

Paediatric Death Review Committee and Deaths Under Five Committee Annual Report 2013

Office of the Chief Coroner for Ontario



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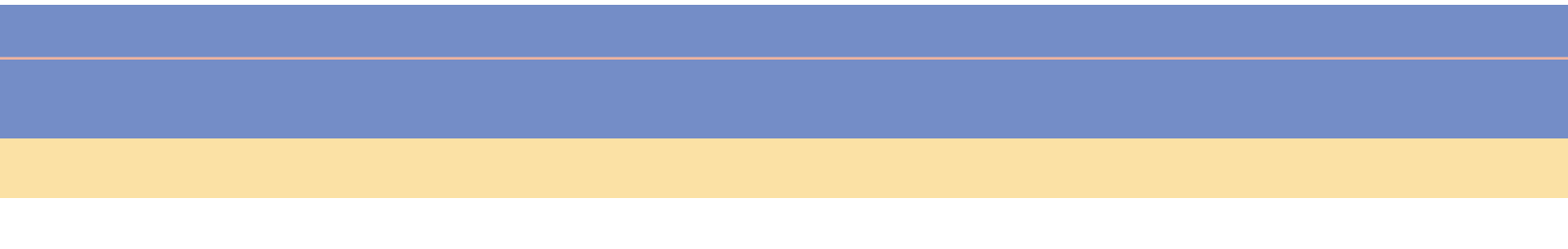




Table of Contents

Message from the Chair	1
The Office of the Chief Coroner and the Context of Paediatric Deaths in Ontario	3
Child and Youth Deaths in Ontario and Canada: Trends Over Time	3
Child and Youth Deaths in Ontario: Distribution Across Age Groups	5
Child and Youth Investigations: Manner of Death Across Age Groups	6
Deaths Under Five Committee (DU5C)	7
Introduction	7
Scope and Mandate	7
DU5C Review Process	7
Executive Team	8
Full Committee	8
DU5C cases reviewed in 2012	9
Summary of Executive Reviews in 2012	9
Summary of Full DU5 Committee Reviews in 2012	9
Total Cases Reviewed by the DU5 (Executive Team + Full Committee) in 2012	9
Analysis of findings	10
Determining the Cause and Manner of Death	11
Classification of Sudden and Unexpected Infant Deaths	13
Close to Consensus	14
Understanding the Manner of Death—Why are so many Undetermined?	14
Case Example - Category 1 - Natural Disease: Role of Ancillary Testing	15
Case Example - Category 1 – Homicide - Clinicopathologic Correlation	15
Case Example - Category 3 - Undetermined	15
Unsafe Sleep Circumstances-Determining the Role	16
Refining the Investigative Approach	17
Data Driven Public Safety	18
Paediatric Death Review Committee (Medical)	19
Review process	19
Limitations	19
Statistical Analysis for: Paediatric Death Review Committee (PDRC) – Medical	20
Analysis of 2012 Case Reviews PDRC (Medical)	21
Recommendations	22
Summary of 2012 recommendations made by PDRC (Medical)	23
Themes arising during medical reviews	24
Themes from 2012 case reviews	24
PDRC (Medical) – Case Example	25
The Care of the Critically Ill Children in Ontario	29
Intersection of Health Care and Children’s Aid Societies	31
Common Points of Intersection between the health care and child welfare communities	32
Case Example One	33
Case Example Two	33
Summary	33

Paediatric Death Review Committee and Deaths Under Five Committee Annual Report 2013

Paediatric Death Review Committee – Child Welfare	34
Ontario’s Children’s Aid Societies and the PDRC	34
CAS Internal Child Death Review Process	35
PDRC (Child Welfare) Review Process	35
Levels of PDRC (Child Welfare) Reviews	36
CAS Response to PDRC (Child Welfare) and Internal Review Recommendations	36
Reports received for PDRC (Child Welfare) in 2012	36
Reported cases vs. Reviewed cases	36
Statistical Review of Cases Reported in 2012	37
Process of Review for the 107 deaths reported by a CAS in 2012	37
Deaths Reported by the CAS to the PDRC in 2012 by Region	38
PDRC (Child Welfare) Reviews of Cases with Children’s Aid Involvement (2008-2012)	39
PDRC (Child Welfare) Reviews of Cases with Children’s Aid Involvement – 2012	41
Statistical Report of 2012 Cases Reviewed by the PDRC (Child Welfare)	42
PDRC (Child Welfare) - 2012 Reviews where manner of death was Natural	44
PDRC (Child Welfare) - 2012 Reviews where manner of death was Accident	44
PDRC (Child Welfare) - 2012 Reviews where manner of death was Suicide	45
PDRC (Child Welfare) - 2012 Reviews where manner of death was Homicide	45
PDRC (Child Welfare) - 2012 Reviews where manner of death was Undetermined	46
PDRC (Child Welfare) – 2012 Reviews involving unsafe sleep environments	47
Identifying Strengths and Improving Practices	48
Themes emerging from 2012 PDRC (Child Welfare) Review of CAS Cases	49
Risk Factors	49
Examples of 2012 PDRC (Child Welfare) Death Reviews	51
PDRC (Child Welfare): Case Example One	52
PDRC (Child Welfare): Case Example Two	53
PDRC (Child Welfare): Case Example Three	54
Most Frequent PDRC (Child Welfare) Recommendations in 2012	55
MCYS Monitoring of and Response to PDRC Recommendations	56
Recommendations to the Ministry of Children and Youth Services	56
Themes and Responses from the Ministry of Children and Youth Services (MCYS) to 2012 PDRC (Child Welfare) Reviews	57
PDRC (Child Welfare) Review	61
Recommendations to Other Organizations	61
Paediatric Death Review Committee and Adolescent Deaths	63
LGBTQ Youth Suicide Prevention Summit 2012	64
Trend Analysis of Paediatric Drug Toxicity Deaths in Ontario from 2008-2010	66
Final Thoughts from the Committee Chair	72
Committee Membership	73
Appendix A	75
Appendix B	76

Message from the Chair



Since January 2012, I have had the enviable task of being both Chair of the Paediatric Death Review Committee (PDRC) and Chair of the Deaths Under Five Committee (DU5C). It is therefore my pleasure to present the 2013 Annual Report of the Paediatric Death Review Committee and the Deaths Under Five Committee of the Office of the Chief Coroner.

This report outlines the Committee work undertaken in 2012 reflecting direct involvement in just under half of the paediatric (age 0-18 years) investigations completed by coroners in Ontario. This year, the report content was prepared with recognition that historically, the key audiences have been the child welfare field and health care professionals. However, this report contains information of relevance to the people of Ontario as a whole, and it is our hope that these public safety messages will be disseminated widely.

Death review by the Committees focuses not only on individual case findings, but evaluates for recurrent or emerging themes in an attempt to identify areas where intervention may reduce the potential of future morbidity or mortality. This thematic approach is illustrated throughout the report.

Over the past year, the DU5C has adopted a new infant death classification approach while the Office of the Chief Coroner (OCC) has revised the approach to the investigation of paediatric deaths, specifically those under age five. The Investigative Questionnaire for Sudden and Unexpected Deaths of Infants was introduced. The Questionnaire supplements the OCC standard pertaining to the investigative protocol for unexpected deaths outlined in Best Practice Guideline #6: Guidance to Investigating Coroners Regarding Paediatric Death Investigations.

The Forensic Pathology complement to the DU5C was enhanced with the addition of Dr. Jayantha Herath, a forensic pathologist who joined the Ontario Forensic Pathology Service from Manitoba. He brings specific paediatric interest and expertise to the Committee. In addition, as the Committee embarks on death review in 2013, police service representation has expanded to provide increased diversity based on geography, size of police service and the skill set of the investigators.

I would like to acknowledge the departure of Dr. Bert Lauwers and Detective Sergeant Gary Giroux from the Committees. Their expertise and dedication to the committee work was invaluable. Dr. Lauwers' unrelenting passion, energy and drive for enhancing the lives of children through his work over five years as the Chairs of both Committees will not be forgotten.

Other departing members include Detective Inspector Mark Pritchard from the Ontario Provincial Police and Detective Sergeant Larry Wilson from York Regional Police. Both detectives provided excellent assistance to the committees. Dr. Joyce Bernstein from the Toronto Public Health will no longer regularly attend DU5C meetings, but will continue to be available as a resource as required.

Changes in the medical component of the PDRC include congratulations to Dr. Ivor Margolis who has relocated overseas and the introduction of Dr. Alejandro Floh, a paediatric cardiology intensivist from the Hospital for Sick Children.

I would like to welcome Ms. Kathy Kerr, Executive Lead, OCC Committee Management. She will support the PDRC as the Medical Coordinator and joins the Executive of the DU5C. I am very appreciative of Ms. Lucy Costa who has been

providing administrative support for both Committees, particularly to the DU5C and to Ms. Carol Journeaux and Ms. Julia Noonan from the MCSCS Communications Branch for their assistance and guidance in producing this annual report.

No PDRC message from the Chair would be complete without special recognition of the work of Ms. Karen Bridgman-Acker, Child Welfare Specialist, who coordinates and leads the work of the PDRC Child Welfare component. Karen plays a key role in the intersection between the child welfare field and Ontario's death investigation services.

Finally I would like to express my sincerest thanks to members of the Deaths Under Five Committee and the Paediatric Death Review Committee for their dedication and devotion to the difficult work that they assist the Office of the Chief Coroner in completing. It is also of key importance to remember that the work of the committees is but one of the legacies of the children whose suffered untimely premature death.



Dirk Huyer, MD

Regional Supervising Coroner
Chair, Paediatric Death Review Committee and
Deaths Under Five Committee

The Office of the Chief Coroner and the Context of Paediatric Deaths in Ontario

The Office of the Chief Coroner is part of the Community Safety Division of the Ministry of Community Safety and Correctional Services.

In Ontario, death investigation services are provided by the Office of the Chief Coroner (OCC) and the Ontario Forensic Pathology Service (OFPS). The OCC works closely with the OFPS to ensure a coordinated and collaborative approach to death investigation in the public interest with the goal of providing services of the highest calibre. Other death investigation partners include police services, the Centre of Forensic Sciences and other investigative agencies including but not limited to Children's Aid Societies, the Ministry of Labour and the Office of the Fire Marshal. Ontario is not only the largest medico-legal death jurisdiction in Canada, it is also the largest in North America, and one of the largest in the world.

In Ontario, coroners are medical doctors with specialized training in the principles of death investigation. Coroners investigate approximately 16,000 deaths per year in accordance with Section 10 of the Coroners Act. They investigate all non-natural deaths such as those where foul play, suicide, accident, negligence and malpractice may be involved. Some natural deaths are also investigated, depending on the nature of the death and/or if there are concerns about the care of the deceased prior to death. The OCC investigates approximately 20% of all deaths that occur within the province each year. In paediatric deaths (i.e. from live birth to the nineteenth birthday), this proportion is approximately 45%.

The Paediatric Death Review Committee (PDRC) and the Deaths Under Five Committee (DU5C) are two of the seven expert death review committees that report to the Chief Coroner for Ontario. For administrative purposes, the PDRC is composed of two sections based on the nature and circumstances of the death: PDRC (Child Welfare) reviews cases with child welfare (i.e. Children's Aid Society) involvement, and PDRC (Medical) reviews the deaths of children where issues or concerns have been identified pertaining to the medical diagnosis or provision of care.

The OCC has developed death investigation procedures that mandate expert death committee reviews for deaths in certain

circumstances. The DU5C is mandated to review all deaths investigated by coroners involving children under the age of five. The PDRC (Child Welfare) is mandated to review all deaths involving children who were receiving, or who had received, the services of a Children's Aid Society (CAS) within 12 months of the death. All other reviews conducted by the PDRC, particularly those with medical implications, are done on a discretionary basis and are referred to the PDRC (Medical) by the relevant Regional Supervising Coroner when concerns or issues are identified.

The Chairperson of the PDRC and DU5C will be a Deputy Chief Coroner or Regional Supervising Coroner or other person designated by the Chief Coroner.

Child and Youth Deaths in Ontario and Canada: Trends Over Time

While deaths of children and youth comprise a small percentage of those investigated by the Office of the Chief Coroner, each of these deaths is challenging, both emotionally and from an investigative perspective. It is important to consider the findings published in this report within the broader context of childhood deaths in Canada.

The Office of the Chief Coroner (OCC) defines the paediatric age group from live birth to the nineteenth birthday. Adolescent data provided by Statistics Canada includes the nineteenth year (i.e. adolescents up to the twentieth birthday). For the purposes of the comparisons demonstrated in Charts 1 – 6, data from the Office of the Chief Coroner includes adolescent deaths up until the twentieth birthday. On average, the OCC annually investigates 63 deaths of individuals in their nineteenth year.

Chart 1 illustrates the number of child and youth deaths per year and compares the number of cases investigated by the OCC with the provincial and national numbers. Between 2005 and 2009 (the most recent year for which complete data are available), the year to year totals have remained fairly consistent both in Canada and Ontario.

Chart 1: Comparison of Child and Youth Deaths In Canada and Ontario with Ontario Coroner's Cases 0-19 Years of Age (2005-2009)

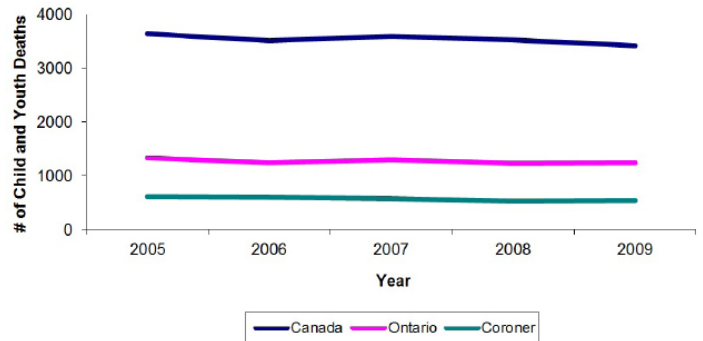


Chart 2 illustrates that from 2005-2009, the OCC has consistently investigated between 43-49% of all child and youth deaths in Ontario each year.

