guidelines on Safe Sleeping
- The Society should consider safe sleeping arrangements as an issue for review at each visit and discuss sleeping plans.
- The Society should also consider providing and discussing updated written material for parents on appropriate sleeping arrangements for infants and young children.

Safe Sleep Data from other Jurisdictions

The ***Joint Statement on Safe Sleep*** has been reviewed and revised in collaboration with North American experts in the field of sudden infant deaths, the Canadian Paediatric Society, the Canadian Foundation for the Study of Infant Deaths, the Canadian Institute of Child Health, Health Canada, and the Public Health Agency of Canada, with input from provincial/territorial, national, and regional public health stakeholders from across the country. The Office of the Chief Coroner participated in this review and revision. The revised statement will be available in June at: **www.publichealth.gc.ca/safesleep.** Further education and research in this area is warranted and is ongoing.

Various Child Death Review Teams around the world continue to note unsafe sleeping as recurring and troubling theme in infant deaths. For example:

- The Alaska Maternal-Infant Mortality and Child Death Review Annual Report for 2011 reported that among the 133 deaths reviewed which occurred during 2005-2007, the most common causes were Sudden Unexpected Infant Death (SUID) or asphyxiation, suffocation, or strangulation in a sleep environment (40% of reviewed deaths);

- The Florida Child Abuse Death Review Committee reported that 42/192 deaths reviewed (22%) in 2009 were caused by unsafe sleep environments;

- British Columbia's Office of the Representative for Children and Youth in its 2011 report **Fragile Lives, Fragmented Systems: Strengthening Supports for Vulnerable Infants,** states that "a *coordinated social marketing campaign about safe sleeping for infants is needed, with a targeted strategy for more vulnerable infants and families. The campaign should address interacting factors underlying vulnerability and specifically reach out to those most vulnerable in B.C.".* Information about safe sleep practices for infants can be provided to parents and caregivers by physicians, midwives, public health nurses, prenatal classes, doulas, counsellors and social workers through home, hospital and clinic or office visits. Information comes in many different forms, such as brochures, website information, manuals, pamphlets, books, cards and information sheets;

- The Pennsylvania Child Death Review Team reported that it reviewed 79 sleep-related deaths occurring in that state in 2008; 51% of the sleep-related deaths involved sleeping with others and 68% of the deaths involved children not in a crib or bassinet;

- The Child and Youth Mortality Review Committee in New Zealand reported that during 2003–2007 there were 154 SUDI cases (43%) where the sleep surface was known to be shared at the time of death. During this period the number of deaths in infants sleeping on a shared surface (i.e. shared with adults or other children) was highest for those less than five months of age (n=130).

CURRENT INITIATIVES:

A Team Approach to Paediatric Death Investigations Training

The following children's aid societies participated in the OCC training on conducting collaborative death investigations:

- **Hamilton CAS and CCAS**
- **Family and Children Services of Niagara**
- **Brant CAS**
- **Haldimand-Norfolk CAS**
- **Halton CAS**
- **Ottawa CAS**
- **Nipissing and Parry Sound CAS**

Other presentations on the findings of the PDRC:

- **CAS of the County of Bruce**
- **Hamilton Catholic CAS**
- **Huron-Perth CAS**
- **South West Region CASs**
- **Hamilton Child Welfare Conference**
- **Safe Sleeping Workshops for the Children's Aid Societies of County of Prince Edward; Lennox & Addington; Frontenac/Kingston; and Hastings**
- **Internal Reviews - Directors of Service Group, OACAS**
- **Child Victims of Domestic Violence Homicide – OACAS conference**

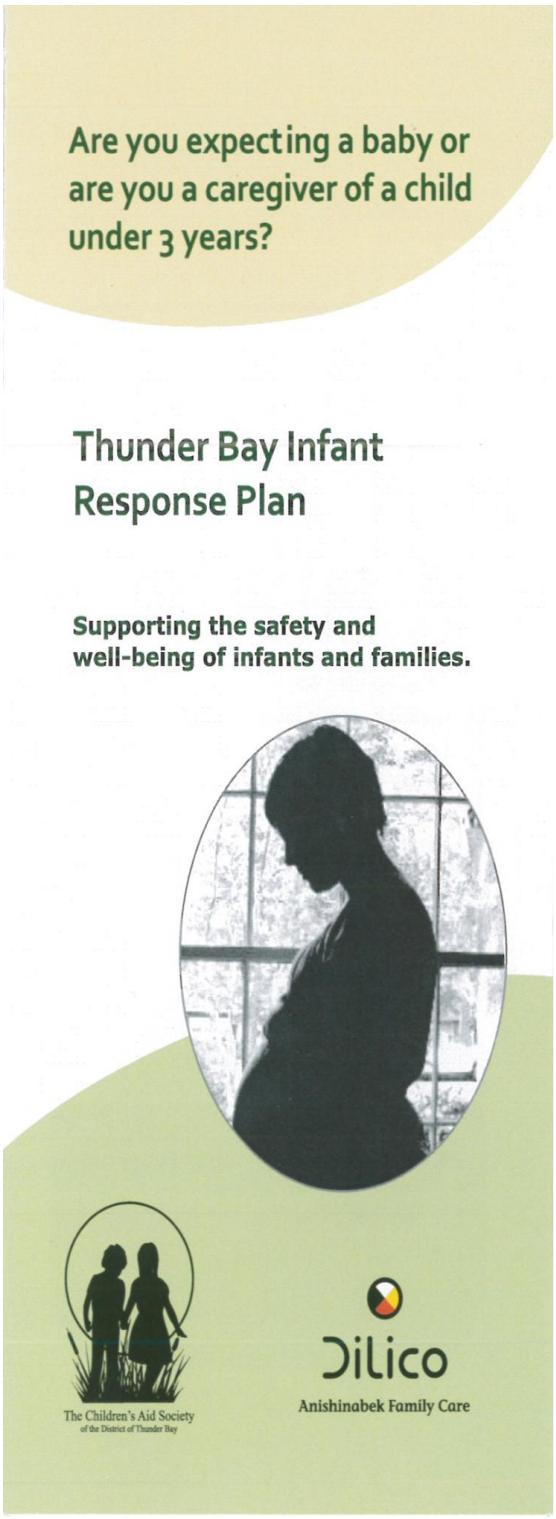
The PDRC staff attended the following agencies to see some **new Infant Safe Sleep initiatives**:

- **Hastings Children's Aid Society has developed a comprehensive Safe Sleep Practice Guideline which includes a Safe Sleeping Desk Guide to assist frontline workers in assessing safe sleep concerns. It is in Q&A format and is to be used as a guide in conjunction with a comprehensive risk assessment.**

- **Toronto Catholic Children's Aid Society developed a broad approach to safe sleep practices which included a safe sleep committee, policy review, safe sleep campaign, staff training and written materials.**

- **Thunder Bay Children's Aid Society and Dilico Anishinabek Family Care in collaboration with community partners have implemented a Thunder Bay Infant Response Plan to support the safety of high risk infants and families.**

Many children's aid societies have developed and implemented new initiatives in the spirit of enhancing practice, policy and service to families. The PDRC recognizes the good work arising from its recommendations and training and encourages other agencies to forward any revised or new policies, protocols and initiatives. Sharing this information with others in the province directly or through this annual report is beneficial for the field (see examples on next page).



Examples of literature produced by a CAS to assist parents and families caring for infants.

Activities of the Child Welfare Specialist in 2010

The Child Welfare Specialist was invited to participate in several committees, panels and advisory groups to represent the findings of the PDRC, including:

- RNAO – Safe Sleep Best Practice Guidelines Development Panel
- PHAC Joint Statement Revision – Expert Advisory Group on Safe Sleep
- Atlantic Canada Workshop on Child Death and Serious Injury Review
- Michigan – National Center on Child Fatality Review
- OACAS Working Group "Critical Connections – Where Woman Abuse and Child Safety Intersect" developing a practice guide for child welfare professionals when working with the issue of domestic violence
- Input into The Best Start Resource Centre's online tool: "On Track - Supporting Healthy Child Development and Early Identification in the Early Years: A Reference Guide for Professionals in Ontario"
- OACAS Fire Safety Resource Guide Working Group

Fire Safety and Prevention
A Resource Guide for Child Welfare Professionals

Largely in response to recent PDRC reports and recommendations on the deaths of children in residential fires, the Ontario Association of Children's Aid Societies (OACAS) organized the development of a **Resource Guide for Child Welfare Professionals**. A working group was struck to work collaboratively with a principle writer with representatives from child welfare, the OCC, the MCYS, OACAS and the Office of the Fire Marshal (OFM). The manual will be released in the very near future with a purpose to:

1. Educate and enhance child welfare professionals' awareness about the risk factors associated with home fires
2. Identify safety and prevention strategies that can be used by families
3. Provide a list of resources that are available to the child welfare professionals and to the families and children with whom they work

Did you know?

- home fires are the leading cause of unintentional death for young children (Chen, Bridgman-Acker, Edwards & Lauwers, 2009)
- most home fires occur at night while people are asleep (Office of the Chief Coroner, 2009)
- every year in Canada, approximately 1,300 fires are started by children playing with lighters and matches (OFM)
- most children who died in fires were in homes without smoke alarms or working smoke alarms (Groff, 2010)

From: The Resource Guide for Child Welfare Professionals (OACAS, 2011)

Themes Identified in 2010 PDRC Reviews of CAS Cases

One of the objectives of the PDRC review process is to track themes that continue to emerge over time. In reviewing the 49 deaths with CAS involvement this year, the following patterns were noted to repeat themselves in the delivery of child protection services:

- Infants and adolescents account for the majority of deaths reviewed by the PDRC.
- Accidental and unsafe sleeping were the most common types of potentially preventable deaths reviewed.
- Several cases involved the deaths of infants born to women on Methadone programs.
- At least 3 cases involved the deaths of children who were returned to the care of their parents by the family court system, contrary to a CAS application.
- Children staying with alternate caregivers and/or in temporary living situations are also at risk of death, therefore policies and training should be broadened to include them.
- Several cases demonstrated chronic problems over long periods of time where service plan goals are repeated and little change was demonstrated by the caregiver(s).
- Patterns of neglect are evident; intervention is frequently incident based and failed to consider the entire family history over time.
- Many of the deaths occurred in the context of chronic neglect.
- Information sharing within agencies, amongst agencies and with other service providers is lacking.
- Investigation of child deaths is impacted by a lack of communication between police and children's aid societies.
- Record checks are not always completed on everyone involved with the child.
- Interventions are often directed toward mothers; assessment and expectations of fathers are missing.
- Some files close prematurely, particularly when families are difficult to locate or engage; some files were closed during a pregnancy, even after lengthy periods of CAS involvement.
- Families experiencing domestic violence, substance abuse and mental health concerns are prevalent in the cases reviewed.
- The children were dealing with Fetal Alcohol Spectrum Disorders, physical and emotional abuse and neglect, learning and cognitive limitations, inadequate supervision and exposure to domestic violence.
- Finding a balance between providing support to parents who face barriers in their role as caregivers, while also protecting the safety of, and reducing risk to, vulnerable children is difficult.
- Workers should receive additional training and support in motivating and empowering hard-to-engage people to participate in services; often repeated attempts are made to work voluntarily with families who might require a more intrusive approach.