Chart 2: % of Ontario Child and Youth Cases Investigated by the Office of the Chief Coroner (2005-2009)

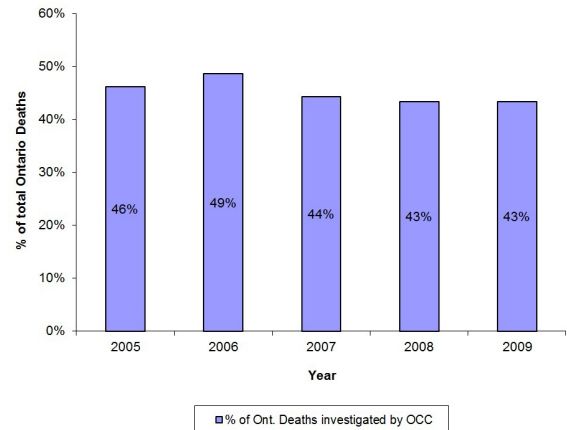
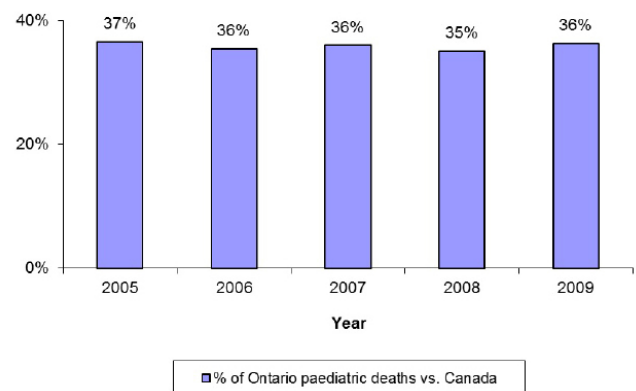


Chart 3 illustrates that the total number of Ontario child and youth deaths has consistently accounted for 35-37% of deaths across Canada for this age group.

Chart 3: % of Ontario Paediatric Deaths Compared to all of Canada (2005-2009)



Child and Youth Deaths in Ontario: Distribution Across Age Groups

Chart 4 illustrates the average number of death investigations completed by the OCC compared with the five year average Ontario total, distributed by age group. Proportionately, both in Canada and Ontario, infants compose the largest subgroup, followed by adolescents.

Chart 4: Average of Child and Youth Deaths in Ontario (2005-2009) Distribution Across Age Groups

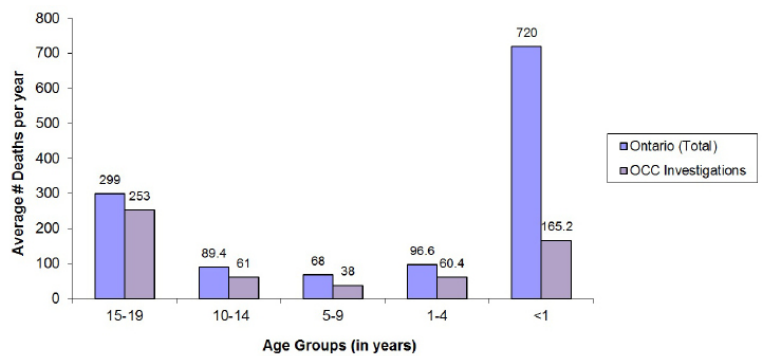
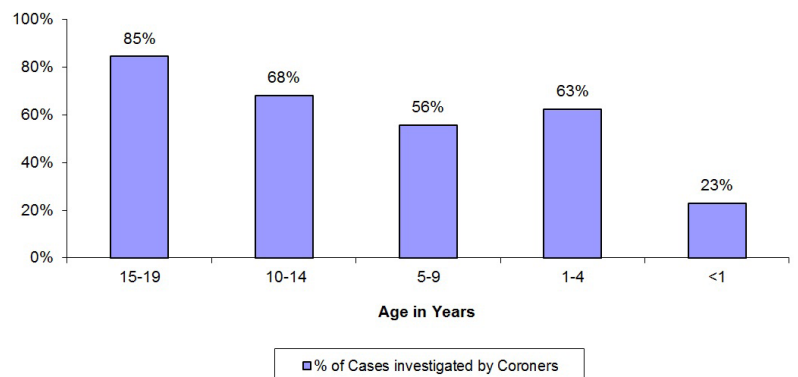


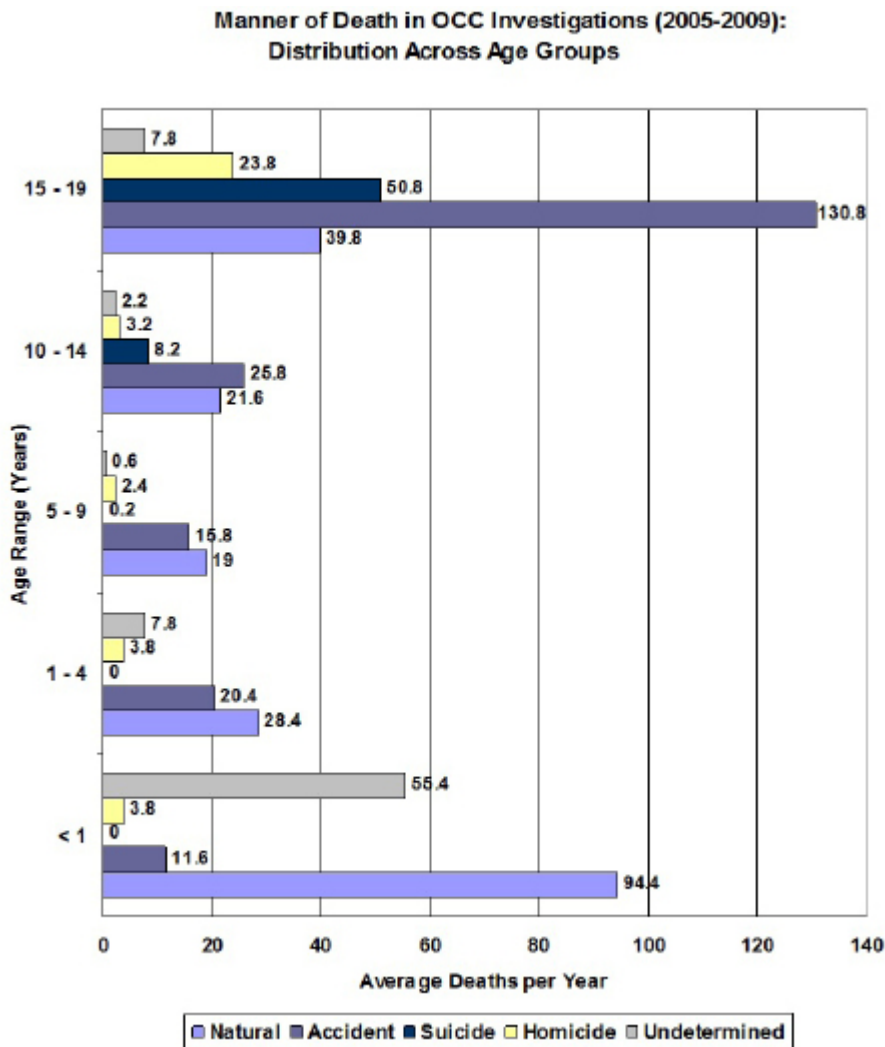
Chart 5 illustrates that over the five-year period studied, the OCC investigated approximately 23% of infant deaths (< 1 year), 63% of deaths in the 1-4 year range, 56% in the 5-9 year range, 68% in the 10-14 year range and 85% of adolescent deaths (15-19 years old).

Chart 5: % of Cases Investigated by Coroners vs. all Ontario Deaths Based on Age Group Averages from 2005-2009



Child and Youth Deaths in Ontario: Manner of Death Across Age Groups

As demonstrated in **Chart 6**, there is a distinct change in the distribution of manner of death provided by Ontario coroners that follows age progression from infancy to adolescence. There is a clear contrast between the manners of death provided in infancy (< 1 year) versus adolescence (14-19 years). Natural and undetermined dominate investigations of children under one, gradually giving way to non-natural manners (accident, homicide and suicide), which are much more prevalent among adolescents.



Deaths Under Five Committee (DU5C)

Introduction

The Deaths Under Five Committee (DU5C) of the Office of the Chief Coroner meets at least six times per year for the purpose of comprehensively reviewing the deaths of children under five years of age investigated by coroners in Ontario. It is a multi-disciplinary committee and attendees include forensic pathologists, coroners, police detectives, child maltreatment and child welfare experts, crown attorneys, a Health Canada product safety specialist and executive staff from the Office of the Chief Coroner. Participants represent diverse communities and geographical regions from across the province. As the Committee embarks on death review in 2013, police service representation has expanded to ten police agencies providing increased diversity in terms of geographic area, size of police service and the skill set of the investigators.

Scope and Mandate

The DU5C reviews all cases investigated by a coroner involving the deaths of children under five years of age, except neonatal deaths prior to discharge from hospital where no substantive issues have been identified. Neonatal cases where the death was potentially linked to parental behaviour (e.g. bed sharing, maternal substance abuse, neglect, domestic violence etc.) and those in which the CAS was involved at time of the death are referred to DU5C.

The mandate of the DU5C is to determine the cause and manner of death for all cases meeting the criteria for review. Case-specific recommendations for additional investigation, further laboratory/pathologic testing, evaluative testing of relatives or systemic improvements may arise during the review.

DU5C Review Process

Cases are referred to the DU5C by the relevant Regional Supervising Coroner. Case reviews are not confined to deaths that occurred during the calendar year of the Annual Report. At times, because of complexities involved in paediatric death investigations, completion time may be prolonged. Case review by the DU5C will therefore be delayed on occasion.

The DU5C review is a two-tiered “triaging” process involving an Executive Team review and/or Full Committee review.

The mandate of the DU5C is to determine the cause and manner of death for all cases meeting the criteria for review.

Executive Team

All referrals of deaths of children less than five years of age are received, tracked and triaged by the Executive Team. The Executive Team consists of the DU5C Chair, the Executive Coordinators (Medical and Child Welfare) and other individuals as necessary. The Executive Team reviews cases of deaths under five that are:

- Natural deaths with defined illnesses and no issues (i.e. the deaths are “all natural” and there are no police or child welfare concerns)
- Accidental deaths that are well documented where no issues have been identified (e.g. motor vehicle collision, drowning)
- Homicides where the case is still under active police investigation or before the courts.

Chart 7 illustrates that on a yearly basis, the full DU5C reviews between 90-100 cases. In the majority of cases the manner is deemed to be undetermined.

Full Committee

The full DU5C includes the multiple disciplines noted above. The full committee reviews cases of deaths under five that are:

- Potential cases of Sudden Infant Death Syndrome (SIDS)
- Natural deaths with complex medical presentations where issues have been identified
- Deaths where the sleep environment has been identified as a potential contributor
- Accidental deaths involving unusual circumstances
- Homicides (when the investigation and court process has been completed)
 - Most of these are reviewed by the Executive Team given the time period until resolution in the criminal justice system
- All cases where the cause of death remains undetermined after a complete investigation
- Deaths resulting from head injuries that are not well documented accidental deaths (i.e. motor vehicle collision)

Cases referred to the DU5C undergo a comprehensive and detailed review of records including (but not limited to):

- Post Mortem, toxicology and other investigative results
- Photographs (of the scene and Post Mortem)
- Coroner’s Investigation Statement
- Police and other investigative reports (e.g. Fire Marshal and Children’s Aid Society reports, etc.)

Chart 7

DU5C - Full Committee Reviews
Based on Manner of Death
2009-2012

Year	Natural	Accident	Homicide	Undetermined	Total
2009	16	14	2	60	92
2010	17	14	4	73	108
2011	3	13	3	79	98
2012	6	2	9	75	92

DU5C cases reviewed in 2012

Summary of Executive Reviews in 2012:

- In 2012, the Executive Team reviewed 128 cases.
- 59% (76) of the cases reviewed by the Executive team involved male children and 41% (52) female children.
- 46% (59) of the cases reviewed by the Executive Team involved children under one year old.
- Of the Executive reviews involving children under one year, the manner of death was 83% (49) natural, 3% (2) accident, 8% (5) homicide and 5% (3) undetermined.
- 54% (69) of the cases reviewed by the Executive Team involved children aged one to five years.
- Of the Executive reviews involving children aged one to five years, the manner of death was 54% (37) natural, 33% (23) accident, 10% (7) homicide and 3% (2) undetermined.
- Collectively, for all Executive Team reviews, the manner of death was 67% (86) natural, 20% (25) accident, 9% (12) homicide and 4% (5) undetermined .
- 77% (99) of the cases reviewed by the Executive Team involved deaths that occurred in 2011 and 2012.
 - 29 were from earlier years: 2010(16); 2009(9); 2008(2); 2007(1); 2006(1)

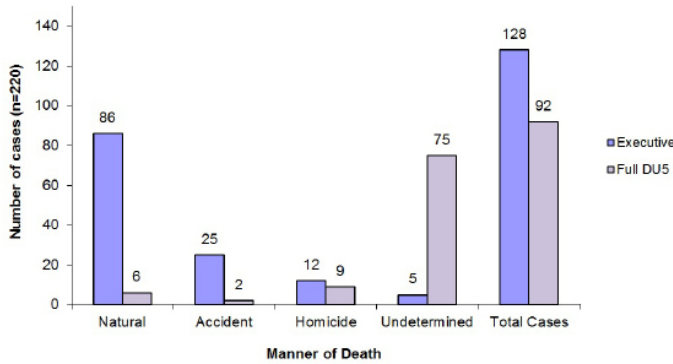
Summary of Full DU5C Reviews in 2012:

- In 2012, the Full DU5C reviewed 92 cases.
- 62% (57) of the cases reviewed by Full DU5C involved male children and 38% (35) female children.
- 78% (72) of the cases reviewed by the Full DU5C involved children under one year old.
- Of the cases reviewed by the Full DU5C involving children under one year, the manner of death was 6% (4) natural, 1% (1) accident, 7% (5) homicide and 86% (62) undetermined.
- 22% (20) of the cases reviewed by the Full DU5C involved children aged one to five.
- Of the cases reviewed by the Full DU5C involving children aged one to five, the manner of death was 10% (2) natural, 5% (1) accident, 19% (4) homicide and 65% (13) undetermined.
- Collectively, for all Full DU5C reviews, the manner of death was 7% (6) natural, 2% (2) accident, 10% (9) homicide and 82% (75) undetermined.
- 70% (64) of the cases reviewed by the Full DU5C involved deaths that occurred in 2011 and 2012.
 - 28 were from earlier years: 2010(21); 2009(3); 2008(3); 2007(1)

Total Cases Reviewed by the DU5C (Executive Team + Full Committee) in 2012:

- In 2012, there were 128 cases reviewed by the Executive Team and 92 cases reviewed by the Full DU5C, for a combined total of 220 cases.
- 60% of all cases reviewed by the Executive Team and the Full DU5C involved male children and 40% female children.
- Collectively, for all Executive Team and Full DU5C reviews, the manner of death was 42% natural, 12% accident, 10% homicide and 36% undetermined.
- 78% of the cases reviewed by the Executive Team and Full DU5C involved deaths that occurred in 2011 and 2012.

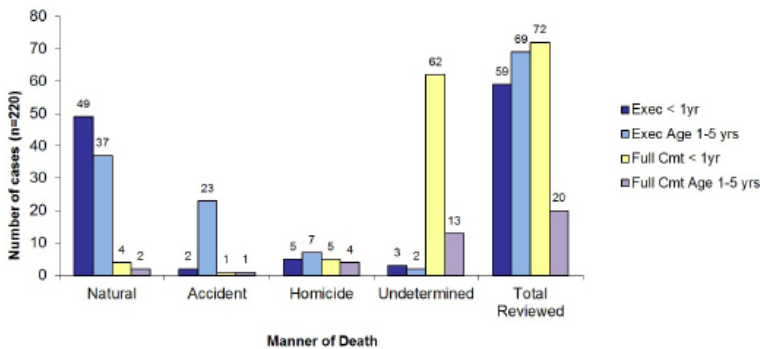
**Chart 8: Manner of Death
Executive vs. Full DU5 Review (2012)
(n=220)**



Analysis of Findings:

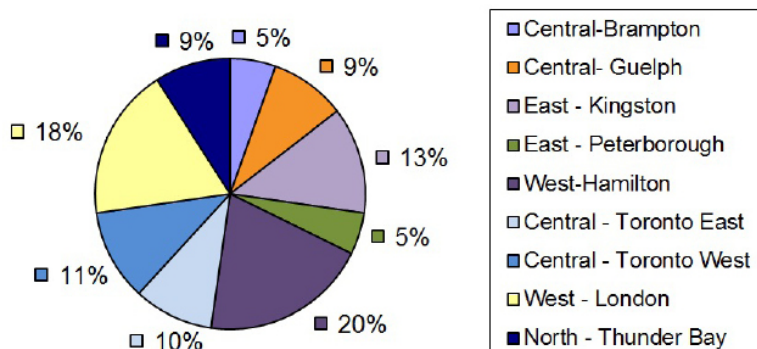
- **Chart 8** demonstrates the difference in findings related to manner of death between cases reviewed by the Executive and Full DU5C reviews.
- The majority of Executive Reviews involved natural deaths.
- The majority of Full DU5C Reviews involved deaths where the manner was undetermined.

**Manner of Death based on age (< 1yr vs. 1-5 yrs) and level of review
(Executive vs. Full DU5 Committee) - 2012**



- **Chart 9** demonstrates the findings related to manner of death and age for both the Executive and Full DU5C
- The majority of Executive reviews of natural deaths involved children under one year old.
- The majority of Full DU5C reviews of undetermined deaths involved children under one year old.

**Chart 10: % of Total DU5 Reviews based on Region (2012)
(n=220)**



- **Chart 10** demonstrates that 20% of all DU5C referrals in 2012 came from the Hamilton Region and 18% of all DU5C referrals in 2012 came from the London Region.

Determining the Cause and Manner of Death

One of the challenges the DU5C reviewers face is trying to properly assign manner and cause of death. This is most challenging for children under one year of age, when an autopsy has not clearly demonstrated a cause of death. It is not uncommon, even with the most qualified and experienced forensic pathologists performing the autopsy, the cause of death to remain undetermined.

At the 2010 annual meeting of the Canadian Chief Coroners and Medical Examiners (CCME), it was identified that there was a lack of consistency in the classification of infant deaths across provincial and territorial jurisdictions. The CCME struck a Working Group lead by a member of the Coroners Service of British Columbia to address this issue. Members of the Deaths Under Five Committee actively participated with the working group.

While not achieving complete agreement nationally, the group made great strides in fulfilling its mandate to standardize the certification and classification of unexpected infant death across Canadian jurisdictions. One of the significant changes reflected in the Sudden Infant Death Classification (see **Chart 11** next page) involves the cause of death being provided as undetermined in cases where a conclusive finding could not be achieved despite a comprehensive investigation. Previously, based upon a 2005 publication of the National Association of Medical Examiners, many death investigation jurisdictions had adopted use of the often confusing “Sudden Unexpected/Unexplained Death in Infancy (SUDI)” on the Medical Certificate of Death. This terminology will no longer be used by the DU5C.

In 2012, there were 128 cases reviewed by the Executive Team and 92 cases reviewed by the Full DU5C, for a combined total of 220 cases.

Sudden Infant Death Classification				
	Autopsy Findings	Investigative Findings	Cause of Death on Death Certificate	Manner of Death
1	Autopsy reveals a definitive cause of death (pneumonia, head injury, etc.)	Variable/may directly inform cause/manner of death	As per the autopsy/investigative findings	Based on autopsy/circumstances
2*	No anatomical or toxicological cause of death identified	Negative -child found supine or prone -no evidence of sleep-associated circumstances** -may include exposure to environmental tobacco smoke or in utero tobacco use	la- Sudden Infant Death Syndrome (SIDS) lb- Part II- ---OR--- Part Ia- Undetermined Part Ib- Part II-	Natural Undetermined
3A	No anatomical or toxicological cause of death identified	Presence of sleep associated circumstances ** Presence or absence of social risk factors***	la- Undetermined lb- II-Unsafe Sleep Environment (description in parentheses	Undetermined Undetermined
3B	No anatomical or toxicological cause of death identified	Includes cases that do not meet definition of SIDS No sleep associated circumstances** May be presence of social risk factors ***	---OR--- la- Undetermined lb- II-	Undetermined
4t	No anatomical or toxicological cause of death identified	Findings in investigation/ autopsy, examples include: - autopsy findings for which the differential diagnosis includes non-accidental injury (ex: healing fracture, bruises, etc) -death of a previous child in suspicious circumstances -significant toxicological findings for which there is an inadequate explanation	la- Undetermined lb- II-	Undetermined

Chart 11 explanations:

** Sleep associated circumstances include:
-Infant died while bed-sharing with a person or pet (adult, toddler, child, cat, dog, etc.)
-Infant died during sleep on a surface not intended for infant sleep (adult bed, waterbed, sofa, child carrier, car seat, non-approved playpen or bassinet)
-Infant died while sleeping in a cluttered sleep environment (bedding, toys, clutter in the sleep area that represent a significant asphyxial potential)

*** Social Risk Factors, including, but not limited to:
-Previous involvement with child welfare agencies, substantial mental health histories in caregivers, domestic violence in the home, alcohol or substance abuse in the caregivers, concerning, but non-specific investigative findings (ex: inconsistent accounts of circumstances surrounding the death)
-these risk factors will not be listed on the Medical Certificate of Death.

* Category Two represents deaths that meet the definition of Sudden Infant Death Syndrome (SIDS) As defined: Sudden death of an infant under 1 year of age that remains unexplained after a thorough case investigation, which must include:

- A complete autopsy (including full skeletal survey & toxicology)
- Review of the circumstances of death
- Examination of the death scene
- Police investigation
- Review of the clinical history

A death may not be considered in Category 2 if any of the following is/are present:
-SIDS definition is not met
-Presence of sleep associated circumstances (described above)
-Presence of social risk factors (described above)
-anatomical or toxicological findings that do not establish a cause of death, but for which the differential diagnosis includes abuse, and the caregiver has no explanation for the findings, or the caregiver's explanation for the findings is unwitnessed, or undocumented

A death should be considered as Category 4 if:
-Anatomical or toxicological findings do not establish a cause of death, but the differential diagnosis includes non-accidental injury, AND the caregiver's explanation of these findings are unwitnessed or undocumented.

Classification of Sudden and Unexpected Infant Deaths

In 2012, 66% (131 of 220) of the deaths reviewed by the Deaths Under Five Committee occurred in infants who were under one year of age. The categorization of infant deaths reviewed by the DU5C in 2012 is illustrated in **Chart 12**.

Chart 12: Categorization of infant deaths reviewed by the DU5C in 2012

	Autopsy Findings	Investigative Findings	# of 2012 DU5C cases (Executive + Full Cmt reviews) involving infants (under 1 year)	% of total DU5C reviews involving infants (under 1 year)	Notes
1	Autopsy reveals a definitive cause of death (pneumonia, head injury, etc.)	Variable/may provide cause/manner of death	66	50%	53 natural 3 accidental (1 of which was a bed sharing accidental death) 10 homicides
2	No anatomical or toxicological cause of death identified	Negative -child found supine or prone -no evidence of sleep- associated circumstances -may include exposure to environmental tobacco smoke or in utero tobacco use	0	0	
3A	No anatomical or toxicological cause of death identified	Presence of sleep associated circumstances Presence or absence of social risk factors	48	37%	23 unsafe sleep 25 bed sharing
3B	No anatomical or toxicological cause of death identified	Includes cases that do not meet definition of SIDS No sleep associated circumstances May be presence of social risk factors	9	7%	5--No sleep associated circumstances but social risk factors 4--no sleep associated circumstances or risk factors but did not meet Category 2 definition
4	No anatomical or toxicological cause of death identified	Findings in investigation/ autopsy, examples include: - autopsy findings for which the differential diagnosis includes non-accidental injury (ex: healing fracture, bruises, etc) -death of a previous child in suspicious circumstances -significant toxicological findings for which there is an inadequate explanation	8	6%	
Total:			131		

Close to Consensus

As alluded to previously, there exists a difference of opinion between Ontario and other jurisdictions regarding Category 2 deaths, and whether the cause of death should be provided as “SIDS” or “Undetermined.” The Deaths Under Five Committee will continue to use the term SIDS as it is felt that these deaths represent a unique category of natural deaths.

Historically, SIDS categorization allowed focused research with significant public health benefit reflected in the 53% reduction with the Back to Sleep Program¹. Having said that, the DU5C strictly applies the definition of SIDS, resulting in cases with even minor deviations being assigned to Category 3 (as per the definitions listed in Chart 11). The lack of cases with SIDS categorization in 2012 is likely reflective of this.

Consensus was also not achieved regarding Category 3. In Category 3A infant deaths, Ontario will be including unsafe sleep circumstances in Part II on the Medical Certificate of Death. Other Canadian jurisdictions have decided to approach this in different ways, with some including unsafe sleep circumstances in the non-natural data area and others leaving these off the Medical Certificate of Death completely (given the inability to demonstrate definitive contribution). Ontario will utilize a similar approach (i.e. cause and manner provided as undetermined) for Category 3B cases.

Understanding the Manner of Death - Why are so many Undetermined?

In almost 50% (65 out of 131- see data in Chart 12 – Sections 3A+3B+4) of infant deaths reviewed in 2012 by DU5C the manner of death was deemed to be undetermined. Undetermined is one of four potential manners of death that apply in infancy.

The Office of the Chief Coroner applies the following definitions when determining the manner of death:

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

Accident: A death is accidental if it is due to an occurrence, incident or event that happens without foresight or expectation.

Homicide: A death is classified as a homicide if it results from the action of a human being killing another human being.

Undetermined: The manner of death is determined 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 manners of death.

The manner of death is informed by findings at post mortem examination coupled with other investigative findings. At times, the external and internal examinations completed at the time of autopsy do not reveal an anatomic cause of death, especially in infant deaths.

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 undertaken to evaluate for these potential causes and includes histologic review, vitreous biochemistry, toxicologic analysis, metabolic testing and microbiologic testing for infectious agents. This testing will at times identify a cause of death allowing specific determination of the manner of death.

¹ NICHD Back to Sleep Campaign <https://www.nichd.nih.gov/SIDS/Pages/sids.aspx>

Case Example - Category 1 - Natural Disease: Role of Ancillary Testing

This almost four-month-old child was one of twins born at 34 weeks with birth weight of 1729 g. He was reportedly crying when he was placed on his back into a sleigh that was pulled behind an adult for about 40 minutes. His face was not covered. When the family completed their walk, they recognized that the baby was unresponsive.

Post mortem examination did not identify any signs of traumatic injury (on examination or through review of the skeletal survey). Toxicologic testing was negative. Microscopic evaluation demonstrated acute bronchopneumonia. In addition, chronic kidney inflammation and mild inflammation in the brain were noted and thought to be representative of recent viral illness. The cause of death was provided as bronchopneumonia and the manner was deemed to be natural.

Microscopic evaluation by the forensic pathologist identified findings representative of acute infectious illness allowing determination of a definitive cause of death. As the death appeared to arise from a natural disease process and there was no evidence of non-natural contribution, the manner of death was deemed to be natural.

Case Example - Category 1 – Homicide - Clinicopathologic Correlation

This 19-month-old child was found deceased on the floor of a home after police were contacted by his mother who had escaped from the home after being choked to the point of unconsciousness. The father, who had a history of substance abuse, was present in the home with self-harm injuries.

Post mortem examination did not reveal any evidence of injury to the face, mouth or neck. There were four areas of bruising on the head including the right forehead, behind the right ear, the right parietal area and left occipital area. There was intrapulmonary hemorrhage. There was no anatomic cause of death apparent leading the pathologist to provide the cause of death as unascertained. Toxicologic testing was negative. The father was subsequently convicted of second degree murder after reporting that he smothered the child with his hand. Based upon the investigative information, the cause of death was provided as smothering. The manner of death was deemed to be homicide.

In this case, the post mortem examination and ancillary testing did not reveal a cause of death, prompting the forensic pathologist to provide the cause of death as unascertained (many believe this term to be interchangeable with undetermined). On occasion, as in this case, the investigation will identify specific information that allows provision of a cause of death despite a negative post mortem examination.

Case Example - Category 3 - Undetermined

This two-month-old child was born 2.5 weeks prior to term and had some neonatal jaundice, but was otherwise described to be well. He was found to have a heart murmur in the neonatal period. He was reported to be colicky. He had his first immunization the day prior to his death. He had been given some ibuprofen to assist with post needle crankiness, prior to being put down to sleep at about 10:00 p.m. He slept in a bassinet with a pillow (covered by a blanket), placed over a soft mattress. He was described to be normal when he was fed at about 4:00 a.m. He was found without vital signs at about 6:00 a.m. There was no past involvement of the Children's Aid Society.

The post mortem examination noted mild retrognathia and posteriorly rotated ears. Other findings included single transverse palmer creases (bilaterally) and disproportionate increased size of the right ureter. There was no evidence of traumatic injury (on examination or through review of the skeletal survey). Toxicologic testing was negative. Given the anatomic abnormalities, cytogenetic analysis was completed and revealed two structural gene alterations of unknown significance. The cause of death was provided as undetermined with contributing factor of unsafe sleep environment (i.e. bassinet with adult pillow sleep surface). The manner was deemed undetermined. The Investigating Coroner made a recommendation to the family to seek consultation with a clinical geneticist.

In this case, the post mortem examination, ancillary testing and investigation did not identify specific findings or information to allow determination of a cause of death. Both the cause and manner of death were provided as undetermined given the potential that the infant's death may have occurred in any of the three available manners of death, (i.e. natural from an unidentified natural disease such as a cardiac conduction abnormality, accident related to unsafe sleep circumstance or homicide such as airway obstruction).

Unsafe Sleep Circumstances-Determining the Role

Specific findings at post mortem examination are typically absent in situations of airway obstruction in infants whether intentional, accidental (e.g. overlay during bed sharing) or potentially arising from other unsafe sleep circumstances. As illustrated in the homicide case example, investigative information may be of assistance in the determination of the cause and manner of death.