The next several pages provide examples of themes and the most common findings, including PDRC recommendations and rationale, from the reviews of the 49 deaths in 2010. Agencies that complete Internal Child Death Reviews often arrive at findings and recommendations for improving internal practice and policy; the PDRC acknowledges these recommendations and may add its own.

On occasion, the PDRC notices themes in the group of cases reviewed in a particular month. These are pointed out to the MCYS at the time the individual reports are sent. Following are some of the themes identified in 2010 during case reviews:

The PDRC noted a concerning theme related to grandparents in three of the cases reviewed:

- In two cases, the grandparents were approved as kinship service providers despite having significant child welfare histories themselves.
- In one case, the grandparents, who had significant child welfare histories and whose presence in the home were meant to mitigate risk, left medications in the reach of the child which led to his death.

One month, there were four noteworthy themes observed by the committee in the cases reviewed:

- Parenting capacity issues with parents of young children who have already had previous children removed from their care.
- Staff experiencing difficulty in engaging non-compliant or "resistant clients".
- Concerns about unsafe sleeping environments and inconsistent or non-existent messages from community collaterals working with the same families as a CAS.
- The Family Court system not accepting child protection concerns identified by a child welfare agency, thereby returning children home, who subsequently died.

Three concerning themes were observed by the committee in two of the cases reviewed:

- Little information in the CAS files regarding the father and his role in the family.
- The practice of discharging high risk vulnerable infants to mothers on Methadone Maintenance programs.
- Lack of protocols, collaboration and information sharing with Methadone prescribing physicians.

A concerning theme was noticed in two of the cases reviewed this month:

- The lack of legislation (and potentially, services) for the protection of vulnerable and developmentally challenged young people over the age of 16 years.

Enhancing Child Welfare Practice through Lessons Learned from Child Death Reviews - Recommendations to CAS - Themes

Please note that while the following examples may promote best practices, they are made on individual cases and are not meant to imply any responsibility for a death.

Accidental Deaths:

Recommendation:	Rationale:
The Society should encourage staff to discuss fire safety with clients, including children's access to fire starting materials.	The parents were known smokers and the child was able to access matches and a lighter to set a fire. The PDRC reviewed the deaths of 9 children in residential fires this year.
It is recommended that the Risk Assessment for future children born to this family incorporate the failure to protect this child from harm and not rely on accidental as the full explanation for the death.	It appears that the child was not to be left in the care of the grandfather yet the mother and grandmother knowingly allowed him to have the child in his care, when he drowned.
The Society should routinely assess the homes of caregivers for safety concerns related to stairways.	In this case, a child died after a fall down the stairs; there were two child gates in the home however, neither was in use at the time of the death.

Unsafe Sleeping Environments:

Recommendation:	Rationale:
The Society should ensure that in addition to cautioning caregivers about bed sharing and crib safety, they review the dangers regarding infants being placed to sleep in car seats, playpens, swings, couches etc.	The infant had been put to sleep in a car seat at least some of the time. While she had a crib, the crib was found to be cluttered with clothing at the time of her death and did not appear to be in use.
The file documentation should reflect the Cause of Death as being Sudden Unexpected Death in Infancy in the presence of bed sharing in an unsafe sleeping environment. This information should be incorporated into the verification decision.	The investigation by the Society into this infant's death concluded that his death was non-intentional and that there was no indication of abuse or maltreatment. The concerns about unsafe sleeping practices were not included in the verification decision.
The Society should review with its supervisors and child protection workers the necessity in viewing the entire family home when completing child protection investigations. This is particularly critical when there is a birth that is pending and sleeping arrangements for an infant need to be assessed.	In the investigation that was concluded prior to the birth, the home was not seen and there was no determination if the mother had an appropriate sleeping arrangement for her expectant baby. A month later, when the infant died, an unsafe sleeping environment was a contributing factor. There is no information about a crib being used in the home for the baby.

Adolescent Suicide:

Recommendation:	Rationale:
The CAS should provide suicide prevention training to all case carrying staff.	The agency's plan to provide training to staff servicing Extended Care and Maintenance (ECM) youths should be expanded to include all staff as suicide is not isolated to the ECM population.
Suicide prevention programs should be undertaken in collaboration and cooperation with various parties: family, community, Chief and Council, service providers, helpers, governments and CAS.	First Nations youth are committing suicide at a high rate. The majority of these youth come from environments of poverty, substance abuse, violence and mental health concerns. These problems cannot be reduced by one system, such as child welfare, in isolation.
The Society should work with the Chief and Council to strengthen parenting capacity in the parents, or in the alternative, the foster/kinship care system to provide temporary or permanent options for some of the community's children.	Family and community members should be educated and supported to help create stronger alternatives to the family environments that are contributing to suicide deaths.

Information Sharing and Protocols:

Recommendation:	Rationale:
Police and the CAS should review and update if needed their protocol on sharing information and duty to report.	During the course of an investigation police obtained information regarding a child playing with fire and the children in the home were playing with the wood stove. It is not clear whether this information was shared with the CAS. It is also not clear if information regarding there being a domestic assault was shared with a child welfare agency.
The Society should reinforce with its supervisors and child protection workers the need for weekly contact with children under two as per agency policy. In addition, the importance of infants seeing physicians in a timely manner and workers communicating with community collaterals should be reinforced.	This infant was not seen by the worker on a weekly basis, did not see a physician upon discharge from hospital, and there was a lack of communication and collaboration with community partners.
The Society should develop a protocol with the Community Care Access Centre and Children's Hospital to ensure joint service planning and intervention for medically fragile children.	Case Planning meetings would be helpful and could be set up as a coordinated and supportive venue for parents. Little coordination or communication between stake holders involved in this child's care was evident in this case.

The CAS should establish a protocol with the local hospitals on how information will be shared and to improve communication regarding the discharge of high risk infants.	The premature infant in this case was transferred between two hospitals and after five weeks, he was discharged into a high risk environment and the care of his young parents without any communication with the CAS. He died a week later in an unsafe sleeping environment.

Comprehensive Assessment (including File History, Collateral and Record Checks):

Recommendation:	**Rationale:**
The CAS should ensure that its Home Study process incorporates all prospective caregivers including the completion of criminal record checks on all individual's proposing a plan of care for a child in receipt of services from the Society.	A criminal record check did not occur on the father as a potential caregiver to his son. Further, there is no evidence that the step-mother, who was dating him at the time of the home study and later began to cohabitate with him and his children, was ever formally assessed as a caregiver. It is also noted that she had two assault convictions.
Case planning should incorporate prior child protection intervention, its outcome(s) and a comprehensive assessment of risk to all children.	a. Case planning did not routinely incorporate the family's history of child protection intervention. b. Case planning did not appear to fully consider the mother's history of child protection intervention and her propensity towards verbal and/or physical violence, often in the presence of her children, as well as substance abuse and potential mental health issues.
The Society must ensure that a full parenting assessment is completed prior to this mother regaining the sole parenting role for the surviving children.	This mother's parenting skills require a full assessment. The outcome of this assessment should be matched with the outcome of the child (ren)'s assessments and needs.
The Society should review its practice decision to close an ongoing protection case during a pregnancy.	Despite the mother's history of addiction, including during her pregnancies, the Society chose to close the file prior to the birth of this child who, when born two months later, was diagnosed with Neonatal Abstinence Syndrome.

Use of Methadone:

Recommendation:	**Rationale:**
It is recommended that the staff be trained on the effects of Methadone, in terms of potential risks for parents and young children.	The information regarding the mother's drug use and Methadone Program were part of the initial referral. It is not clear that the staff investigated how this affected the level of risk to the child. There may be an over reliance on Methadone use as a protective factor when in fact it adds to risk. In order to better provide service, especially

	to vulnerable infants, staff needs to work closely with service partners in addictions.
The Society should develop a protocol with the local Methadone Clinic to better service and support parents and children.	In this case, there were apparent challenges for the Society in obtaining information regarding risks to the children. Protocols can clarify roles, expectations, communication and exchange of information.
The Provincial Council for Maternal-Child Health should be notified of this death to inform its deliberations with respect to risk management for best practice in infants where the mothers are using Methadone. The College of Physicians and Surgeons should notify its Methadone prescribing physicians of their responsibility to provide information to CAS conducting investigations pursuant to their child protection mandate. This would include the need to disclose ongoing substance abuse issues to the CAS upon request or as a "duty to report" obligation under the CFSA, to ensure the safety of the children.	This case is one of several reviewed by the PDRC where an infant has died while in the care of a mother taking Methadone and where the CAS was involved with the family due to protection concerns. Very little, if any, information was shared by the medical professionals treating the mother.

Training:

Recommendation:	**Rationale:**
Staff may benefit from training on substance abuse including solvent abuse and ways in which they can work with families to address the concerns. The training should include information on the impact of prenatal exposure to alcohol and other substances.	There was a very limited response to the concerns about the mother's substance abuse and no information how the mother's alcohol use while she was pregnant might impact her baby.
The Society should ensure that in addition to the emphasis on compliance issues, that the training needs for clinical issues related to fire setting and other high risk indicators are scheduled.	The Society has identified a re-organized unit to focus on high risk indicators and specialized training will need to be considered to ensure that this unit is highly trained for this function. This would help integrate the research literature noted in the Society findings on fire setting.
The Society should develop learning opportunities for staff to increase knowledge in working with families where there are domestic violence concerns. As part of the learning, staff should develop skills at assessing the impact on the adult	There was significant domestic violence in this family. The internal review does not outline what interventions occurred as a result of the domestic violence apart from having the children placed with extended family on several occasions. There is no information that the father was held

victim and child (ren). The need to hold the perpetrator of the violence accountable for the behaviour should also be included.	accountable for his violent behaviour or asked to participate in any services to address the concerns.

Family Court Decisions:

Recommendation:	Rationale:
Should child protection services be currently provided, or where the need arises again in the future, the PDRC encourages the CAS to vigorously and comprehensively intervene, informed by both file review and information from involved community based services, to further efforts to protect the children in this family.	Child welfare court involvement occurred between 2003 and 2008 including three separate apprehensions of these children. The CAS concerns for the welfare of the children and belief that the parents posed a significant risk to the children, was not shared by the Family Court system and they were returned to the care of the parents after a contested hearing. The PDRC has significant child protection concerns for the surviving and future children of this couple. The courts were not convinced of the need for the level of intrusion proposed by CAS. It is more than likely, that had the courts accepted the CAS plan for the children, this child would have been alive today.

Investigation & Review of Child Deaths:

Recommendation:	Rationale:
The Society should develop practice and policy that would establish investigative plans for all child deaths, particularly those of children in care and those whose deaths are sudden and unexpected.	The Society was aware that a child in care had sustained a serious, and ultimately fatal, fall in the foster home; a decision was made that an investigation, including a safety plan for the surviving children, in the home was not warranted.
The CAS and local police service should review and update their protocol for conducting joint investigations upon the death of a child and review their process of information sharing.	There was no joint investigation in this case. Information regarding the scene, including the cluttered sleep environment was not shared by police with the CAS. Additionally, the CAS did not conduct an independent investigation, despite the family having an open protection file.
Any future Internal Child Death Reviews completed by this Society should include information on the full child welfare history of the family and provide a comprehensive analysis of the service provided by the Society, findings and recommendations. The reviewers should include an external expert.	The Child Fatality Case Summary Report was never completed and the Internal Child Death Review was received by the Office of the Chief Coroner eighteen months later. The complete child welfare history was not included in the internal review, report and analysis. No external reviewer was involved in the process.

Theme: Alternate Caregivers and Temporary Living Situations

As stated earlier in the report, the PDRC has reviewed several cases where children have died while in alternate care or while staying with a parent in a temporary living situation. The following excerpt from a 2010 case review demonstrates why collaboration and communication is so important between service providers and why education on safe sleeping should be broadened to include all adults responsible for the care of infants and children.

A young mother was residing with her newborn infant at a shelter at the time of his death. One morning, the baby was fed at approximately 2:00 a.m. and the mother placed him on his side propped up by his arm to alleviate what she thought was a stuffy nose. She found him unresponsive at approximately 8:00 a.m. when she was awoken by shelter staff. He was prone at the time. Resuscitative attempts were unsuccessful and he was pronounced dead at hospital.

In the room at the shelter there was a crib and two twin beds. The mother reported that she most often placed the infant to sleep in the bed or they both slept together in one twin bed.

- **Cause of Death:** No definitive anatomic or toxicologic cause of death
  Sudden Unexpected Death in Infancy (SUDI)
  Bed sharing in an unsafe sleep environment

- **Manner of Death:** Undetermined

Findings of the PDRC:

- The internal review comprehensively outlined the child welfare history with the family, identified key service delivery issues and made relevant recommendations. The internal review referenced the recommendations from the Jordan Heikamp Inquest and integrated them into the review.
- It was difficult to understand why the decision was made that allowed this mother to parent this infant, given severe ongoing protection concerns.
- Although reportedly discouraging bed sharing, if noted, the shelter did not have a policy against it and left the decision to the respective mother. They have since developed a policy.
- The shelter manager reported at the time that she was unaware of the PDRC report findings into infant deaths and the risk factors associated with bed sharing, car seat safety, and crib safety.
- There was a lack of service coordination between the Society, Public Health and the shelter, where there was no infant safe sleeping policy at the time.
- The risk to this infant was not fully appreciated by the Society and the other service providers

Recommendation of the PDRC:

- **The Society should ensure that they have a signed Service Agreement with a shelter if there are expectations that the shelter monitor/ensure a child's safety.**

Rationale:

- There was insufficient communication and information sharing between the Society and the shelter. This discussion can occur with the service agencies when protocols are revisited as outlined in a recommendation of the internal review.

Enhancing Child Welfare Practice through Lessons Learned from Child Death Reviews - Recommendations to MCYS - Themes

Ministry of Children and Youth Services Monitoring of PDRC Recommendations

Following the CASs' receipt of individual PDRC reports, societies consider the PDRC report, implement the recommendations as appropriate, and incorporate the recommendations addressed to them into their written progress reports submitted to the Ministry Regional Offices. Ministry Regional Offices are responsible for follow-up with individual CAS's on a quarterly basis regarding the actions they have taken to respond to the specific PDRC report recommendations. Many societies also forward a copy of their response to the recommendations back to the PDRC.

The Ministry's Client Services Branch monitors the implementation status of the PDRC recommendations and the action taken by CAS's to respond to specific recommendations. Responses to the recommendations are prepared and submitted to the Assistant Deputy Minister on a quarterly basis.

PDRC recommendations directed to the Ministry of Children and Youth Services are reviewed and responded to by the program and policy divisions and reported to the PDRC and the public and through this annual report.

The Client Services Branch and the Child Welfare Secretariat worked together to provide a response to the recommendations directed to the MCYS during 2010. The three most frequently recurring themes in recommendations to the MCYS were in relation to a) fire safety, b) information sharing between service providers, police and the children's aid societies, and c) adolescents. Sample recommendations for each of these themes with corresponding rationale are presented below. The response from the MCYS to all themes is found on pages 87-90.

Fire Safety:

Recommendation:	Rationale:
MCYS should require through an amendment of the existing Child Protection Standards (2007) the requirement for child protection staff to assess for the presence of working smoke detectors during the Safety Assessment and annually for all clients in receipt of ongoing intervention.	Investigation by the Office of the Fire Marshal revealed that two AC powered, ionization type smoke alarms and one AC powered carbon monoxide alarm were found in the area of a closet on the second floor of the home. None of the three units were in operation at the time of the fire as is required by provincial law (Ontario Fire Code).

Information Sharing:

Recommendation:	Rationale:
A review of the Child and Family Services Act (CFSA), including Part VIII, not yet proclaimed, is recommended to ensure that Societies have the power to obtain verbal and written information from community agencies when parents are not cooperating in the best interest of the child.	The Confidentiality section of the CFSA Part Vlll needs to take this issue into account. This mother regrettably prevented the necessary communication between a service provider and the CAS. Where a CAS is unable to obtain required information from service providers, because a parent does not provide consent to share information, a child's well being can be negatively affected.
The Ministry of Children and Youth Services should take a leadership role in the facilitation and development of the recommended province wide standards for information sharing between police and children's aid societies in all cases of suspicious child deaths.	In the Report on the Inquiry into Paediatric Forensic Pathology in Ontario on 1 October 2008, Commissioner Stephen T. Goudge recommends (#163) that the Province on Ontario with the assistance of the Ontario Association of Children's Aid Societies and others, develop province wide standards, supplementing those that already exist, on the sharing of information arising out of the investigations of suspicious child deaths by the police and children's aid societies. In this particular case, while there was evidence that the CAS requested a joint inquiry, police conducted an autonomous investigation. Further, it cannot be determined from submitted documentation whether ongoing dialogue and information exchange was maintained.

Adolescent Mental Health Issues/Aboriginal Suicides in the North:

Recommendation:	Rationale:
MCYS should review the resource needs of the First Nations community and the Society and work collaboratively with the Chief and Council, Indian and Northern Affairs and the Ministry of Education to create adequate school classrooms and a recreation facility to meet the needs of the youth and residents.	The community has documented the lack of school placements and alternate activities for the 800 children and youth living there; without these provisions, the risk factors for them remain very high. The children will continue to pursue unhealthy endeavours such as solvent abuse without other outlets.

Older Adolescents and protections for sixteen (16) and seventeen (17) year old developmentally and/or physically handicapped youth at risk of harm or neglect:

Recommendation:	Rationale:
The MCYS should review and revise as applicable, policies specific to the discontinuation of foster and residential care to youth whose permanent wardship expires and subsequently enter in Extended Care and Maintenance (ECM) agreements.	This youth experienced one long term foster care placement which terminated as per MCYS policy, and as such, he was forced to transition into independent living, a life change which he was ill equipped to manage.
The Government of Ontario (MCYS) should consider proclaiming legislation protecting sixteen (16) and seventeen (17) year old developmentally and/or physically handicapped youth who may have allegedly suffered from, or be at risk of harm, or neglect.	The *Child and Family Services Act* affords no protection to youth sixteen (16) and seventeen (17) years of age unless they are the subject of a court order. The *Developmental Services Act* and the *Services and Supports to Promote the Social Inclusion of Persons with Developmental Disabilities Act* afford no protection to youth under the age of eighteen (18). There is clear evidence of a gap in legislation protecting vulnerable 16 and 17 year old youth.

Ministry of Children and Youth Services
Response to Themes in 2011 PDRC Report

Upon review of the 49 deaths of children who had been involved with a children's aid society (CAS) within the 12 months preceding death and presented to the Paediatric Death Review Committee, five common themes were highlighted.

1. Accidental Deaths - Fire and Drowning

Twelve of the deaths reviewed in 8 reports by the PDRC in 2010 were determined to be accidental deaths related to fire (9) and drowning (3). This is a consistent theme from past reports.

MCYS Response:

- The ministry funds the Ontario Association of Children's Aid Societies (OACAS) to provide the Education Services curricula, which in 2010 – 2011 included funding for OACAS to develop a Fire Safety Resource Guide. OACAS and other stakeholders, including the ministry, Office of the Fire Marshal, Office of the Chief Coroner and children's aid society representatives developed the Fire Safety Resource Guide to be used by child welfare professionals. This resource guide is being planned for publication and distribution to the child welfare sector in the Spring of 2011.

- The ministry funds the OACAS to provide the Education Services curricula which includes a module on Working with Infants at Risk and their Families. The module includes training on the issue of safe bathing practices for infants, and how to educate families on preventing accidental drowning.

2. Information Sharing

One PDRC report from 2010 included the recommendation that the ministry develop province wide standards, supplementing those that already exist, on the sharing of information arising out of the investigations of suspicious child deaths by the police and children's aid societies.