Potential unsafe sleep circumstances extend over a continuum from the safe environment of the infant sleeping on their back in an uncluttered crib that conforms to regulation, to situations clearly identified as dangerous and likely directly contributing to the death. The lack of specific pathologic findings of airway obstruction and the potential of other unidentified causes of death have hampered ability to determine how frequently unsafe sleep circumstances are directly causative of infant deaths. These limitations require assignment of the manner as undetermined. Having said that, experience in Ontario, supported by epidemiologic data, is that sleep circumstances may be a contributing factor in many cases. Review of Chart 12 demonstrates that there were 65 infant deaths reviewed by the DU5C in 2012 where the manner was deemed to be undetermined (Categories 3A + 3B +4). There were 48 infant deaths classified as 3A (unsafe sleep circumstances) indicating that in potentially up to 74% (48/65) of the infant deaths with cause of death provided by the DU5C as undetermined the sleep circumstances may have been a contributing factor.

Category 3A in Charts 11 and 12 was created to capture and flag data indicating the potential role of unsafe sleep circumstances to inform public health policies and better understand the potential contribution of these practices to infant death. In addition, inclusion of this subgroup in the classification approach recognizes the comprehensive work of the death investigators and identifies these cases as a group of potentially preventable deaths that require further study.

When considering public safety recommendations, use of risk reduction versus risk elimination is best informed by careful review and analysis of available data. We believe that the literature in this area supports sub-grouping cases potentially involving unsafe sleep circumstances. Similar to identification of SIDS as a special group, sub-grouping these cases along the continuum may allow easier identification for further case

study enhancing further research and potentially informing a public safety approach.

The finding of undetermined cause and manner of death is challenging for investigators and family members to accept given the lack of conclusiveness and/or the fact that other potentials, including foul play, remain. This is especially true within the context of the emotional response that is evoked at the time of an infant death. It must be remembered that a finding of undetermined follows careful consideration of all the evidence and is a true and honest representation of the thorough investigation undertaken and it should not be considered a failure to reach a conclusion. The classification of undetermined allows future review at a time of greater understanding and knowledge about infant deaths.



Refining the Investigative Approach

In 1969 SIDS (Sudden Infant Death Syndrome) was introduced as a categorization of sudden unexplained deaths in children under one year of age. The definition was refined in 1989 to that which is currently applied. This classification of infant deaths allowed focused research to help identify potential causes and approaches to prevention. The past value of categorizing deaths as SIDS has been clearly demonstrated. By treating these deaths as an “entity,” the American Academy of Paediatrics issued a recommendation in 1992 that babies sleep on their backs or sides to reduce the risk of SIDS (later revised in 1996 to say that sleeping on the back was safest). In 1994, this message was disseminated broadly when the NICHD (National Institute of Child Health and Human Development) launched the “Back to Sleep”² campaign. Since 1994, the rate of SIDS in the USA has declined by more than 50%. Scientific study of this cohort of infants has continued to progress such that in the future, an underlying natural cause may be found (i.e. cardiac, neurologic, metabolic).

In 1995, the Office of the Chief Coroner initiated a defined protocol for investigation of sudden and unexpected deaths in children under the age of two. The methodical investigative approach was supplemented by systematic data collection via completion of a detailed questionnaire.

In 1996, policy revision was undertaken to ensure that all children who had involvement with a Children’s Aid Society at the time of death were investigated by a coroner. The investigative protocol and questionnaires underwent revision in 2001 and 2006 with extension for use with all childhood deaths under age five.

2010 saw the introduction of a Best Practice Guideline: Guidance to Investigating Coroners Regarding Paediatric Death Investigations. This outlines the standard approach to be followed during the investigation of sudden unexpected deaths in the paediatric population (0-18 years inclusive) recognizing that the best data provides the most informed answers. The guideline encompasses and expands upon the protocols previously used to guide investigations of childhood deaths under the age of five.

Sleeping on the back in an uncluttered crib has been shown to be a safe sleep environment for an infant.

² NICHD Back to Sleep Campaign <https://www.nichd.nih.gov/SIDS/Pages/sids.aspx>

Data Driven Public Safety

On January 1, 2013, the Investigation Questionnaire for Sudden Unexpected Deaths in Children Under the Age of Five (5)" was withdrawn and replaced with a newly developed 'Investigation Questionnaire for Sudden Unexpected Deaths in Infants (Less Than One Year of Age)'. The paediatric Best Practice Guideline released in 2010 was revised to reflect this and released with the new questionnaire which supplements the guideline to ensure comprehensive data collection in infant death investigations.

The impetus for this revised questionnaire arose from recognition of how frequently the manner of death of infants is provided as undetermined and the significant proportion of deaths (37% of the cases reviewed in 2012 — see Chart 12) that occur within an unsafe sleep environment. There remains a necessity to meticulously track the sleep environment, which is key to ongoing efforts to understand the role of sleep environments in the deaths of infants.

Risks associated with compromised sleep environments are far less important as the child matures. It is indeed unusual to consider a sleep environment as a contributory factor in a death above the age of twelve months. For this reason, the age threshold for the questionnaire was reduced from five years to one year of age.

The questionnaire was expanded to capture data pertaining to the birth mother's pregnancy and the family social characteristics, which is in addition to data on the death and the death scene. This document was prepared following a review of similar documents used in other jurisdictions, including that developed by the Centers for Disease Control (CDC) in Atlanta, USA. The end product is a comprehensive questionnaire capturing a large amount of data. Given that the nature of infant death investigation is complex, data collected will be helpful in the analysis of these deaths.

The new questionnaire promises to provide information that was not previously considered. It is hoped that this will help to elucidate the causes of these deaths with a view to preventing similar deaths in the future. The questionnaire will focus upon standardized, consistent data collection ensuring this important information is accessible to researchers. The future plan is to work towards a national standard data collection process, within the context of a nationally uniform process of infant death investigation.

Risks associated with compromised sleep environments are far less important as the child matures.

Paediatric Death Review Committee (Medical)

The PDRC (Medical) is a multi-disciplinary committee that consists of paediatric practitioners from specialty fields including paediatric pathology, paediatric critical care, community paediatrics, neonatology and cardiology. The membership is balanced to reflect geographical representation as well as representation from all levels of institutions providing paediatric care including teaching centres to the extent possible.

Medical reviews are undertaken to provide clarity to medical issues involved in the time preceding a child's death to ensure the best available understanding of the circumstances of the death. Case referrals for committee evaluation include medically complex deaths when there are concerns regarding the medical care or where the clinical diagnosis, cause and/or manner of death may be in question.

Review process

Case assignment occurs by aligning the practice profile and expertise of the committee member with the circumstances of the death. For example, paediatric deaths arising from a community setting will be reviewed by one of the community paediatricians. Similarly, the death of a neonate will be primarily reviewed by the neonatologist. The process of the review involves analysis of the existing record which routinely includes all of the pertinent medical records, the Coroner's Investigation Statement, the Report of the Post Mortem Examination, toxicology reports, police reports and other relevant documents as indicated.

At the monthly meeting, the primary reviewer presents findings to the Committee for discussion. Opportunity is provided for clarification and probative questions as well as discussion about issues that may have been identified. The primary reviewer composes a final report reflecting the consensus opinion of the Committee.

The cause and manner of death are provided, and recommendations may flow from the findings of the Committee review. This report and any recommendations will be provided to the referring Regional Supervising Coroner. If the recommendations are of a systemic nature, the ministry, organization, agency or individuals will

be notified by the Committee Chair. Organizations are asked to respond back within one year implementation of recommendations.

Where a case presents a potential or real conflict of interest for a Committee member, the Committee reviews the case in the absence of the member with the potential conflict of interest.

When a case requires expertise from another discipline, case review by an external expert will be completed with attendance of the external reviewer at a PDRC meeting to participate in the discussion and drafting of recommendations, if necessary.

Limitations

This PDRC is advisory to the coroner system and makes recommendations to the Chief Coroner through the Chair.

The Paediatric Death Review Committee (Medical) case reports are prepared for the Office of the Chief Coroner and are therefore governed by the provisions of the Coroners Act, the Vital Statistics Act, the Freedom of Information and Protection of Privacy Act and the Personal Health Information and Protection of Privacy Act.

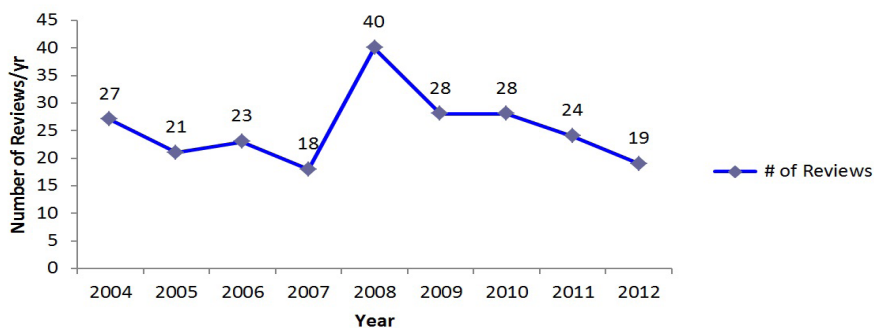
The consensus report of the Committee is limited by the data provided. Efforts are made to obtain all relevant data. It is important to acknowledge that these reports are generated from a review of the written records. The Coroner/Regional Supervising Coroner conducting the investigation may have received additional information that may render one or more of the Committee's conclusions invalid.

Recommendations are made following a careful review of the circumstances of each death; they are not intended to be policy directives.

Statistical Analysis for: Paediatric Death Review Committee (PDRC) – Medical

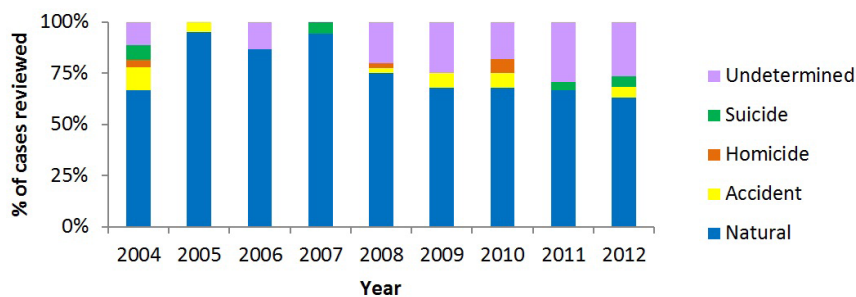
The number of PDRC (Medical) reviews varies from year to year and is generally about 25 cases per year. Case reviews conducted by the PDRC (Medical) from 2004-2012 is reflected in **Chart 13** right:

Chart 13: PDRC (Medical)
Total number of reviews
2001-2012



As shown in **Chart 14**, consistently over the years 2004-2012, the manner of death for the majority of cases reviewed by the PDRC (Medical) has been natural. The next most common manner of death, although significantly lower than natural, is undetermined.

Chart 14: % PDRC (Medical) Reviews
2004-2012
based on manner of death



Analysis of 2012 Case Reviews PDRC (Medical)

In 2012, a total of 19 cases were referred to the PDRC (Medical). Sixteen of these cases involved care-related concerns and five involved a clinical review to inform clinical diagnosis, cause and manner of death. Two cases met both of these referral criteria.

Of the 19 cases reviewed by the PDRC (Medical) in 2012, 10 involved children under one; four involved children aged one to five and five involved children and youth aged five to eighteen.

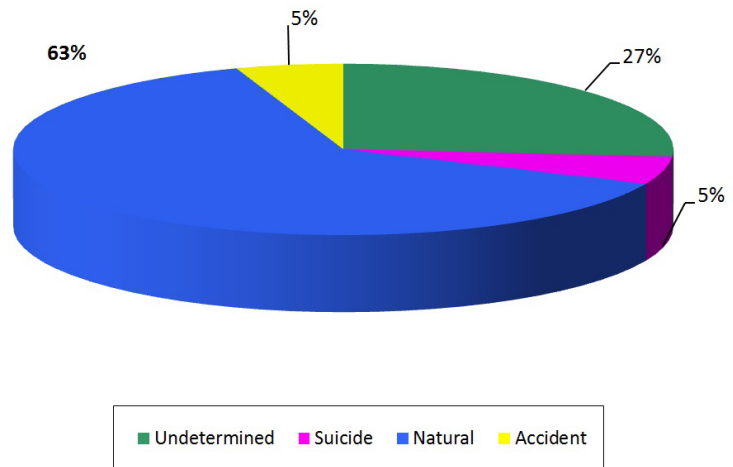
Of the nineteen cases reviewed by the PDRC (Medical) in 2012, 47% (9) were male and 53% (10) were female.

As shown in **Chart 15**, in 2012, 64% (12) – were classified as natural. 26% (5) of the deaths were classified as undetermined, 5% (1) suicide and 5% (1) homicide.

Of the five cases where the manner of death was undetermined, four involved children less than one year of age. Six of the 12 natural deaths involved children under one year of age.

Chart 15: % PDRC (Medical) Reviews 2012 based on manner of death (n=19)

Based on Manner of Death (n=19)



Recommendations

One of the important benefits of PDRC (Medical) review is informing the medical system through recommendations using a “no blame” approach with a focus on preventing future deaths via:

- Systemic changes
- Changes in professional practice
- Response to emerging trends

Not surprisingly, given the PDRC (Medical) referral criteria, recommendations are commonly directed to health care facilities. The comprehensive reports generated by the PDRC (Medical) provide a thorough case analysis including specific areas for focus. These provide sound foundation, benefiting from the collective expertise of the membership, to inform a Quality of Care Review Process by the health care organization. The organization has the opportunity to insightfully review the medical care and management within the contextual knowledge of the human and fiscal resources in the organization with potential for improvement in internal processes or policies to avoid similar outcomes in the future.

Recommendations made by the PDRC (Medical), together with a copy of the review, were distributed through the Chair to organizations and agencies who were in a position to effect implementation.

The reviews conducted by the PDRC (Medical) in 2012 resulted in 24 recommendations made towards the prevention of future similar deaths.

*PDRC (Medical)
recommendations
are commonly
directed to
health care
facilities.*

Summary of 2012 Recommendations Made by PDRC (Medical)

The 24 recommendations made from the nineteen PDRC (Medical) reviews focused on the following themes and were addressed to the identified organizations.

Four reviews resulted in no new recommendations.

Organization(s) asked to respond to recommendation	Theme of recommendation(s)	Number of reviews where theme was identified
Health care organizations	• Review of the death through a Quality of Care Review Process	12**
	• Contact of the family to provide opportunity for further case discussion and clarification	1
Ministry of Health and Long Term Care	• To support systemic enhancement of paediatric transportation	1
Health Care Professional Regulatory Bodies	• Professional practice issues	4
	• Publication of case review as an educational opportunity	
Family members of a deceased child	• To ensure testing is undertaken for potential heritable disorders in surviving relatives	1

**The type of review process is not defined by the Committee allowing the health care organization to determine the forum most applicable to their needs.

Themes Arising During Medical Reviews

Themes are often identified in individual case reviews. In addition, patterns are identified as similar issues appear in other reviews. Over time, the PDRC (Medical) has identified and compiled a number of common themes that recur in the review of child deaths. There has been significant benefit with a thematic approach as this has facilitated identification of issues that were amenable to recommendations for systemic change. Over the past number of years, there have been a number of initiatives arising from PDRC (Medical) recommendations that have enhanced paediatric health care in the Province of Ontario.

Themes from 2012 Case Reviews

Fifteen of the 19 cases reviewed by the PDRC (Medical) in 2012 were determined to be associated with five key themes. Some cases had more than one theme identified.

While these themes are congruent with past findings, evaluation for emerging trends identified defined focus for recommendations for systemic improvement. The five identified themes, and issues associated with each, are:

1. Treatment Quality of Care

Treatment and/or quality of care were identified as themes in twelve of the cases reviewed. Issues included:

- Vital signs not obtained/recorded
- Abnormal vital signs not appreciated
- Growth parameters (weight, length, head circumference) not obtained/plotted
- Assessment/recording of fluid balance not undertaken
- Incorrect diagnosis and subsequent intervention
- Lack of adherence to established protocols
- Unrecognized complications of procedures
- Need for involvement of advanced paediatric expertise

2. Differential Diagnosis

Differential diagnosis was identified as a theme in six of the cases reviewed. Issues included:

- Alternative diagnoses not considered
- Potential confirmation bias limited consideration beyond the admitting diagnosis
- Non-recognition or lack of appreciation of:

- Symptoms
- Laboratory tests
- Diagnostic imaging
- Patient response to treatment
- Non-appreciation of repeated parental concerns
- Especially in the child who returns without having responded to initial management

3. Documentation

Documentation was identified as a theme in three of the cases reviewed. Issues included:

- Not completed in a timely manner
- Qualitative and quantitative limitations
- Poor or illegible hand writing
- Date and time of entry absent
- Thought process/rationale for clinical approach not provided

4. Communication

Communication was identified as a theme in nine of the cases reviewed. Issues included:

- lack of discussion of vital patient information:
 - between health care staff at the time of transfer within a health care facility
 - between physicians at the time of transfer of care
 - between key informants at the time of transfer to another facility
- lack of attention/acknowledgement of expressed patient/parent concerns
- ineffective transfer of discharge advice/instruction
- Limited parental appreciation of clinical information due to ineffective understanding or ineffective information provision

5. Medical Transport

Medical transport was identified as a theme in two of the cases reviewed. Issues included:

- Transfer approach of critically ill paediatric patients
- Paediatric resource issues
- Transfer record effectiveness
- Communication between transferring and receiving health facilities

PDRC (Medical) – Case Example

This case represents an example of difficulties that can arise in the care of paediatric patients, particularly the very young, when they become ill, and the challenges that health care practitioners face when treating them. Paediatric care issues are unique and evaluation must be undertaken with a paediatric focus. It is important to remember that paediatric patients are not just little adults.

Past Medical History

This case involved an 11-month-old child who was delivered at 39 weeks gestation after an uncomplicated pregnancy. The birth weight was 2938 g. The neonatal course was uncomplicated and the infant was discharged in good condition with plans for routine care to follow. The Ontario Newborn Screening was negative in all domains.

Terminal Events

Two days prior to death, the child was brought to the Emergency Room (ER) of a community hospital. The ER record documented a history of the child being ill for two days with 20 episodes of vomiting and four episodes of diarrhea on the day of presentation with bloody stool noted in the diaper when seen in the ER. The child was not tolerating fluids. There were no known sick contacts. There was no cough or symptoms of respiratory tract infection. The child was not taking any medication.

Initial vitals completed by the triage nurse at 6:33 p.m. were: temperature 38.4° C, pulse 158, respiratory rate 28 and oxygen saturation 96%. Blood pressure was not recorded. The charting indicated that the child was lethargic, with a poor cry and absent bowel sounds. The weight was recorded as 8.44 kg. The child had a 1 kg weight loss over the week prior. The triage level assigned was CTAS (Canadian Triage and Acuity Score) 2 with registration completed at 7:15 p.m.

The ER nursing assessment occurred at 1:00 a.m.

and the ER physician saw the child 14 minutes later. Medical intervention included request for blood testing, an intravenous fluid bolus of normal saline (calculated at 20 mL/ kg) followed by continued fluid infusion at maintenance rate, stool collection for routine culture and *Clostridium difficile* testing, oral fluids, ondansetron 1 mg by mouth and request for paediatric consultation. The diagnosis documented was "Gastro." The ER nursing note made reference to the child having pain with abdominal cramps with lethargic appearance. In the ER, the child vomited oral fluids when offered.

Laboratory testing results from the ER showed the following:

- Biochemistry: glucose 4.9, urea 5.5, creatinine 43, sodium 139, potassium 3.5, chloride 96, total CO₂ 25
- Hematology: WBC (white blood cell count) 30.0 with neutrophils 63% and bands 7% hemoglobin 123, platelets 551
- Urine testing: trace protein, ketones 3.9 mmol/L, negative for blood and leukocyte esterase
- Stool: Stool for culture: negative (reported one day after death)
- In the ER, the *Clostridium difficile* toxin was initially reported to be positive. A corrected report indicated that the positive result should be disregarded given the child's age as the finding may represent normal flora for this age group.

Initial paediatric consultation occurred in the ER at about 7:25 a.m. on the morning after initial presentation. A diagnosis of gastroenteritis with moderate dehydration was made within the context of reported weight loss. The plan was to admit the child, provide intravenous fluids and await the stool testing results. The *Clostridium difficile* results (both the initial and corrected) were reportedly communicated to the paediatrician at about 9:00 a.m. Intravenous Flagyl was ordered by the paediatrician around 9:30 a.m. The child was transferred from the ER to the inpatient ward around 10:48 a.m.

A second paediatric assessment occurred at about 12:30 a.m. (approximately 24 hours after admission). The paediatrician was called around 12:15 a.m. given nursing observation of bilious vomiting and a distended abdomen. The child had reportedly vomited two times during the previous afternoon on the ward. No stools were passed on the ward until 11:00 p.m., at which time a blood clot was passed per rectum. The child was noted to have abdominal pain intermittently starting around 10:40 p.m. The paediatrician noted that the child appeared ill and in pain. Assessment revealed good perfusion, pulse 140 and respiratory rate 40. The abdomen was distended, tense, with bowel sounds noted to be "sluggish" with fullness noted on the right side of the abdomen. A working diagnosis of "rule out intussusception" was provided. An abdominal x-ray was done and showed features consistent with a bowel obstruction and intussusception. Additional blood testing completed at that time demonstrated the following: glucose 10.6, urea 2.5, creatinine 41, sodium 140, potassium 3.6, chloride 111 and total CO₂ 18.

The paediatrician discussed the case with on call surgical staff at a tertiary care centre who suggested transfer of the child to their ER. The ER physician accepted the patient after discussion with the referring paediatrician. The vitals recorded at 1:45 a.m. (pre-transfer) were temperature 38.5° C, pulse 180, respiratory rate 40, blood pressure (BP) 88/46 and oxygen saturation 100% in room air. The child departed at 2:00 a.m. by ambulance in the company of two Registered Nurses and the mother. They arrived at the tertiary ER triage at 3:14 a.m.

At triage in the tertiary ER, the child's temperature was recorded as 38.8° C, with pulse 170 and respiratory rate 60. The child was noted to be alert, but pale with unlaboured breathing at 3:18 a.m. On repeat evaluation at triage at 3:22 a.m., the capillary refill was recorded as less than two seconds, but concerns about the respiratory status were noted including increased rate, increased effort with subcostal retractions. The child was assigned an ER bed.

At 3:50 a.m., a nasogastric tube was inserted and the intravenous (IV) team was requested as the IV inserted

at the community hospital was interstitial. Multiple IV attempts were unsuccessful prompting insertion of two intraosseous (IO) needles. Vitals signs noted were: temperature 39.8° C, pulse 208, respiratory rate 41, BP 72/44 and oxygen saturation 100% in room air.

Over the next hour, the child was given bolus fluids via IO and Cefotaxime. The pulse decreased to 180's with the BP remaining stable despite the child's appearance which was noted to be pale, dusky and cool peripherally. Dopamine was initiated at 10 mcg/kg/minute. Other medical services that became involved included General Surgery, Anaesthesia, Radiology and the Intensive Care Unit (ICU). Radiology documented intussusception via ultrasound evaluation.

Around 5:00 a.m., the child was intubated during which the BP briefly dipped to 35/26 and oxygen saturation decreased to 52%. The child was transferred to the Operating Room (OR) at around 5:22 a.m. Vitals signs pre-transfer were pulse 201, respiratory rate 42, BP 130/51 and oxygen saturation 82%. The ER staff noted concerns about the timeliness of response by the General Surgery and Radiology fellows.

In the OR, an ileocolic intussusception was located to the level of the transverse colon. This was reduced with suture repair of two serosal tears. The colon was noted to have appeared healthy. An appendectomy was undertaken. In the OR, a right internal jugular central venous line was inserted, but was not functional, prompting insertion of a left groin central venous line. During the procedure, the child remained acidotic with pH values between 6.96 and 7.06. The child was given bicarbonate, epinephrine, hydrocortisone, D25W intravenous fluids, blood transfusion (PRBC), Flagyl, calcium and Dopamine. Just prior to transfer to the Intensive Care Unit (ICU) at 8:30 a.m., the following lab values were obtained:

- Arterial gas: pH 6.96, pCO₂ 63, pO₂ 44.7, HCO₃ 13.5 on 100% oxygen
- Sodium 142
- Potassium 4.0
- Calcium 1.25
- Glucose 2.6
- Hemoglobin 131

Following transfer to the ICU, the child's condition remained poor with deterioration to death despite aggressive medical care.

Culture of blood collected from the right internal jugular vein grew two types of Enterococcus species and a Coagulase negative Staphylococcus species. The left femoral blood sample grew a Coagulase negative Staphylococcus species. Blood collected from the right brachial artery line grew an Enterococcus species.

Post Mortem Findings

After discussion between the investigating coroner and the family, the decision was made not to proceed with a post mortem examination.

Cause of death: Enterococcus sepsis with complicating intussusception

Manner of death: Natural

Comments and Issues Raised

Concerns identified by the investigating coroner related to:

1. The care at the community hospital prior to transfer;
2. The decision to transfer the child by land ambulance;
3. The decision to transfer the child without an accompanying physician.

Intussusception occurs about one case per 2000 births in the USA. The male to female ratio is 3:1. Two thirds of the cases occur in infants under one year of age with the peak incidence occurring between 5-10 months of age. Death due to intussusception is a very rare event. From 1997 to 2007, in the USA, the incidence of intussusception associated deaths were 2.1 per 1,000,000 live births.³

From 1984-1989 in England and Wales, there were 33 deaths associated with intussusception. Important factors associated with poor outcome in this study were excessive delay in diagnosis, inadequate IV fluids

and antibiotics, surgical complications and delay in recognizing recurrent or residual intussusception.⁴

In this particular case, the time to diagnosis following presentation to the medical system was approximately 29 hours. From medical presentation to definitive operative reduction of the intussusception the time was 34.5 hours. The initial community hospital triage nurse assigned a CTAS level of 2 (guideline indicates expectation for physician evaluation within 15 minutes). The ER physician assessment occurred after about four hours.

The medical assessments at the community hospital by the ER physician and paediatrician noted initial diagnosis of gastroenteritis. The PDRC was of the opinion that the physicians were likely considering bacterial enteritis as viral gastroenteritis rarely presents with bloody stools. The apparent lack of differential diagnosis in this case may have delayed achievement of the diagnosis and definitive treatment. Consideration for completion of an abdominal x-ray in the ER may have assisted with identification of intussusception.

The second paediatrician involved identified the possibility of intussusception and transfer arrangements were quickly arranged.

Given the seriousness of the medical condition, transfer of the child by the Extramural Paediatric Critical Care Response Team (PCCRT) may have allowed more aggressive intervention when the child's condition deteriorated during the transfer thus preventing the child from deteriorating to a pre-arrest state prior to arrival at the tertiary care centre. BP measurements were not undertaken at the community hospital. Only one measurement was documented just prior to transfer. Blood pressure measurements in a serial fashion are an important part of monitoring any ill child or individual.

³ Desai, R. Trends in intussusception associated deaths among US infants from 1979-2007. J Pediatr 2012 Mar;160(3):456-60

⁴ Stringer, M. et al, Childhood Death from Intussusception in England and Wales 1984-9; BMJ 1992;304:737-9

Recommendations

As a result of this PDRC (Medical) Review, the following recommendations were made:

1. *The community hospital should undertake a Quality of Care Review (in the forum of their choice) of the care and management of this child:*
 - a. *Physicians and nursing staff from the Department of Paediatrics and Emergency Medicine (at minimum) should be involved in the review*
 - b. *Suggested areas for focus include:*
 - i. *Differential diagnosis in a child who presents with vomiting and diarrhea*
 - ii. *Potential clinical presentation of intussusception*
 - iii. *Approach to evaluation when intussusception may be suspected*
 - iv. *Time interval to assessment of a CTAS 2 patient*
 - v. *Serial measurement of vital signs specifically blood pressure in an ill child*
2. *The community hospital should review the approach utilized when considering transfer of children requiring higher level care and consider revision to include early involvement of the Extramural Paediatric Critical Care Response Team (reached through CritiCall).*
3. *The tertiary hospital should undertake a Quality of Care Review (in the forum of their choice) of the care and management of the child:*
 - a. *Physicians and nursing staff from the Department of Paediatrics, Department of Surgery, Department of Emergency Medicine, Diagnostic Imaging and the Paediatric Intensive Care Unit (at minimum) should be involved in the review*
 - b. *Suggested areas for focus include:*
 - i. *Process of acceptance of transfer patients from community hospitals*
 - ii. *Potential for early involvement of the Extramural PCCRT in the transfer decision making process*
 - iii. *ER response time of the Diagnostic Imaging and General Surgery on call clinicians*

Summary

This case was one of three cases where the PDRC (Medical) felt that earlier involvement of tertiary care paediatric expertise was indicated. While making this finding, PDRC members provided the caveat that, given the severity of the clinical presentations, this may not have prevented death in these children.

With the rapid growth of communities surrounding urban centres in Ontario, increasingly complex paediatric patients are presenting to community hospitals. As these hospitals expand in size and clinical expertise, it is important that they establish protocols to guide the medical management and transfer processes for seriously ill paediatric patients. To highlight this issue, Dr. Desmond Bohn, Medical Director of CritiCall Ontario was asked to prepare a brief discussion for inclusion in the Annual Report.