MCYS Response:

- The ministry is currently working with the Office of the Chief Coroner to develop a strategy to improve information sharing between stakeholders during the investigations of suspicious child deaths. As part of this strategy, the ministry is working with the Office of the Chief Coroner to strike an Information Sharing Working Group. The first meeting of this working group is anticipated to occur in the Spring of 2011.
- In November 2010, the ministry announced a plan to modernize information systems through the implementation of a common information system for all CASs called the Child Protection Information Network (CPIN). The new CPIN system will provide a full range of functionality, including: case management, financial managements, document/records management, business intelligence/reporting, data cleansing/migration tools, and computer-based training. CPIN will be deployed in stages with development and implementation beginning in 2010-11 and completion targeted for 2014-15.
- CPIN will mean that the CAS information required to make the best decisions for each child receiving services will be accessible in one place and information will be able to be shared electronically between CASs.

3. Children's Mental Health Issues/Aboriginal Suicides in the North

A total of four deaths reviewed by the PDRC in 2010 were adolescent suicides, three of which involved Aboriginal youth. This is a consistent theme from past reports.

MCYS Response:

- In 2010 the Office of the Chief Coroner formed a multi-disciplinary review committee to examine youth suicides in Pikangikum First Nation and will be releasing a report on its findings in June 2011. The ministry will be reviewing this report and its accompanying recommendations.
- The ministry funds the OACAS to provide the Education Services curricula which includes a course on Working with Adolescents and their Families with a focus on adolescent mental health and suicide. An Advanced Practice Training – Certificate Program (Working with Adolescents) was implemented by OACAS in the Fall of 2010.
- In the Spring of 2011, with funding provided by the ministry, OACAS arranged for the delivery to its member agencies the Touch Stones of Hope curriculum which was developed by First Nations Child and Family Caring Society of Canada.

- Some of the recent commitments made by the ministry in supporting strategies to address issues of adolescent mental health and in particular Aboriginal suicides in Northern Ontario include:
    - Approval of over $700,000 for Nishnawbe-Aski Nation's social development strategy to address the root causes of a cluster of suicides on Pikangikum First Nation;
    - Commitment of $470,800 to support Payukotayno: James and Hudson Bay Family Services to provide crisis intervention to James Bay Coastal Communities facing multiple youth suicides;
    - Commitment of up to $149,000 to Nodin Child and Family Intervention Services so that two community-based youth workers can support children and youth in Eabametoong First Nation;
    - Provision of $6.19 million annually to the Ontario Federation of Indian Friendship Centres for the Akwe:go Urban Aboriginal Children's Program and the Wasa-Nabin Urban Aboriginal Youth Program;
    - Provision of $22.7 million this year for child well-being and prevention services to First Nation communities on reserve. Services include assessment, counselling and residential services to address a range of social, emotional and/or behavioural problems.
- As announced in the 2011 Budget, the Ontario government has committed to invest in a comprehensive Mental Health and Addictions Strategy, starting with children and youth. By 2013-14, funding to support the strategy will grow to $93 million per year.
- The 2011 Budget also included confirmation that the government is continuing to implement the Working Together for Kids' Mental Health initiative. The program has been rolled out in four communities by partnering with schools and service providers. This gives front-line workers, such as teachers and child and youth workers, training and tools for risk screening and needs assessment. The goal is to identify issues sooner so that children and youth can be linked with appropriate services.

4. Unsafe Sleeping Arrangements

Fifteen of the deaths reviewed by the PDRC in 2010 involved unsafe sleeping arrangements. This is a consistent theme from past reports.

MCYS Response:

- The Ontario Safety Assessment in the Ontario Child Protection Tools Manual (2007) requires consideration of a child's sleeping arrangements (Safety Indicator #8, e.g. adult sharing a bed with an infant or an unsafe crib) when protection staff assess the family's physical living conditions.
- The ministry funds the OACAS to provide the Education Services curricula which includes a training module on Working with Infants at Risk and their Families. This module includes training on the dangers of bedsharing and the necessity of appropriate sleeping environments for infants.

5. Protections for sixteen (16) and seventeen (17) year old developmentally and/or physically handicapped youth at risk of harm or neglect

Two PDRC reports from 2010 included the recommendation that the ministry consider proclaiming legislation protecting sixteen (16) and seventeen (17) year old developmentally and/or physically handicapped youth who may have allegedly suffered from, or be at risk of harm or neglect.

MCYS Response:

- Under current legislation, children's aid societies have the exclusive jurisdiction to provide protection services to children under the age of 16 and children who are already the subject of a child protection order under the *Child and Family Services Act*, up to age 18.
- In situations where it is suspected that children over the age of 16 are suffering from abuse, and they are not already the subject of a child protection order, the ministry advises contacting the police and alerting them of possible situations of abuse so that they may take appropriate action.
- Furthermore, where there is a possible case of serious personal abuse involving individuals over the age of 16, the Office of the Public Guardian and Trustee (OPGT) should be contacted. Where a person is over the age of 16, the OPGT has authority to conduct an investigation and determine whether the person is mentally incapable, is suffering harm and needs essential help they are not receiving. Following its investigation, the OPGT may apply to the court to become the abused person's temporary guardian in order to get them the required help. Even if temporary guardianship is not necessary, the OPGT can still help the person get access to other services.
- For those vulnerable youth whose court-ordered or formal customary care is terminated at ages 16 or 17, the ministry is establishing new policy to allow these youth to return to CASs to receive supports until age 18.
- Proposed amendments to the CFSA are being put forward to allow these returning youth to enter into voluntary agreements with their CASs to receive Extended Care and Maintenance supports from ages 18 to 21, giving them a better chance for a successful transition to adulthood.

Enhancing Child Welfare Practice through Lessons Learned from Child Death Reviews - Recommendations to Others

While the majority of PDRC recommendations are directed toward CASs and the MCYS, occasionally other organizations receive recommendations. In 2010, the PDRC provided recommendations to such organizations as:

- **Various police departments**
- **Various hospitals and Public Health Units**
- **College of Physicians and Surgeons**
- **Provincial Council for Maternal-Child Health**
- **Office of the Chief Coroner**
- **Canadian Paediatric Society**
- **College of Midwives of Ontario**
- **College of Family Physicians of Canada**

FEATURE ARTICLES

Pikangikum First Nation: Review of Suicides in the Years 2006 – 2008

Introduction

This report is a death review of the 16 children between the ages of 10-19 who died as a result of suicide in the years 2006-2008 in the Pikangikum First Nation.

The Purpose of the review was to:

1. Examine the circumstances of the death of each of the youth.
2. To collect and analyze information about the deaths in order to prevent further deaths in similar circumstances.
3. To make recommendations directed toward the avoidance of deaths in similar circumstances or respecting any other matter arising out of the review.

The Office of the Chief Coroner has observed, with increasing alarm, the rising toll of First Nation teenage death in northern Ontario youth living on reserve. As a result, a first review of 9 deaths in Pikangikum was completed in 2009, and was presented in the Annual Report of the Paediatric Death Review Committee and Deaths Under Five Committee. A recommendation arising from that review was that a community inquiry be convened to review:

- The understanding and response of the Chief and Council to conditions in the community, which has led to the high rate of suicide.
- The role that education, health and other community services could play in preventing the hopelessness, desperation, and ultimately, suicide of these young children.
- The contributions of community members and natural leaders to the development of strategies to prevent youth suicide.
- The community-wide suicide prevention strategies.
- The development or results since the Sakanee Inquest into aboriginal youth suicide in 1999.

This death review considered and examined these issues.

The Deaths

The following death is provided to the reader as representative of the deaths which were reviewed by the panel. Each had a constellation of issues which revealed the difficult challenges the children faced. The themes and the tensions in their lives were recurrent and repetitive.

A repeated comment from the investigating panel was that these children had demonstrated, time and time again in the face of overwhelming challenges and assaults on their physical, emotional, mental, and spiritual well-being, genuine resilience. Their tenacity and their ability to cope in their youthful troubled lives were viewed as strengths from which to build. Ultimately, they did succumb to an impulse in a suicidal act. The names in each case have been changed as have the dates for the purpose of confidentiality.

Case Example

Janice was 16 years 5 months of age when she died after being discovered hanging in the home she shared with her grandparents. Earlier in the day, she had been drinking alcohol with her friends and at the time of her death, she smelled of gasoline. It appeared that she had removed the ceiling tile exposing a rafter from which she attached a sheet. She was found by her brother. The cause of death was hanging, and the manner of death was suicide.

At her autopsy, she was noted to have a healed cigarette burn and a more recent one on her right forearm. These appeared to be self-inflicted.

Janice had endured a challenging life. She was one of 10 children none of whom were actually raised by their biological parents. Her mother, at different times, did reside with her children, but this generally occurred only when the children were in Customary Care of the grandparents. The family first came to the attention of the CAS when Janice's older brother stopped residing in the family home, and began living in a vacant residence inhabited by solvent sniffers. He ultimately was apprehended and brought into care of the CAS.

Janice was brought to the attention of the CAS by her mother, who was living with her common-law and not residing in the home where Janice lived with her grandparents. Her mother reported that Janice had become addicted to solvents, which she began using at 10 years of age. Her mother stated that she could not look after her. Janice was picked up by police and lodged in the police cells overnight at 10, 11, 12, and 13 years of age. When she was 13, she was apprehended 6 times for public intoxication due to solvent abuse from gasoline sniffing. She was taken into care and placed in several different foster homes in Sioux Lookout, Kenora, Poplar Hill, and Wabigon until placed at the Selkirk Healing Centre in Manitoba from August 2003 until February 2004. Janice returned home under a Customary Care Service Agreement involving extended family members and community resources.

In May of 2004, at 12 years of age, Janice was found by her grandmother hanging in their home by a tee shirt and was cut down by an uncle. She was brought to the Pikangikum Nursing Station by her family. There she reported that this was in response to the death of her best friend by suicide two weeks before. She was also one of 8 girls who had made a suicide pact. During the interview, she ran out of the Nursing Station, and was found by police 2 hours later. When brought to the Nursing Station, she was high on gas and therefore, sent to jail for the night to detoxify and return to the clinic for a reassessment in the morning. This was reported to Tikinagan Child and Family Services. She was ultimately transferred to the Sioux Lookout Hospital, admitted with a diagnosis of suicide attempt, substance abuse (gasoline) and behaviour problem. She was referred to Nodin Child and Family Intervention Services, and ultimately, to a treatment centre in Saskatchewan.