The Care of the Critically Ill Children in Ontario

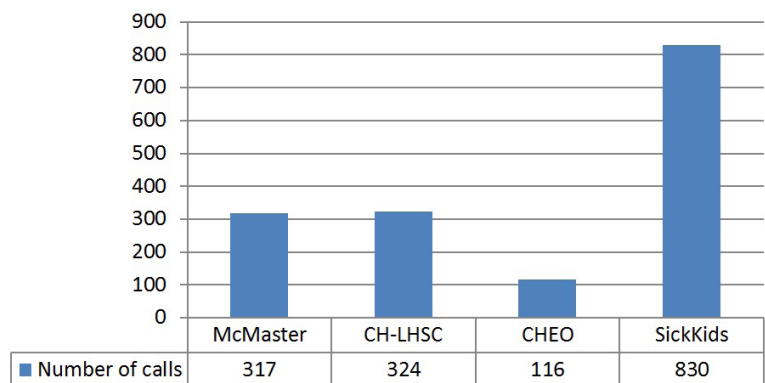
Dr. Desmond Bohn
Medical Director, CritiCall

The occurrence of critical illness in children is a rare event. They are the most robust of the human species with physiological compensatory mechanisms way beyond that of adults. However, when those compensatory mechanisms are exhausted, the downward spiral towards death may be extremely rapid and timely treatment is of the essence. Most emergency department physicians and paediatricians see these types of cases infrequently and therefore lack the necessary clinical decision making expertise and technical skills to manage them successfully. What these children require is rapid access to high level advice from paediatric intensive care specialists on the measures needed for stabilization and transfer of the child to a tertiary care paediatric centre.

To that end, a decision was taken several years ago by the Paediatric Critical Care Network to divide the province into distinct referral areas. Using funding provided by the Ministry of Health and Long-Term Care (MOHLTC) for Critical Care Response Teams, the Extramural Paediatric Critical Care Response Team (PCCRT), a 24/7 service for the management of critically ill children, was set up with all calls routed through CritiCall's one-number-to-call system (1-800-668-4357). This system guarantees that all calls will be answered by a staff paediatric intensivist in one of the four tertiary care centres who will provide on-line advice about stabilization. Currently this programme handles 1500 calls per year. The 2011-2012 distribution of calls across the four participating tertiary care centres is illustrated in **Chart 16**.

The process of organizing transport for critically ill children has proved more challenging. These needs are not met by the current provincial transport system, which although catering very well for older children, does not meet the unique needs of the infant and

Chart 16: Referrals Through CritiCall of Critically Ill Children 2011-12



younger children. The majority of the transports in this age group are for patients with acute viral respiratory illness or upper airway problems which require specialized skills in airway management and vascular access. They represent a high acuity low volume population where adverse events may occur in transit to the tertiary care centre.

A successful approach to catering for the unique needs of this population has been taken by the neonatal transport team at SickKids who have morphed into the Acute Care Transport Services (ACTS) team. This team, composed of experts in the transport of newborn infants, has expanded its role to manage children up to three years of age. This covers the largest and most vulnerable group of critically ill children requiring transport and is a model that could be adopted across the province.

Much progress has been made in the past ten years in providing a rapid and efficient service to cater to the needs of critically ill children in the province. The team's success is a tribute to the skill and commitment of the paediatric intensivists who have provided the on-line advice and could provide the model for the management of all critically ill patients across the age spectrum.

Dr. Bohn has been a long time member of the Committee and continues to contribute to all aspects of the PDRC (Medical work).

The PDRC (Medical) will continue to review the deaths of children in the hopes of improving outcomes for children whose illnesses bring them into contact with the health care system. The hospitals and health care institutions with which we have contact are continuously seeking to reduce adverse events for their patients and are very engaged in working through these complex deaths to enhance patient safety in the future.



Intersection of Health Care and Children's Aid Societies

A collaborative, coordinated and co-operative multidisciplinary approach involving health care and child welfare professionals is the best method to identify, assess, treat, manage and prevent child maltreatment. Working in isolation is contrary to best practices. Each profession brings their discipline-specific expertise to the table to work together in a collaborative way to address this complex societal issue. Health care professionals are in the position to identify, report, validate and treat cases where child maltreatment has or may have occurred.

In the majority of cases where concerns of child maltreatment are investigated by Children's Aid Societies in Ontario, there are no physical injuries that require medical evaluation. However, when injuries are present, the investigative agency must take steps to obtain the best understanding of the injury specifics, including but not limited to: potential cause, compatibility with the presenting history, compatibility with the developmental ability of the child, potential pattern of injury (e.g. when there is a physical appearance of an injury pattern or within a context of a series of injuries occurring over time) and presence of other injuries (especially those not externally visible, i.e. fractures). Assessment by medical professionals, with preference for those knowledgeable about childhood injury mechanisms, should occur when questions arise about childhood injuries within the context of child maltreatment concerns.

Another important intersection between child welfare and health care professionals is during the hospitalization of a child where there is Children's Aid Society involvement. The CAS relies on observations of the health care staff to inform their service plans. One of the areas of concern identified during PDRC reviews is the approach to discharge planning of hospitalized children, particularly those identified as medically complex/fragile. While the child may no longer require acute medical care, it is important for the CAS to have time to prepare a coordinated approach for service in the community in response to the transition from the controlled hospital environment. In addition, the CAS staff requires clear understanding of the medical needs following discharge. Discharge planning is a key requirement in the transition process.

A collaborative, coordinated and co-operative multidisciplinary approach is best.

Common Points of Intersection Between the Health Care and Child Welfare Communities

When a health care professional has concerns regarding a patient who presents with childhood injury, they should:

- Report to CAS as mandated by the Child and Family Services Act if there are concerns of child maltreatment (keeping in mind the “on-going” duty to report i.e. if additional concerns of child maltreatment arise further report to the CAS must be made even if it is known that the CAS is already involved with the family).
- Evaluate the injury and provide thorough, detailed documentation.
- Evaluate for other injuries.
- Provide opinion about injury causation:
 - May be of significant importance to guide child protection decisions—careful consideration required
 - Consider differential diagnosis
 - Ensure opinion is evidence based and within expertise
 - Consider consultation with physician with expertise in child maltreatment.

When a Children’s Aid Society has concerns about a child who presents with childhood injury, they should:

- Consider medical assessment of physical injuries especially if:
 - Injury is observed in an infant or early developmental stage.
 - Injury event information is not provided, unclear or appears inconsistent.
 - A complex injury event description is given.
 - Potential injury pattern observed.
- Consider the medical opinion within the context of the experience and expertise of the health care professional:
 - If required seek consultation with physician with expertise in child maltreatment.
- Consider ensuring photographic documentation as part of a joint investigation with a police service.

When a Children’s Aid Society has involvement with a hospitalized child, it should be remembered that:

- Health care professionals are one of a variety of community partners involved to work with CAS to ensure child safety
- Factual, neutral and fulsome sharing of medical information is required by the CAS.
 - Consent may be required for information sharing in some situations.
- Hospitals are controlled settings for the child and family.
- Discharge from hospital requires appropriate case planning.
- Discharge planning is crucial to allow CAS to develop an effective service plan.
 - This is of increased importance when the child:
 - has specific medical needs or is medically fragile.
 - will be discharged to a “high risk” environment. Examples include:
 - Concerns of parental substance abuse.
 - Potential parental care concerns such as mental health.
 - Limited resources or support systems.
- Discharge may require delay past the stage when acute medical needs are complete to allow CAS time to develop their service plan.
- Multidisciplinary case conference-based discharge planning is an effective tool for effective information sharing.
- CAS should consider early notification within the hospital admission of the need for discharge planning.
- CAS may wish to work with their local hospital to develop a protocol to guide the approach to a hospitalized child where ongoing CAS involvement is anticipated.

Case Example One:

This almost five-year-old female child died from complications of traumatic head injury after a forceful spanking incident. The step-father entered a plea of guilty to manslaughter. When the child was three years of age, the daycare contacted the CAS reporting observation of a cluster of bruises on the child's right buttock, bruising on her left buttock felt to be suspicious for three finger marks and bruising on the inside of her ear above her ear lobe. The child had significant speech delay and did not speak during the interview. The mother and step-father reported no knowledge of the cause for the injuries. A number of potential explanations for the buttock bruising were subsequently provided including children fighting over a toy, being hit by her sister with a toy, and that while the child and her sister were playing unsupervised in a playground with two boys described to be aggressive she may have been hit by a garden tool (three pronged cultivator).

This child, who had limited verbal skills, was observed to have bruising in at least two areas that are atypical for accidental injury, one of which appeared to have a patterned injury. A number of potential injury explanations were provided, one of which required pattern analysis.

Case Example Two:

This six-month-old child died from a traumatic head injury. At three weeks of age, health care staff contacted the CAS reporting presence of significant torso bruising that reportedly arose from the child becoming entangled in a homemade swing apparatus (constructed from parts of two broken swing units). During the assessment, the swing was not observed by the CAS or the health care professionals.

This represents an unusual injury event with apparently significant physical injury in an infant with limited developmental ability.

Summary

Intersection between the child welfare field and health care professionals is not uncommon and may be a crucial juncture for CAS case management. Thorough evidence based medical assessment and complete understanding of available health information is of significant importance to informing the service plan or approach to child protection.



Paediatric Death Review Committee – Child Welfare

Ontario’s Children’s Aid Societies and the PDRC

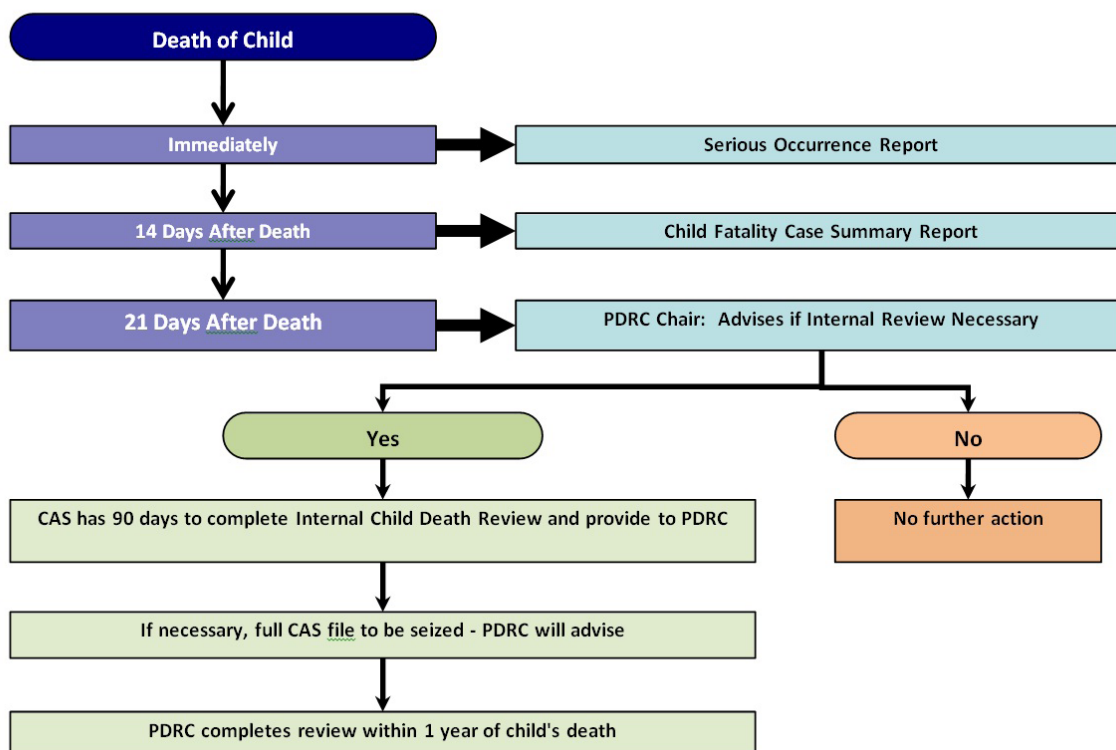
In Ontario, child welfare services are provided by 47 Children’s Aid Societies (CAS), seven of which are designated Aboriginal agencies. Each CAS is an independent, non-government agency governed by a board of directors and funded by the Ministry of Children and Youth Services (MCYS).

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 that directs and guides Children’s Aid Societies on the process of reporting and review of child deaths where the child and/or family had CAS involvement within the 12 months prior to the death. Historically, approximately 100 paediatric* deaths fall into this category each year. These 100 deaths represent about 8% of all paediatric deaths in Ontario and approximately 17% of those investigated by a coroner.

Chart 17 shows the flow and timelines as outlined in the Joint Directive between the Office of the Chief Coroner and the Ministry of Child and Youth Services for Child Death Reporting and Review.

Chart 17– Joint Directive Flow Chart – Office of the Chief Coroner and Ontario Children’s Aid Societies



*For the purposes of death investigation, paediatric age range applied by the Office of the Chief Coroner is live birth to eighteen years (inclusive). However, the PDRC (Child Welfare) may review deaths of young adults who have passed their nineteenth birthday when under Extended Care and Maintenance with a CAS.

CAS Internal Child Death Review Process

The Joint Directive between the Ministry of Children and Youth Services and the Office of the Chief Coroner directs when the Children's Aid Societies will complete Internal Child Death Reviews.

An Internal Child Death Review (Internal 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 exercised by the CAS. The Internal Review may make recommendations for the improvement of internal or external systems or structures to reduce the risk of future deaths of children served by the Society.

The Executive Committee of the PDRC reviews the CAS Child Fatality Case Summary Report and the Coroner's Investigation Statement (CIS) and considers the following criteria when deciding if a CAS will be requested to conduct and forward an Internal Review to the PDRC:

- CAS involvement within 12 months of the death
- Whether the death was undetermined or non-natural, including most accidents, suicides, homicides.
- Whether the death was natural but would benefit from review (i.e. SIDS deaths).
- Whether there may have been potential for prevention of the death with CAS intervention.
- Whether a CAS file was open for reasons that may be related to the death.

The purpose of completing Internal Reviews, as per the Joint Directive and Guidelines, is to review and analyze the child welfare agency's:

- compliance with standards
- adherence to internal policies/practices
- decision-making

Agencies utilize guidelines for completing Internal Reviews, which include the requirement to have an independent external reviewer participate in the review.