Janice was engaged in high risk behaviour. She was sniffing gasoline, staying out all night and not attending school. She was charged with assaulting another girl at 14 years of age. It was reported that she pushed the girl to the ground and kicked her in the face. She claimed to have no recall of the event. She was placed in care from May 2004 until May 2005. While in care, she was referred for treatment to the White Buffalo Treatment Centre in Prince Albert, Saskatchewan from May until August 2004, and in the Selkirk Healing Centre in St. Norbert Manitoba from August 2004 until March 2005. Janice returned to Pikangikum in March 2005 to live with her mother who was then residing with her grandparents.

In June 2005, a family services worker observed her mother intoxicated and unconscious on the floor of the home. As a result, Janice was placed at Mary Homes in Orleans, Ontario from July until September 2005. In October 2005, the Chief requested that Janice be removed from the community for beating up her grandmother. She was placed in care again from October 2005 until April 2006. She then returned to her grandparents' home.

In February 2007, Janice was assaulted by her boyfriend at 15 years of age. She

smelled of gasoline when brought to the Nursing Station. There was a concern that she was pregnant. That same year, she was involved in a very serious assault and charged. Apparently, she critically injured another girl by stabbing her with a knife. She was arrested and charged with aggravated assault and remanded to the Kenora District Jail. She was released on an undertaking to keep the peace. Janice was admitted to Portage Youth Centre in March of 2007. Janice returned home, and her case file was closed with the Tikinagan Child and Family Services in October 2007. It was assumed that she lost the suspected pregnancy, but the details are unknown. She had repeated pregnancy tests when followed by Tikinagan, and had tested positive for a sexually transmitted disease.

The following year, Janice was arrested for assaulting her boyfriend. Two weeks following that arrest and pending a court date, she hanged herself.

Janice does not appear to have been seen by a counsellor while in Pikangikum, or to have had a psychiatric diagnosis aside from solvent abuse. She was not engaged in any form of ongoing therapy, and abused alcohol and solvents until the day of her death.

The Social Challenges

The Pikangikum First Nation is a remote community approximately 100 kilometres north of Red Lake. It can only be accessed by winter roads across Lake Pikangikum, or by aircraft as it is a fly-in community. It has approximately 2,400 residents, with a high birth rate. Teen pregnancy is common, and about 70-90 babies are born there each year.

There are approximately 450 homes in the community. Of these, 340 have no indoor plumbing or running water. The school, government buildings, and 43 houses are connected to a sewage lagoon. A water treatment system exists that is 16 years old. Through underwater pipes, it delivers water to distribution posts where people collect their drinking water in containers.

The community is not connected to the hydro grid. Power in the community is at its capacity, is diesel generated, and can be unreliable. Efforts are being made to connect to the grid.[8] In 2008, there were 170 jobs in the community, with 50 held by persons from outside the community such as teachers and nurses. The 180 jobs are dedicated to teaching (50); Band office (40); health (30); buildings, renovation (20); trades, roads, power, IT (20); and the White Feather Forestry Project (10). There are 542 heads of households receiving social assistance. "Virtually all of the Band's financial resources come from the Federal Government."[9]

Pikangikum is an impoverished, isolated First Nations community where basic necessities of life are absent. Running water

[8] North South Partnership for Children and the Pikangikum Community Members Participatory Assessment of Pikangikum, February 2008, p. 12.
[9] Ibid., p. 14.

and indoor plumbing do not exist for most residents. Poverty, crowded substandard housing, gainful employment, food and water security are daily challenges. A lack of an integrated health care system, poor education by provincial standards and a largely absent community infrastructure are uniquely positioned against the backdrop of colonialism, racism, lack of implementation of self-determination and social exclusion. These all contribute to the troubled youth, who appear to exist in a dysphoric state, caught between the First Nations traditions and cultures of their forefathers, and contemporary society which they are poorly equipped to navigate and engage.

"Many Nishnawbe-Aski young people are struggling with questions of who they are and where they belong. They are exposed to lavish lifestyle through the media, while attending urban high schools, and when travelling to larger centres; but the living conditions of the families and communities leave them with only the reality of extreme poverty. They are called "Indians" but they know that they are not "Indians." They know that their lifeline should be connected to the land and its resources, but nothing in the mainstream education system or the media helps them build this connection. They wonder who they are or why they exist. Coupled with the physical, emotional and/or sexual abuse that has become intergenerational as a result of residential schools and loss of identity, it is not surprising that some young people decide it is easier to leave this world than to live in it. Suicide comes to be a viable alternative when there seems to be no hope of finding help or relief from an unending cycle of poverty and abuse: social, racial, physical and sexual."[10]

[10] Horizons of Hope: An Empowering Journey. Youth Forum, Final Report, Nishnawbe-Aski Nation Youth Forum on Suicide, 1996, p. viii-ix.

An environmental scan of the First Nation is well captured by the report of the North South Partnership for Children. That report stated, "The community experiences significant social, health, infrastructure, economic, capacity, and governance deficits. These deficiencies are not minor. They are linked, they contribute to and compound each other and they are not susceptible to quick fixes."[11]

The Review of the Deaths of the Youth

Striking characteristics and details emerged as a result of this review:

- The suicides occurred largely in clusters.
- The youth were very young when they took their lives, many being less than 15 years of age.
- All of the deaths were due to hanging.
- None of the children had sought help from a trained professional in the month before they died.
- Many had a history of mental health problems.
- Almost all of the children were solvent abusers.
- Over half of the children had a history of exposure to suicide in their families, including parents and siblings.
- School engagement and attendance appears to have been very limited.
- Domestic violence was common in their families.
- Substance abuse in parents was common.
- Being victims of violence, and/or perpetrating violence on others were common occurrences.

Most troubling is the solvent abuse problem. In Pikangikum, young girls in grades 3 and 4 recently self-reported that as many as 27%

[11] Ibid., p. 14.

had tried sniffing gasoline. Exact numbers are unknown, and it is estimated that there are as many as 300 solvent abusers in the community of 2,400.

Healthcare

Healthcare services to First Nations on reserve are provided by a myriad of providers, federally and provincially, in multiple jurisdictions. For example, in the Pikangikum Nursing Station, AMDOCS provides different physicians, although continuity is attempted. When a patient is sent out of the community, a different and usually unknown physician will assume the care of the patient in hospital, usually in Sioux Lookout. There is no case management. There is no electronic file which is readily reproducible and transferable between healthcare providers involved in the circle of care.

Healthcare is provided in a fragmented, chaotic and uncoordinated system. Also, there are clear gaps in service, and in some cases, qualified people to deliver that service. The community has arguably the most significant mental health and substance abuse issues in the entire province. The Pikangikum Health Authority has evolved a model which is seeking to integrate services through the Social Health and Education Working Group. The Health Authority's efforts to provide for integration of services represent a promising path.

However, several key themes emerge:

1. Jurisdictional issues exist between federal and provincial providers, and these issues can impact service provision.
2. Accessing necessary programs and services can be challenging in this remote First Nations community.
3. Even if a service is reported to exist within the community, the benefit to the individual client/patient at the community level may be minimal to nonexistent. (See solvent abuse and NNADAP programs).
4. This First Nations community has unique mental health and substance abuse issues amongst its youth.
5. Services are best characterized as existing in silos with lack of integration and coordination.

Food costs are extremely high in Pikangikum, particularly for fresh fruit, vegetables, and fuel.

Education

The school burned down in 2007, and has yet to be replaced. A cluster of deaths by suicide occurred shortly after the destruction of the school. The community needs a school with all of the opportunities a fully functioning physical plant has to offer. Indian and Northern Affairs Canada (INAC) has reportedly committed to building a new school.

Truancy remains a significant problem in the community. There are currently 520 children enrolled in school for 2010-2011. There are another 300-500 children of school age who are likely eligible for school. The exact number is unknown. Children not attending school will experience increasing isolation from mainstream Pikangikum society, lack of programming and healthy activity, and could easily fall into the lure of solvent abuse. As noted by First Nations' leadership, children need to attain education to have marketable skills and therefore, hope for the future. They must attend school to do this. The

Pikangikum First Nation needs to meaningfully decide the role their school should play in the lives of their children.

Pikangikum graduates just 8 or 9 youth from a basic high school stream each year. These children are largely not equipped for post-secondary education, and in fact, none of the youth who graduated in 2009 sought college or university educations following graduation. Children who demonstrated academic aptitude were previously given the opportunity to obtain a high school education at a First Nations' High School located in Pelican Falls. These children have been identified as bright and motivated, and might have the ability to obtain a college or university education, if exposed to a quality high school education. Currently, the only option is to obtain their education at Pikangikum, where the basic high school stream is offered. The Office of the Chief Coroner was told that the privilege of attending an advanced First Nations' high school has recently been revoked by the Northern Nishnawbe Education Council (NNEC). If possible, it should be re-instated. Pikangikum needs its children and future leaders to be exposed to the best high school educational opportunities.

The funding disparity that exists between what the federal government spends and what the Province of Ontario spends per student leaves First Nations children receiving education on reserve at a significant disadvantage. Most concerning, they represent the very students at greatest need within the province. This should be addressed. The provincial Ministry of Education also has genuine expertise in the delivery of education. The constitutional and treaty obligations resulting in the fiduciary responsibilities of the federal government to provide education to First Nations on reserve should not be relinquished. However, serious consideration should be given to expanding and utilizing the expertise of the province in the delivery of education. This might include the complete transfer of this responsibility, from federal to provincial jurisdiction with funding provided by the federal government.

The creation of a First Nations school board for the north, managed and operated by the First Nations on behalf of their own children and youth, should be considered. The school board would have the ability to create its own opportunities for enhanced student achievement, provide models for the effective stewardship of resources, and delivery of education uniquely First Nations respecting culture and tradition.

The Pikangikum Education Authority should create improved health opportunities for young women and their children, including a Day Nursery to care for the children of young women who deliver infants in their teenage years so that they can have the opportunity to continue their educations. Full-day kindergarten would be of great benefit to the community, given the large number of births each year, and the knowledge that children graduating from the Pikangikum School are actually 3 years behind mainstream Ontario students.