PDRC (Child Welfare) Review Process

At least two members of the PDRC (Child Welfare) – one police representative and one child welfare representative – review the following case material for each death with CAS involvement: Serious Occurrence Report, Child Fatality Case Summary Report, Internal Child Death Review, police report, Coroners Investigation Statement, Report of Post Mortem Examination, toxicology reports (if applicable) and any other investigative reports provided (e.g. report from the Office of the Fire Marshal). After discussion at a monthly Committee meeting, a final case report is prepared consisting of a summary of events, discussion and recommendations (if any), intended to prevent deaths in similar circumstances. The report is then sent to the involved CAS, the Ministry of Children and Youth Services and the referring Regional Supervising Coroner who may conduct further investigation (if indicated). Recommendations are distributed by the Committee Chair to agencies and organizations who may be in a position to effect the implementation of such recommendations. Organizations are asked to respond back within one year with the status of implementation of recommendations.

When a potential or real conflict of interest for a Committee member arises, the Committee case review will occur in the absence of the member who may have a potential conflict of interest.

Levels of PDRC (Child Welfare) Reviews

There are three levels of PDRC (Child Welfare) review:

Executive Review: These are cases for which, when reviewed by the Executive Committee of the PDRC, it is determined that no further review by the CAS or PDRC (Child Welfare) is required, as the information available indicated that the death could not reasonably have been prevented or predicted by a CAS. 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 reasons for the family's involvement with CAS.

Pending DU5C: On occasion, the decision to request an Internal Review is postponed pending the completion of the coroner's investigation and/or review by the Deaths Under Five Committee after which more information will likely be known.

Internal & PDRC Review: If the PDRC (Child Welfare) requests an Internal Child Death Review, agencies are requested to submit their report within 90 days, and the PDRC (Child Welfare) has up to 12 months to review the case and issue a report that may contain further recommendations. All cases for which an Internal Review has been completed are reviewed by the PDRC (Child Welfare).

CAS Response to PDRC (Child Welfare) and Internal Review Recommendations

Following receipt of PDRC (Child Welfare) reports, individual CAS agencies consider the report and implement recommendations as appropriate. Progress reports are submitted to the MCYS Regional Offices outlining agency responses to the recommendations addressed to them. Ministry Regional Offices are responsible for follow-up with individual agencies on a quarterly basis regarding the actions taken to respond to the Internal Review and PDRC recommendations.

Findings and recommendations from these reviews have been utilized to change practices, develop training, policy and procedures and to initiate new approaches and programs. Some examples of changes made within specific agencies as a result of Internal Reviews or PDRC (Child Welfare) recommendations are provided in Appendix A.

Reports received for PDRC (Child Welfare) in 2012

Reported Cases vs. Reviewed Cases

For PDRC (Child Welfare), cases reported to the Committee within any given year may not be reviewed within that same calendar year. This may be due to a number of factors, including complexity of the investigation, time allotment for completion of other reviews (e.g. deadlines for Serious Occurrence Reports, Child Fatality Case Summary Reports and Internal Reviews), case volume, and other parallel investigations or proceedings (including criminal proceedings) that may be ongoing.

Findings and recommendations from these reviews have been utilized to change practices, develop training, policy and procedures.

Statistical Review of Cases Reported in 2012

In 2012, as required by the Joint Directive, 107 child deaths where the child and/or family had CAS involvement within 12 months of the death were reported by a CAS to the PDRC. As many of the investigations into these deaths are still ongoing 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 undergo a full review by the PDRC (Child Welfare). A brief summary and analysis of the 107 deaths reported in 2012 by a CAS is provided below and in **Chart 18**.

Process of Review for the 107 Deaths Reported by a CAS in 2012

The Executive Committee of the PDRC (Child Welfare) reviewed all 107 deaths and requested that the involved CAS submit an Internal Review in 32 cases for future review by the PDRC (Child Welfare). In five cases, a decision about further review is pending the anticipated review by the DU5C. It was determined that 70 of the 107 deaths did not require further review given the nature of the child's death and/or CAS involvement. Many of these deaths involved medically fragile children who died as a result of natural causes, most of whom died while admitted to hospital, were born prematurely or suffered with complex medical and/or genetic conditions.

CAS Status of Children Who Died in 2012

The age range of the children whose deaths were reported to the PDRC in 2012 was one day to 19 years; 62% (66) were male and 38% (41) were female.

Chart 19 demonstrates that while many families had open protection files at the time of the death, some files had been closed within the 12 months preceding the death. 82% (88) of the deaths occurred while children were living at home with their parent (s). 16% (17) were children or youth in the care of a CAS. In addition, two youth were receiving Extended Care and Maintenance (ECM) support while living independently.

Chart 18: Path for the 107 Deaths Reported by a CAS in 2012

32 (30%)	5 (5%)	70 (65%)
<ul style="list-style-type: none"> Internal Review Requested 	<ul style="list-style-type: none"> Pending Deaths Under Five Committee Review 	<ul style="list-style-type: none"> Executive Review Only No Internal Review Requested
<ul style="list-style-type: none"> Future PDRC Review 	<ul style="list-style-type: none"> Possible Internal and PDRC Review 	<ul style="list-style-type: none"> No Future PDRC Review

The manner of death for the 17 children/youth in the care of the CAS was: natural (10), suicide (3), accident (2), homicide (1) and undetermined (1).

The manner of death for the two youth who were on Extended Care and Maintenance was homicide (one) and accident (one).

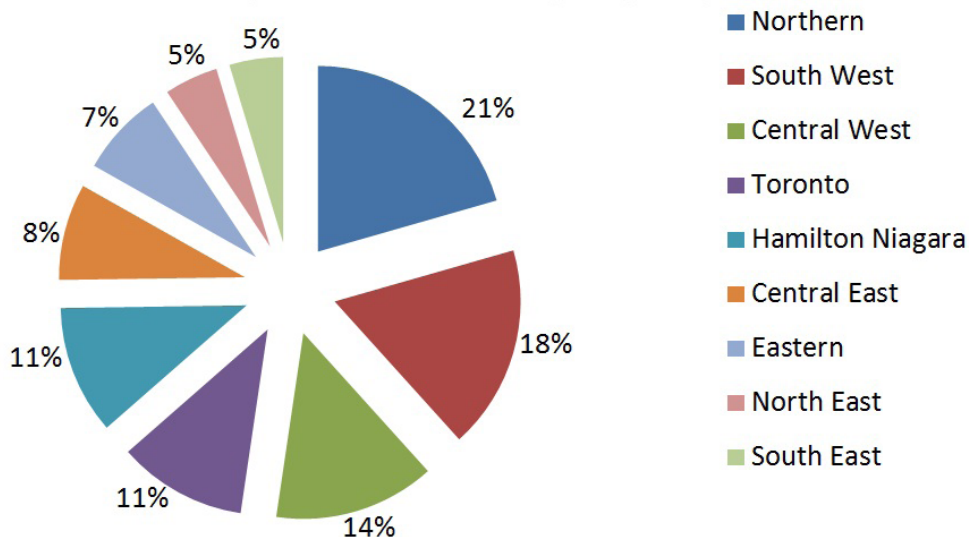
Chart 19 - CAS Status of Children Who Died in 2012

		In CAS Care	ECM	In Home Service
Total	107	17	2	88
%		16%	2%	82%

Deaths Reported by the CAS to the PDRC in 2012 by Region

The Ministry of Children and Youth Services (MCYS) is divided into nine regional areas to facilitate oversight of the 47 Children’s Aid Societies. **Chart 20** provides a breakdown, by region, of the percentage of deaths reported to the PDRC (Child Welfare) in 2012. Over 50% of the reported deaths occurred in the North, South West and Central West regions.

Chart 20: % of Total cases reported to the PDRC (Child Welfare) based on MCYS Region (2012)



PDRC (Child Welfare) Reviews of Cases with Children's Aid Involvement (2008-2012)

Historically the pattern of PDRC (Child Welfare) case review is relatively consistent.

Chart 21 shows the manner of death for the cases reviewed over the past five years.

Chart 21: Five Year Perspective on PDRC (Child Welfare) Reviews based on Manner of Death (2008-2012)

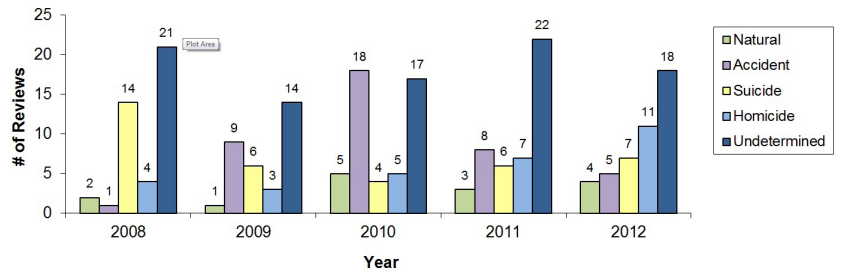


Chart 22: % of Cases Reviewed by PDRC (Child Welfare) based on Manner of Death (2008-2012)

Chart 22 demonstrates that undetermined deaths, which are mostly infant deaths, are the most frequently reviewed.

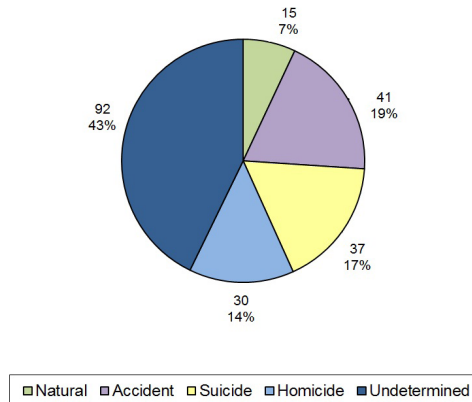
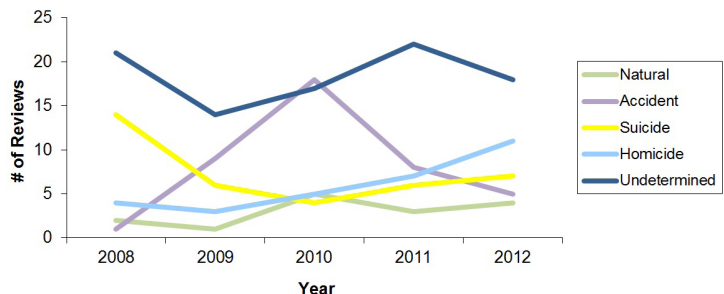


Chart 23 presents the same data illustrated in Chart 21 and demonstrates graphically the year to year variation of number of deaths classified as accident, suicide and homicide. While the graph appears to demonstrate increased frequency of particular manners in certain years, this result is from a number of factors related to the review process and is not representative of specific events of that year or a trend over time. Natural deaths are almost always the lowest number of deaths reviewed.

Chart 23: PDRC (Child Welfare) Reviews based on Manner of Death Graphic Representation



Each year, the majority of infant deaths reviewed at the PDRC (Child Welfare) that are classified as undetermined occur in an unsafe sleeping environment. This means the infant was sleeping on either a sleep surface not designed and/or approved for infant safe sleeping (e.g. sofa, futon, adult mattress, chair, swing) or was in a recommended and approved sleep surface (as regulated by Health Canada), however excess bedding or other materials compromised the safety of the environment. The majority of these deaths involved the infant sharing a sleep surface with another person, usually one or two caregivers and, occasionally, a sibling.

Chart 24 shows the number of PDRC (Child Welfare) reviews conducted between 2008-2012 where unsafe sleeping and/or bed-sharing was identified as a factor.

Year	Unsafe Sleeping	Bed-sharing
2008	17	8
2009	11	7
2010	15	6
2011	15	11
2012	10	8
Total:	68	40

Summary of chart data:

- 92/215 (43%) of the deaths reviewed in the past five years were classified as undetermined
- 68/92 (74%) Undetermined deaths involved unsafe sleeping as a factor
- 40/68 (59%) deaths involving unsafe sleeping, included bed sharing

The majority of infant deaths classified as undetermined occur in an unsafe sleeping environment.

PDRC (Child Welfare) Reviews of Cases with Children's Aid Involvement – 2012

While the PDRC (Child Welfare) does not assign blame, it does review cases with a view toward prevention. One of the roles of the PDRC is to make recommendations to avoid future deaths in similar circumstances. Questions considered include: Could this child's death have been prevented? Could future child deaths in similar circumstances be prevented? If so, how? Given the circumstances of the 2012 case reviews, future deaths might be avoided by the provision of:

- Safer sleep environments;
- Improved coordination between CAS and children's mental health services;
- Development of suicide prevention strategies for youth;
- Greater consideration of previous child welfare history in case management and risk assessment;
- Enhanced information sharing amongst service providers, including case conferences;
- Improved understanding of the impact of chronic substance abuse on parenting and at risk youth.

All child deaths are tragic and are usually the result of a number of factors. Occasionally, the actions or inactions by those in a care-giving role (e.g. family members or the child welfare system) have a part in the circumstances of the fatality. The PDRC (Child Welfare) reviews the circumstances of the death and may make recommendations for consideration by the health and child welfare systems and others with a goal to reduce the number of child deaths and/or to improve the services and care provided to families. It is anticipated that by examining these cases in a non-blaming manner, we can learn from these deaths to improve the lives of other children in the future.

In 2012, the PDRC (Child Welfare) reviewed the deaths of 45 children and youth who had involvement with a Children's Aid Society within the twelve month period leading up to their deaths. The PDRC issued 46 case reports on the deaths (one case involved the deaths of a sibling pair and two cases had involvement with two children's aid societies in the previous twelve months, requiring two reviews and reports).

The PDRC does not assign blame - it reviews cases with a view toward prevention.

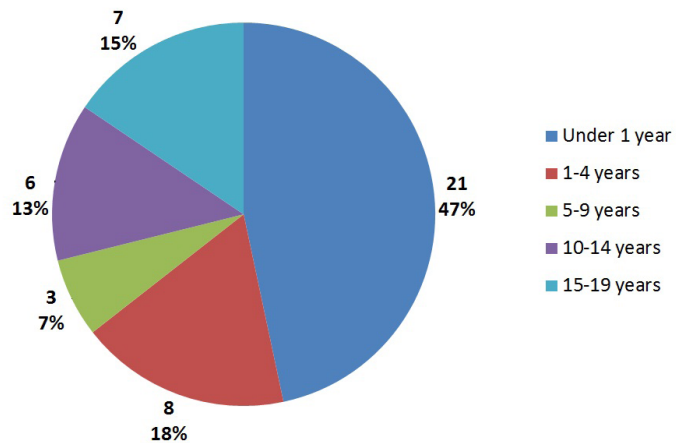
Statistical Report of 2012 Cases Reviewed by the PDRC (Child Welfare)

Chart 25 outlines demographics from the 45 case reviews conducted by the PDRC (Child Welfare) in 2012, including gender, age, year of death and information about the type of CAS involvement at the time of the death.