Sandy Lake First Nation High School Gymnasium.
http://www.sandylake.firstnation.ca/gallery

Policing Services

The OPP has a long history of providing policing to Pikangikum and in supporting the officers who have worked there. Pikangikum

is currently policed under the Ontario First Nations Policing Agreement (OFNPA) by First Nations constables employed by the community and supported by the OPP. Pikangikum is the busiest First Nations community in Ontario in terms of policing. There were approximately:

- 4,700 calls for service in 2009
- 3,000 lock ups per year, and up to 60 persons in cells at one time is not uncommon

Pikangikum has a complement of seven First Nations constables under the OFNPA and one position through the five-year Police Officer Recruitment Fund (PORF). The community is rarely able to maintain its full First Nation constable complement and even if the designated staffing level could be maintained, the community would be critically short of police officers, based on the number of calls for service.

The community wants to see its First Nations constable positions filled with qualified candidates and the OPP supports this position. Recruitment and retention of First Nations constables is difficult given significant challenges ranging from issues of workload, remoteness, housing, accommodation shortages, and the challenges of the stresses inherent where these constables have to police their neighbours, and at times, their families.

The community has a high crime rate compared with other First Nations communities. The OPP has a stabilizing effect and diminishing their capacity to respond has the potential to lead to an escalation of chaos and significant harm, particularly to those who are most vulnerable, such as children, youth, and the elderly. There is a need for police to be allowed to exercise their policing expertise in the absence of local Pikangikum First Nation political interference.

The Provision of Child Welfare Services

Provincial child welfare services were extended to Indian Reserves following major changes to the Indian Act in 1951. The changes included a section (now Section 88) that provided for the application of provincial laws of a general nature to “Indians on reserve.” This change allowed Children’s Aid Societies (CAS) to apprehend children from Indian Reserves. As a result of this change, there were exceedingly large numbers of Indian children who were taken into the care of a CAS. Many of these children were eventually placed for adoption with non-aboriginal parents around the world. This is generally known as the “60’s scoop” even though it occurred throughout the period from 1951 to about 1980. For example, in 1980 there were just over one thousand Indian children in the care of CAS’s, with more than half of them in the care of Kenora-Patricia Children’s Aid Society.[12]

Aboriginal leaders thought it important to stop this process and take control of child welfare themselves. They wanted to stop the loss of children, and the destruction of the family, the community social fabric, and culture that occurred through this process. In 1981 the Chiefs of Ontario Indians passed a Resolution denouncing these laws and calling for a means for Indian communities to look after their own children. In 1984 the Child and Family Services Act was amended and the new Part X of the Act allowed for the creation of First Nations child welfare authorities and societies. Not long after, several incorporated groups were recognized under Part X as “child welfare authorities” and later, as societies.

When parents drink, they sometimes abandon, neglect, and abuse their children. When this occurs, CAS workers step in to care for the children. The result of this

[12] Brubacher, Maurice. Coming Home, The Story of Tikinagan Child and Family Service. Sioux Lookout, Tikinagan Child and Family Services, 2006.

involvement is that the number of aboriginal children across the north that are in care is much higher than the provincial average. There are a disproportionate number of Aboriginal children in care (CIC's) in all areas of Ontario. Seventeen per cent (17%) of all children in care in the province are of Aboriginal descent. The rate per hundred thousand of Aboriginal children in care in Ontario is 2,875, while the rate for all children in Ontario is 640. Thus, the rate for Aboriginal children is about four and a half (4.5) times the provincial rate.

Tikinagan Child and Family Services is a First Nations children's aid society required to provide service to extremely challenging clients in Pikangikum. The clients themselves often do not have even the basic necessities of life such as adequate housing, running water, and safe, affordable food sources. Added to this, is the complexity of trying to administer child welfare services where the client may not speak English, in a community that can only be accessed by airplane, in poor weather conditions. Tikinagan has encountered great difficulty in identifying and retaining adequately trained staff. Resources, both human and fiscal, have been traditional areas of great tension. The Ministry of Children and Youth Services should ensure that children's aid societies providing service to First Nations communities, have unique and adequate funding to provide that service equivalent to provincial standards, or as closely approximating the level of service provided in other jurisdictions in Ontario as is reasonably possible.

Tikinagan is but one of a few available service providers to the community. They find themselves in the unenviable position of trying to mitigate a series of compelling difficulties such as domestic violence, crime, parental substance abuse, or solvent abusing suicidal youth, with limited to no community resources or supports to assist them. They have become the default provider for many absent services, which are easily accessible and exist in southern Ontario.

Currently, there are approximately 200 open files with approximately 80 children in care in Pikangikum, a community of 2,400. Lack of adequate housing and overcrowding has created a situation whereby children in care must be sent out of the community to foster homes far away. This has been a source of ongoing tension between the First Nation, Chief and Council and the Society.

Social Determinants of Health

The social determinants of health are the economic and social conditions under which people live which determine their health. A contemporary Aboriginal view of the social determinants of health considers the following:

- Proximal determinants of health include health behaviour, physical environments, employment and income, education, and food security.
- Intermediate determinants of health include health care systems, educational systems, community infrastructure, resources and capacities, environmental stewardship, and cultural continuity.
- Distal determinants of health include colonialism, racism and social exclusion, and self-determination.

The tangible and readily achievable goals would include such rudimentary items such as having running fresh and safe water delivered to their homes, hook-ups to a viable and safe sewage system, and linking to the power grid. This would address such issues of lack of water in homes, the use of pit privies for toilets, and reliance on a diesel fuel generated power system. The most important social determinant of health, however, is education. There is no greater barrier to improving the health, mental health, and suicide rate in Pikangikum than through its education system. Many of the children do not go to school. Many of these children sniff solvents. Those that do go to

school are not being given the quality of education which prepares them for the contemporary world outside of Pikangikum. Almost none of these children seek post-secondary education.

Summary

The children and youth of Pikangikum have been taking their lives at an extraordinary rate for a number of years. This death review focused on 16 of the deaths that occurred between the years 2006-2008. The themes that emerged from a review of the circumstances of the deaths and the lives of the youth, was not a story of capitulation to death, but rather, a story of stamina, endurance, tolerance, and resiliency stretched beyond human limits until finally, they simply could take no more.

This review has endeavoured to examine, as an alternative to an inquest, the deaths of the youth, and the societal factors that contributed to the deaths. The mental health and well being of these children and youth is a complex, multifactorial integrated response to many factors in their lives, including social determinants of health, which consists of amongst other factors, the poverty and deprivation in which they exist.

The tragedy of the deaths of these children and youth presents a universal challenge. Meaningfully addressing these deaths goes to the leadership of all who are involved at a community level, regional level, provincial level, and federal level, both for First Nations and non-First Nations Canadians.

"But we also know that the health of any society or collectivity depends upon a series of vital processes that allow individuals to grow, discover their identity, and learn the skills and ways of knowing their people. When these processes have been disrupted or are absent, the young people of the community not only are extremely vulnerable to negative pressures from the outside but can become so demoralized that they also commit themselves to a kind of death. "Where there is no vision, the people perish (Proverbs 29:18)."[13]

[13] Shkilnyk, Anastasia M. A Poison Stronger Than Love, The Destruction of Ojibwa Community. Yale University Press, New Haven, 1985, p. 231.

Inquest:

A Youth Suicide Due to Hanging

Excerpt from:
VERDICT EXPLANATION

By Dr. A. E. Lauwers

Sara Carlin aged 18 years and 9 months died on May 6, 2007. She was found hanging at her home. At the time of her death, she was 18 years and 9 months of age. She had been prescribed and taking the medication Paxil for some 14.5 months. Toxicology performed as part of the investigation indicated that she had consumed a large amount of alcohol in the hours immediately before her death, and cocaine sometime in the 48 hours preceding her death. An additional finding was evidence of the use of tetrahydrocannabinol (THC) the main psychoactive substance arising from the cannabis plant.

Sara had been a talented young woman. She had achieved academic excellence in high school, where she was an honours student and received an entrance scholarship to the University of Western Ontario for September 2006. She was an athlete competing in hockey at high school, although she did not play in her senior year. In addition, she was musically inclined and would entertain her family by singing and playing the piano. She enjoyed many friendships, and those friends described her as bright, beautiful and fun to be with.

On February 20, 2006 she presented to her family physician with a history of anxiety and episodes which included her hands getting clammy, shortness of breath and sweating. She was unable to control the episodes which she was experiencing 2 to 3 times per day lasting 5 to 10 minutes each. In addition, she was sleeping poorly with nightmares, and was depressed. She was diagnosed with panic/depression and prescribed Paxil 10 mg daily and Ativan 0.5 mg. According to her family physician, he did not fully discuss the potential side effects of the medications, but did instruct her to return to the office should she experience any untoward changes. The indication for the use of Paxil was anxiety and depression, although the anxiety symptoms were more prevalent at the time of her presentation. Sara was 17 years and 7 months of age when the Paxil was prescribed.

The drug Paxil had been the subject of a Health Canada Advisory in July of 2003. Her family physician had been aware of this Advisory. It communicated several issues including:

- Paxil should not be used in children under 18 years of age;
- In paediatric patients, it was contraindicated for the treatment of Major Depressive Disorder (MDD) as it lacked efficacy;
- There was evidence arising from 3 paediatric placebo-controlled trials in MDD of increased risk of suicidal thinking, suicide attempts or self-harm.

She was seen again by her family physician on March 20, 2006. She reported that the Paxil was helping, and she was having less frequent panic attacks. The Ativan had not helped, and it was therefore discontinued. She was started on Imovane 5 mg. at night for sleep. The dose of Paxil was increased to 20 mg daily, and she was referred to a General Practitioner-Psychotherapist. When seen by her family doctor in follow-up on April 20, she reported that Paxil was helping. She reported increased energy and focus, was more “into” school, felt happier and was able to stop the panic attacks. She also reported less crying.

On July 14, 2006, Sara was seen for an assessment by the General Practitioner-Psychotherapist (GPP). Sara self-reported 2 years of sadness associated with low energy, nightmares, insomnia, low

concentration, low motivation, but no suicidal ideation. She reported taking Paxil which had helped her immensely. She also reported using ethanol, drinking 26 ounces on one weekend night for the prior two years. She also reported smoking pot once every two months. While there, she completed an Adult Depression Screening Form. Some of the items she reported feeling were:

- "I am sad all the time"
- "I dislike myself"
- "I have thoughts of killing myself, but I would not carry them out"

Symptoms of depression and substance abuse antedated her use of Paxil by approximately 18 months. Sara did not return for therapy with the GPP.

Sara began university in September of 2006. She struggled as she was affected by mononucleosis. According to her roommates, she missed classes, but continued to be active in social events ("partying"). On September 26, she presented to the office of her family physician, and was seen by his associate.

The dose of Paxil was increased to 30 mg daily. In a note that was found following her death, she wrote on October 12, 2006:

"I am confused about life. I don't know why I am here or who I am……The world has robbed me of my strength and passion and will to live and survive. I feel you have to numb to survive. Everything seems meaningless, I need to find peace. I need to find purpose. Where do I look? I need answers…"

She was seen again by her family physician's associate on October 25. She reported wanting to quit school, and was very anxious, but not suicidal. Paxil was increased to 40 mg, the Imovane was stopped, and Trazodone was prescribed to aid in sleep.

Sara returned to school. On the morning of November 2, 2007, her roommates called an ambulance due to her slurred speech and behaviour. She was seen in the hospital emergency department, where she was diagnosed with substance abuse. She had ingested cocaine, alcohol and Imovane. She was discharged to follow up with her family doctor. Her family physician was not provided with the medical record of the visit, nor was he contacted. One of Sara's roommates contacted her family, and they promptly came to London and moved her back to the family home in Oakville.

Once in Oakville, Sara was referred to ADAPT (Alcohol, Drug and Gambling Assessment Prevention and Treatment) Services in Halton following contact by the family with her family physician's associate. Sara was seen there on November 30, 2007. She self-reported use of alcohol, cannabis, cocaine, crack, ecstasy, hallucinogens and tobacco in the past 12 months. She reported initiating cocaine use in the summer of 2006. On December 6, the staff at ADAPT cancelled her appointment, and she did not return for the appointment re-scheduled on December 11, 2007. She was not seen by the service again, although her parents believed she was actively receiving care.

On December 12, she was seen again by her family doctor. On that visit, she reported that she was weaning herself from the Paxil as her parents had thought taking Paxil was not a good idea. Her family doctor discouraged this and recommended that she resume her dose at 20 mg. daily. She was seen for a final time on January 30, 2007, some 3 months before her death.

Sara had a very active social life. According to a former boyfriend, she had not been depressed when they first met. She began drinking at 15 years of age. Drugs were not a part of her life at that time. He broke up with her definitively in approximately September 2006. He was aware that she was using

drugs such as cocaine and ecstasy. The reason for terminating their relationship was his belief that her behaviour had changed and he could no longer trust her. Another friend described an episode in which she witnessed Sara attempting to use cocaine while a guest in her home and stopped her. In addition, she searched her purse and found several ecstasy tablets. In 2007, Sara lost her part time job with an ophthalmologist.

In the weeks before her death, she began dating a young man who stated that their relationship involved daily drinking. He described "pre-drinking" which would involve consuming alcohol before going out, drinking at a bar, and then "post-drinking" until they "blacked out". On May 3, she could not locate her Paxil. Her father filled a prescription for 120 tablets of 20 mg strength on May 4, 2007.

In the days preceding her death, Sara and her boyfriend had an argument. In anger, he sent her a text message on the morning of May 5, the day before Sara died; a text message that he deeply regretted. He told her to "get dead". However, about 6.5 hours later, he apologized and Sara thanked him for the apology.

On May 5, the evening prior to her death, Sara had several friends over to her home. They were going out for the evening, but first they were "pre-drinking", that is, getting together and having a few drinks before going out to the bar. She spent the night out with her friends, and called her mother well after midnight on May 6th. A friend gave Sara a ride home, with a few stops along the way. One of her text messages indicated that she was planning to get together with a group of people to play baseball later that day. She was dropped off and went into the house at approximately 05:30 am. Her room was in the basement.

On Sunday, May 6, 2007, one of Sara's friends came over around lunch time and went into Sara's room for a brief moment before leaving the house. She did not see Sara. Later in the afternoon, her family became concerned when they could not reach her. Eventually, her father went down to the basement. Part of the basement was unfinished and was dark. Mr. Carlin plugged in a light and discovered Sara hanging, obviously dead. He called for help to get her down, placed her on the floor to await the arrival of the paramedics. A bottle of Paxil was found at the scene and it appeared that 6 (six) 20 mg tablets were missing. Based on the time at which she was last known to be alive, it appeared that she may have consumed *up to* 6 tablets of 20 mg in approximately 36 hours preceding her death. A subsequent autopsy was conducted and the forensic pathologist's opinion as to the cause of death was:

"Immediate Cause of Death: Hanging by ligature (electrical cord) while under the influence of cocaine and ethanol. Other Significant Conditions: Therapeutic levels of Paroxetine."

Thirty-one witnesses gave evidence over ten days, and thirty-one items were entered as exhibits. The Jury deliberated for approximately 12 hours over two days to arrive at its verdict.

Verdict

1. **Name of Deceased:**
   Sara Carlin
2. **Date and Time of Death:**
   May 6, 2007
3. **Place of Death:**
   Oakville, Ontario
4. **Cause of Death:**
   Hanging by ligature while affected by depression, cocaine and ethanol.
5. **By What Means:**
   Suicide

The following is a brief summary of some of the key recommendations.

A Provincial Drug Information System

Recommendation #1

The Ministry of Health and Long-Term Care (MOHLTC) should develop a Drug Information System (DIS). Amongst the objectives of the DIS would be to promote:

1.1. patient safety in the prescribing and dispensing of drugs.
1.2. collection and compilation of data in a single repository for all drugs dispensed for all Ontarians.
1.3. research into drug and patient safety.

Recommendation #2

The Drug Information System should track and monitor all drugs dispensed in Ontario, regardless of who is paying for the prescription. (e.g. government, private payers, or self-pay)

Coroner's Comments

According to the Director of Program Services of the Ministry of Health and Long-Term Care, approximately 3.2 million Ontarians are eligible for Ontario Drug Benefit (ODB). Of those who are eligible, 80% are greater than 65 years of age, and 20% are less than 65 years of age. In Ontario, unlike other provinces with comprehensive tracking capacities, only drugs paid for by the Ministry of Health and Long-Term Care under the Ontario Drug Benefit Program are systematically tracked. Since those utilizing ODB represent a small number of the total persons obtaining prescription drugs, little information is available on the use of drugs by those whose prescriptions are paid for outside the ODB.

A Provincial Suicide Prevention Strategy

Recommendation #4

The Ministry of Health and Long-Term Care (MOHLTC) should commit to developing a provincial-wide suicide prevention strategy as has occurred in other provinces such as Alberta.

Recommendation #5

The objectives of the provincial-wide suicide prevention strategy should include:

- Enhanced mental health and well-being for Ontarians.
- The education of the public to de-stigmatize mental health disorders, including depression and substance abuse disorders.
- Improved intervention and support for Ontarians affected by depression and substance abuse.
- Improved intervention and treatment for those at risk of suicide.
- Increased efforts to reduce access to lethal means of suicide.
- Increased research activities in Ontario on suicide, suicidal behaviour, and suicide prevention.
- Improved suicide and suicidal behaviour-related surveillance systems.
- Inform and educate the media into strategies when reporting deaths due to suicide to prevent "copy cat" suicides from occurring.

Recommendation #6

Strategies in the provincial-wide suicide prevention strategy should be humane, effective, caring and;

- Evidence-based.
- Respectful of community and culture-based knowledge.
- Inclusive of research, surveillance, evaluation and reporting.
- Reflective of evolving knowledge and practices.

Recommendation #7

The Ministry of Health and Long-Term Care (MOHLTC) of Ontario and the Government of Ontario should commit to supporting the development of a National Suicide Prevention Strategy for all Canadians.

Coroner's Comments

Dr. Links provided evidence that in 2004, Canadian figures indicated that there were 3,613 total suicides occurring in all ages, with 238 occurring in youth between the ages of 10-19. He provided a definition of suicide-related behaviour by Silverman et al. 2007 as "…a self-inflicted, potentially injurious behaviour for which there is evidence (either explicit or implicit) that:

(a) the person wished to use the appearance of intending to kill himself/herself in order to attain some other end; or,

(b) the person intended at some undetermined or some known degree to kill himself/herself".

He also presented the results of study called the Youth Risk Behaviour Survey (2001) in which youth reported their suicide-related activity in the previous year. This revealed the following very troublesome findings:

- 19% of high school students considered attempting suicide in the previous year
- 15% had made a plan in the previous year
- 9% reported a suicide attempt in the previous year

Health care is delivered by provincial governments. Evidence was heard that Canada was one of the few developed nations without a national suicide prevention strategy. The first national strategy was initiated in Finland in 1986, some 24 years ago. Other countries that have followed include Norway, Finland, Slovenia, Sweden, France, Australia, Ireland, New Zealand, England, Scotland and the United States.

Reporting of Serious Adverse Drug Reactions

Recommendation #12

All colleges legislated under the Regulated Health Professions Act, 1991 should require mandatory reporting to Health Canada by its members of serious drug-related adverse events as defined by Health Canada:

"A serious adverse drug reaction is defined as a noxious and unintended response to a drug, which occurs at any dose and requires in-patient hospitalization or prolongation of an existing hospitalization, causes congenital malformation, results in persistent or significant disability or incapacity, is life-threatening or results in death. Important medical events that may not be immediately life-threatening or result in death or hospitalization, but may jeopardize the patient or may require intervention to prevent one of the outcomes listed above, may also be considered serious".

Recommendation #13

The Public Health Branch of the Ministry of Health and Long-Term Care and the Ministry of Education. These two ministries should develop an educational program regarding mental health and substance abuse for the adolescents and youth of Ontario's school system.

The circumstances of the death of Sara Carlin as presented at the Inquest may be of assistance in the development of this program. The program should seek to inform the adolescents and youth in its schools that suffering with mental health disorders including depression and anxiety is common at their age. In addition, this program should:

- seek to de-stigmatize these illnesses, and
- provide information that these conditions are treatable, and
- emphasize the importance of abstinence from alcohol and other substances, as utilizing these may

contribute to mental health disorders and precipitate suicidal ideation and suicide.

Coroner's Comments

Dr. Paul Links, a Professor of Psychiatry at the University of Toronto and the current Arthur Sommer Rotenberg Chair in Suicide Studies was asked to provide an opinion. He gave her diagnoses as major depressive episode, possible panic disorder with agoraphobia, and cocaine abuse.

He stated, "Acute use of alcohol and cocaine can contribute to the risk of suicide in several ways. Alcohol intoxication and cocaine withdrawal can precipitate an acute dysphoric state, increase psychological distress and can trigger acute suicidality. During intoxication, the individual may be more disinhibited and participate in high-risk behaviour including suicide behaviour or demonstrate constricted cognition which impairs the individual's problem-solving".

He went on to say:
"To summarize, in the case of Ms. Carlin, antidepressant therapy was indicated for the individual and there is not much evidence to suggest that antidepressants induced her suicide.

- First, the timing of the suicide event is more than a year after her first exposure to Paxil which is not in keeping with the usual time course.
- Second, the patient did not appear to evidence any of the possible risk factors mentioned above for antidepressant induced suicidality.
- Third, none of the above mechanisms seem to explain the patient's suicide.

Ms. Carlin may have been without medication for 3-4 days in the week prior to her death. Withdrawal from Paxil has been implicated as a possible mechanism for increased suicidality. However, the information provided did not suggest that Ms. Carlin suffered from the usual triad of symptoms seen with withdrawal including neurological symptoms, gastrointestinal upset and worsening anxiety and depression.

Overall, a clear understanding of what events precipitated her suicide may never be known, but antidepressant induced suicidality does not seem consistent with the evidence available."

A number of young contemporaries of Ms. Carlin gave evidence at the inquest. Two issues that arose from their evidence was the amount of alcohol abuse in the young people with whom she associated, and the second was the prevalence of cocaine abuse. When describing their patterns of alcohol consumption, they utilized terms such as pre-drinking, drinking, and post-drinking, until they "blacked out".

Evidence was provided by Dr. Links about the prevalence of suicidal behaviour in adolescents;

- 19% of high school student had considered suicide in the past year
- 15% had made a plan in the past year
- 9% reported a suicide attempt in the past year

Lastly, Dr. Links provided the following statement from his expert opinion:

> *"The important issue to understand is that **the risk of suicide is much more strongly related to cases of untreated depression** rather than anti-depressant induced suicidality."* (emphasis added)

Shaken Baby Death Review Committee: Ministry of the Attorney General

Background

On March 14, 2011, the Attorney General for the Province of Ontario released the Report of the Shaken Baby Death Review Committee. This Committee was struck in December 2008, following the release of Justice Stephen Goudge's *Report on The Inquiry into Pediatric Forensic Pathology in Ontario*. In response to a recommendation provided in the Report, the Attorney General initiated a medical/legal review of pediatric cases that resulted in criminal convictions based on evidence of abusive head trauma or "shaken baby syndrome."

In light of the significant evolution of pediatric forensic pathology relating to shaken baby syndrome and pediatric head injuries over the previous 20 years, this review was undertaken to determine whether there were any concerns with convictions registered where these injuries played a significant role.

Evolution in Science

Medicine is not a static field. Medical science continues to evolve following new discoveries, technological advances and scientific research. This leads to increased knowledge and may lead to recognition that previous medical views or diagnoses should be questioned or revised. Both pediatrics and forensic pathology are medical subspecialties and therefore have, and will, continue to evolve.

Shaken Baby Syndrome (SBS) has been defined by the presence of a constellation of medical findings that indicate head injury in a child caused by violent shaking.

These findings (characterized in the United Kingdom as the "triad") are:

- Bleeding in the back of the eyes (retinal hemorrhages)
- Bleeding over the surface of the brain (subdural hemorrhages)
- Low oxygen injury to the brain(hypoxic-ischemic encephalopathy)

As a result of this evolution, the evaluation and approach when the constellation of these findings is present has changed. With enhanced knowledge resulting from research and medical literature science progresses. This progression may lead to controversies as doubt may arise about previously held opinions.

Clinicopathologic studies have consistently corroborated the belief that the presence of the three medical findings thought to be diagnostic of inflicted traumatic head injury may result from shaking and/or impact. Additional clinical experience and study have lead to increased understanding about the range of potential mechanisms of how a head injury can occur, including for example, falls.

Controversy Surrounding the Interpretation of the Constellation of Findings

Studies have demonstrated that the amount of force generated by direct head impact is greater than by shaking alone. Other studies have questioned whether a person would be able to generate adequate force to cause a fatal head injury from shaking alone. Biomechanical studies do not clearly support shaking as a mechanism of injury but confessional data does.

Publications of neuropathologic reviews of brain tissue from SBS deaths have demonstrated that low oxygen cellular injury was found more often than traumatic cellular injury raising a question about the amount and type of force involved. Some have suggested that injury to the upper spinal cord could cause interruption of breathing causing low oxygen brain injury.

Experience and study have enhanced knowledge about the clinical presentation of a child following a head injury. Low oxygen brain injury (hypoxic ischemic encephalopathy) can be accompanied by varying clinical presentations, at times, limiting the ability to identify or specifically time the injury event.

Many experts believe that certain patterns of retinal hemorrhages correlate directly to abusive head trauma. Others, however, caution against this conclusion because the exact mechanism is as yet, unknown.

Research and biomechanical modelling has enhanced acceptance that children may at times, suffer significant head injuries from falls that previously may not have been accepted as potentially injurious or fatal.

There is increased recognition that other disease processes may mimic the findings described in cases thought to be traumatic head injuries. Other sources have proposed alternative mechanisms that may cause the classically described constellation of findings.

Certain conditions may make children vulnerable to suffer injuries. One example is the potential of repeat episodes of bleeding into areas of previous bleeding in the space around the brain. Some have proposed that a child may have suffered bleeding from a medical cause or traumatic injury and that this episode could predispose to additional bleeding at a later time potentially leading to death.

There are a number of areas of controversy surrounding the interpretation of the constellation of findings associated with SBS. Each case must be assessed thoroughly and individually on its own merits. Other possible explanations for the injuries must be considered.

Shaken Baby Death Review Committee: Process and Findings

The committee adopted a consensus-based approach and developed rigorous criteria to systematically review the medical and legal aspects of pediatric head injury cases that occurred between 1986 and 2006.

Based on an initial triage of 129 cases, the committee established that 48 required a more in-depth analysis. Of those, 10 cases were referred to an international medical panel of world-renowned leaders in forensic pathology, neuropathology and pediatrics to provide their expertise and views.

The committee identified four cases that gave rise to concerns based on reports prepared by an international medical panel and the facts and circumstances reviewed by the committee in each of these cases. The committee did not make any decisions about guilt or innocence in the cases it examined. The Attorney General provided the Committee findings to the Chief Prosecutor of Ontario, for review and to take appropriate action, including working with the defence counsel.

The complete report is available:
http://www.attorneygeneral.jus.gov.on.ca/english/about/pubs/sbdrt/sbdrt.pdf

PDRC and DU5C Future Directions

Since the last report of the PDRC in 2010 the following initiatives which were identified for consideration, are underway:

- The Office of the Chief Coroner (OCC) staff continues to liaise with staff at the Ministry of Children and Youth Services and the Child Welfare Secretariat to ensure ongoing support of the Child Death Review Process. This includes continued sharing of information on child deaths and PDRC recommendations throughout the year in real time, as they are produced.

- The propagation of a "blame free" culture to encourage an environment, which seeks to openly identify and reduce errors and omission. This is a fundamental principle and is the foundation of the manner in which the OCC interacts with CASs and other collateral service providers to children.

- The enhancement of public and professional awareness of the risks to infants of bed sharing and unsafe sleeping environments continues.

- Liaising with other provincial and international Child Death Review Committees to share resources and ideas continues.

- Presentations of the findings of the PDRC and DU5C reviews to various conferences and forums including consulting and assisting various CAS's in the development of best practice guidelines.

- Collaboration with the Public Health Agency of Canada, The Canadian Foundation for the Study of Infant Deaths, Registered Nurses Association of Ontario, and others regarding the provision of a consistent message on safe sleeping for infants continued.

- The continued provision of an expert, objective, unbiased and non-partisan transparent process to review deaths of children in Ontario. The goal is to enhance learning, recommend systemic changes as needed, and to reduce and prevent future child fatalities.

- The analysis of "Lessons Learned" from individual society internal child death reviews and sharing these lessons with the broader child welfare community continues.

- The identification of systemic issues in child safety and care with a plan to review them with inquests, where appropriate.

- The PDRC will continue to conduct further research into such areas as accidental deaths, bed sharing and risks to children, with consideration of publication of our results.

- A review of children's deaths due to drowning is well underway; a report with recommendations will be released before the summer of 2011.

Key Messages

- Many child deaths are preventable; child death reviews are about understanding and learning from the past to prevent similar events in the future.
- The safest sleeping environment for an infant is on its back in an approved crib with a firm mattress. Prevention initiatives directed at reducing unsafe sleeping are required more than ever.
- Natural and accidental causes are the most common reasons that children die.
- Vigilant supervision of young children could prevent many deaths classified as accident.
- Involvement with a CAS is not a factor in the vast majority of child deaths in Ontario; for those children who died while receiving CAS services, most deaths could not have been foreseen or prevented by a CAS.
- At any given time, child welfare agencies work with less than 1% of the population. The children who receive services are typically amongst the most vulnerable children in the community.
- Information sharing within and between agencies is critical for child safety, case management and investigative purposes.
- As the majority of children die while in the care of their families, prevention strategies and educational messages need to be aimed at the general public and parents, in particular.

Especially For Parents

- Small children require constant and close supervision; older children need your guidance and monitoring. Never leave a child unattended near water, including buckets and bathtubs.
- Cut foods into small sized bites for young children and ensure they do not have access to other choking hazards around the house, including in their toy boxes.
- The safest place for an infant to sleep is on its back, in an approved crib. Minimize or eliminate the amount of coverings or other items in the crib.
- Room sharing is recommended; once your baby has been cuddled and fed, place her/him back in the safest environment for sleep.
- Do not smoke around your children; if you do smoke ensure your smoking materials are placed out of reach of all aged children.
- For older children and young adults, ensure they are aware of the risks and safety recommendations for the use of seat belts, life jackets, and helmets.
- Develop and practice fire escape plans and ensure working smoke alarms are installed and maintained at all times.
- Keep up to date on current product recalls and safety recommendations in order to prevent injuries and/or death of children.

Committee Membership

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***Dr. Dirk Huyer became Chair of the DU5C in January 2011, replacing Dr. Lauwers.**

Acknowledgements

Thanks to the following individuals who assisted in the production of this report:

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To past and current members for their ongoing commitment and support in child death reviews

Ms. Rowena Cruz
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Staff at the Ministry of Children and Youth Services
Child Welfare Secretariat and Client Services Branch
Ministry Response to 2010 Themes and Recommendations

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