Gender	Male Female	22 (49%) 23 (51%)
Age	Age range	17 days-18 years
	Age groups • Under 1 year • 1-4 years • 5-14 years • 15-18 years	21 (47%) 8 (18%) 9 (20%) 7 (15%)
Year of Death	2006	1 (2%)
	2007	1 (2%)
	2008	5 (11%)
	2009	7 (16%)
	2010	13 (29%)
	2011	17 (38%)
CAS Involvement at time of death	2012	1 (2%)
	Open Protection Files	34 (76%) 5 Intake 27 Ongoing Services 2 Other • 1-Court Order of Supervision • 1-Supervision Agreement
	Cases closed within 12 months	11 (24%)
	Children in Care of a CAS	8 (18%)
	Status of children in care of CAS	• 1 Crown Ward • 1 Society Ward • 5 Interim Care and Custody • 1 Other (as a result of the injury that led to the death)
Manner of death of children in care:	• Accident (1); • Natural (3); • Undetermined (4); • Head Injury (2); • Unsafe Sleep Environment (2)	
Other	Children identified as First Nation sibling pair	13 (29%) 1
	Involvement of 2 CASs within 12 months	2

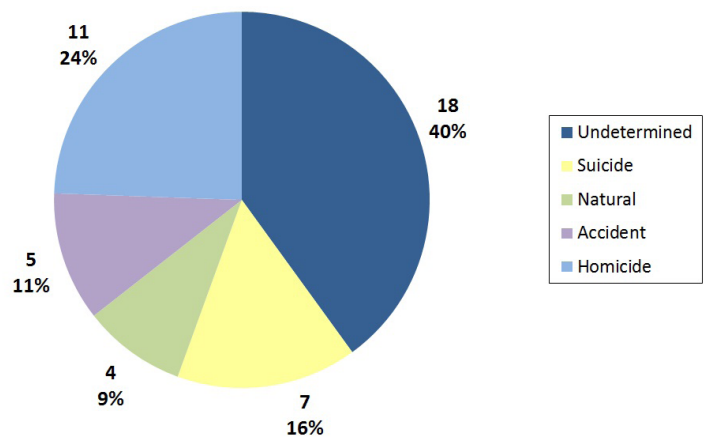
**Chart 26: 2012 PDRC (Child Welfare)
Reviews by Age
(n=45)**

Chart 26 reflects the number of PDRC (Child Welfare) reviews based on the age of the deceased child. This chart shows that 47% (21) of the 45 cases reviewed by the PDRC (Child Welfare) in 2012 involved children under one year of age, followed by children aged one to four years at 18% (8) of cases. These findings are consistent with reviews conducted in previous years.



**Chart 27: PDRC (Child Welfare)
Cases reviewed in 2012
Based on manner of Death
(n=45)**

Chart 27 demonstrates that in 40% (18) of the 45 PDRC (Child Welfare) cases reviewed in 2012, the manner of death was undetermined; 24% (11) were homicide; 16% (7) were suicide; 11% (5) were accident and 9% (4) were natural.



PDRC (Child Welfare) - 2012 reviews where manner of death was natural

Deaths of medically fragile children are included in the cases reported to the PDRC (Child Welfare) if the CAS had involvement within 12 months of the death and/or if the child was in care, even when the death was expected and occurred under medical care. Due to the nature of a child's illness and/or death, which is often predictable and not directly preventable by a CAS or medical intervention, few of these deaths undergo full review by the PDRC (Child Welfare). However, there are some natural deaths of children known to a CAS that are reviewed by the Committee, particularly if there were concerns about the child's care.

Four of the 45 deaths (9%) reviewed by the PDRC (Child Welfare) in 2012 were classified as natural. Three of these children were in the care of a CAS at the time of the death. Their age ranged from two months to eighteen years. The cause of death for each of these children was as follows:

- Complications of Acute Asthma
- Bronchopneumonia due to Aspiration of food; due to Giant Axonal Neuropathy (contributing factor: Seizure Disorder)
- Pneumonia due to Congenital Heart Disease (contributing factor: Developmental Delay)
- Undetermined (contributing factor: Cardiomegaly)

An example recommendation made following a PDRC (Child Welfare) review where the manner of death was deemed to be natural was: *CAS should consider its practices and training needs for staff who work with special needs and medically fragile children to ensure completion of a thorough assessment of the parents' capacity to meet those needs.*

Information about the medical condition, potential for further clinical deterioration, and the needs of a medically fragile child are important to weigh against the impact of a parent's chronic issues and lifestyle choices. In cases reviewed at PDRC (Child Welfare), parental issues potentially impacted the safety and ongoing risk to a vulnerable child, prior to an admission to care.

PDRC (Child Welfare) - 2012 reviews where manner of death was accident

Five of the 45 deaths (11%) reviewed by the PDRC (Child Welfare) in 2012 were classified as accident. "Accident" means that the death occurred as a result of an incident that happened without foresight or expectation. Most "accidental" deaths are preventable. One of the five deaths involved a child in the care of CAS. The five PDRC (Child Welfare) reviews in 2012 where the manner of death was found to be accident involved children ranging in age from 21 months to 16 years. The cause of death for each of these five children was as follows:

- Acute Methadone Toxicity
- Smoke Inhalation (residential fire - 2)
- Blunt Force Head Injury (motor vehicle/pedestrian collision)
- Multiple Trauma (train/pedestrian collision)

An example recommendation made following a PDRC (Child Welfare) review where the manner of death was deemed to be accident was: *The CAS should build upon its recommendation to work with specific band council members and to undertake shared training by including a joint initiative for fire safety, prevention and suppression in addition to other issues affecting children in the community and request the Band Council to provide smoke alarms to homes.*

Ongoing support by Band Councils is fundamental to successful provision of child protection services. Band members and child welfare staff share the goal of improving future safety for the community's children.

Smoke alarms are integral to fire safety planning. Early escape from a fire is crucial and smoke alarms provide an early alert to residents. In this case, and in other fire related deaths reviewed in previous years, fire detection and suppression is frequently compromised in remote communities. PDRC (Child Welfare) has reviewed 25 deaths of children from residential fires in the past five years (2008-2012) where non-functional smoke alarms were felt to be a contributing factor.

PDRC (Child Welfare) - 2012 reviews where manner of death was suicide

A classification of suicide means the death was the 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 of an act that results in his or her own death. The seven young people (16%) reviewed by the PDRC (Child Welfare) in 2012 whose deaths were classified as suicide were between the ages of 11 and 17 years; two of the children were 11 years of age. One youth was male and six were female. Six of the seven were identified as aboriginal or First Nation from remote communities in Northern Ontario.

While none of these youth were in the care of a CAS at the time of their deaths, six of the seven families had open protection files when the youth died; one file had closed eight months previously. Common factors in these seven youth deaths included:

- five were known to use/abuse substances
- four experienced previous suicidal ideation
- four had previously attempted suicide
- four were known to have experienced bullying and/or assault by peers
- four had close family members who had attempted or completed suicide
- two had received mental health treatment for suicidal ideation/attempt

An example recommendation made following PDRC (Child Welfare) review where the manner of death was deemed to be suicide was: *CAS should consult and/or partner with the Regional Health Centre to obtain training for staff on how best to integrate a deeper clinical understanding of children and youth mental health symptoms and to support provision of treatment.*

Given the limited availability of mental health services in the north, enhancement of clinical understanding of the symptoms and causes of mental health issues will likely be of assistance to frontline staff and supervisors in responding to these challenging cases. This knowledge will assist the Society in guiding decisions about timely referrals for mental health services and advocating for crisis intervention. Four of these youth were known to have previously attempted suicide but only two had received mental health treatment.

PDRC (Child Welfare) - 2012 Reviews where manner of death was Homicide

Eleven children's deaths (24%) reviewed by the PDRC (Child Welfare) in 2012 were classified as homicide. "Homicide" is defined as the action of one person causing the death of another. Four of the deaths of children under one year of age were a result of homicide.

The 2012 PDRC (Child Welfare) reviews where homicide was determined to be the manner of death included children who ranged in age from 23 days to sixteen years. None of the homicide victims were in the care of a CAS at the time of the death.

While homicide cases represent one quarter of the deaths reviewed in the past year, this was reflective of completion of the criminal justice proceedings and not necessarily an increase in the child homicide rate. The PDRC (Child Welfare) postpones review of deaths until criminal matters are resolved. The 2012 review of deaths of children deemed to be homicide represented deaths that occurred between 2006 and 2011.

Of the eleven cases reviewed by the PDRC (Child Welfare) where manner of death was classified as homicide, criminal charges were laid in 10; convictions were registered in eight deaths and two accused were acquitted at trial. The convicted parties were:

- biological parent (2)
- parent's common-law partner (2)
- acquaintance of the parent* (2)
- acquaintance of the victim* (2)

*more than one perpetrator was convicted in these cases

An example recommendation made following PDRC (Child Welfare) review where the manner of death was deemed to be homicide was: *CAS should ensure that all potential caregivers, including new male figures, in the home are interviewed during all investigations and are involved in service planning.*

It is not uncommon in cases reviewed by PDRC (Child Welfare) that male caregivers were not included in investigations and/or in assessment of safety and risk to the children. In four of the six homicide deaths where the alleged or convicted person was an immediate caregiver, previous unexplained injuries had been investigated by the agency and police.

PDRC (Child Welfare) - 2012 reviews where manner of death was undetermined

When a complete investigation, including an autopsy, review of the clinical history and evaluation of the scene, does not allow for a clear determination of the manner of death, or there are competing manners of death, the death will be classified as undetermined. Many of the deaths of infants, where no anatomic or toxicologic cause of death is found, are classified as undetermined. The manner of death for 76% (16) of the 21 deaths of children under one year of age reviewed in 2012 was undetermined. An unsafe sleeping environment was a factor in 10 of these deaths; eight included the infant sharing a sleep surface with an adult.

- 40% (18/45) of deaths reviewed by the PDRC (Child Welfare) were classified as undetermined;
 - 88% (16/18) of undetermined deaths were infants under one year of age;
 - 22% (4/18) of deaths with an undetermined manner of death involved a head injury;
- Ten infants died while in unsafe sleeping environments;
 - 80% (8/10) of infants found in unsafe sleep environments were sharing a sleep surface with another person (s);
 - 70% (7/10) of infants in unsafe sleep environments were less than three months of age; the other three were six months, eight months, and sixteen months (with developmental and medical issues);
- 17% (3/18) of the infants whose deaths were classified as undetermined were in the care of a CAS, including two involving unsafe sleep environments.

An example recommendation made following PDRC (Child Welfare) review where the manner of death was deemed to be undetermined was: *CAS should ensure training of staff about safe sleeping practices for infants. Specific procedures recommended for inclusion are:*

- a. to assess the sleeping arrangements of infants including visual inspection of the sleeping arrangements at every home visit*
 - b. methods to educate parents about safe sleeping arrangements for children*
 - c. review of safe sleeping arrangements with parents should occur even if Public Health is involved with a family*
- During recent case reviews, there has been a noticeable

increase, when compared with past reviews, in the frequency where the CAS has provided information and monitoring for infant safe sleep environments. On occasion, the CAS has not informed parents or evaluated the sleep circumstance to ensure a safe environment. In one case, review of the sleeping arrangements for the child and safe sleep practices for infants was not undertaken by the agency worker as it was believed that this would be completed by a Public Health Nurse. The sleep environment was not viewed and during the investigation of the child's death, police reported that the residence was cluttered and in complete disarray, including the adult bed which was the baby's usual sleep surface.

PDRC (Child Welfare) – 2012 reviews involving unsafe sleep environments

The PDRC (Child Welfare) continues to note a disturbing trend of infant deaths while sleeping in unsafe sleep environments, including bed-sharing (i.e. sharing a sleep surface not approved for infant sleep with an adult and/or sibling). Two deaths reviewed in 2012 in unsafe sleep environments involved a bassinet and an adult mattress cluttered with bedding. Additionally, eight infants died while sharing a sleep surface.

The types of sleep surface shared with infants and the adult relationship with whom the sleep surface was shared in the eight infant deaths are illustrated in Charts 28 and 29.

Chart 28 demonstrates the findings of the deaths reviewed in 2012, involving a shared sleep surface in an unsafe sleep environment included an adult bed (3); a couch/futon (3) and an adult mattress (2).

Chart 28: PDRC (Child Welfare) 2012 Reviews Deaths on a Shared Sleep Surface (n=8)



Chart 29: PDRC (Child Welfare) 2012 Reviews Adult Sharing a Sleep Surface (n=8)

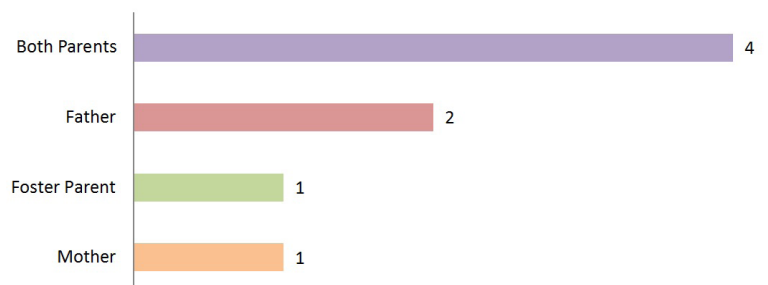


Chart 29 illustrates that of the eight 2012 PDRC (Child Welfare) cases reviewed where bed sharing was identified, four of the children were with both parents, two were with the father alone, one was with a foster parent and one was with the mother alone.

Identifying Strengths and Improving Practices

When examining child welfare records and reports, the focus tends to be on improving practices going forward; however, it is also important to acknowledge strengths observed in the services already being provided to children and families. The following, while not an exhaustive list, illustrates some of the practice strengths noted in case reviews.

Practice Strengths Noted

- The development of community based High Risk Case Resolution Planning Committees for review of complex cases, particularly in the area of children's mental health and child welfare;
- Evidence of compliance with Child Protection Standards in most cases;
- Material supports offered to families in need by some agencies (e.g. food, cribs, smoke alarms);
- Greater attention paid to raising awareness with parents about the risks of unsafe sleeping practices;
- Some communities have developed comprehensive protocols with local fire departments to enhance fire safety and prevention in homes where children reside;
- Information and literature on child safety and injury prevention created and distributed to families;
- Most CASs are responding to the PDRC (Child Welfare) with regular updates on actions taken on recommendations from internal and committee reviews;
- An emphasis on including parents in service planning and decision making is apparent;
- Some success in bringing community partners into a collaborative process for child death reviews;
- Internal Child Death Reviews are usually comprehensive using a non-blaming critical analysis approach with meaningful recommendations for improvement;
- Societies regularly provide supports and resources to families after the death of a child.

Themes emerging from 2012 PDRC (Child Welfare) review of CAS cases

One of the objectives of the PDRC (Child Welfare) review process is to track themes that emerge over time with a view that identifying such trends may contribute to knowledge that will enhance future service to, and safety of, children who come into contact with the child welfare system.

Analysis of the 45 deaths with CAS involvement reviewed by the PDRC (Child Welfare) in 2012 allowed identification of the following patterns (consistent with previous years):

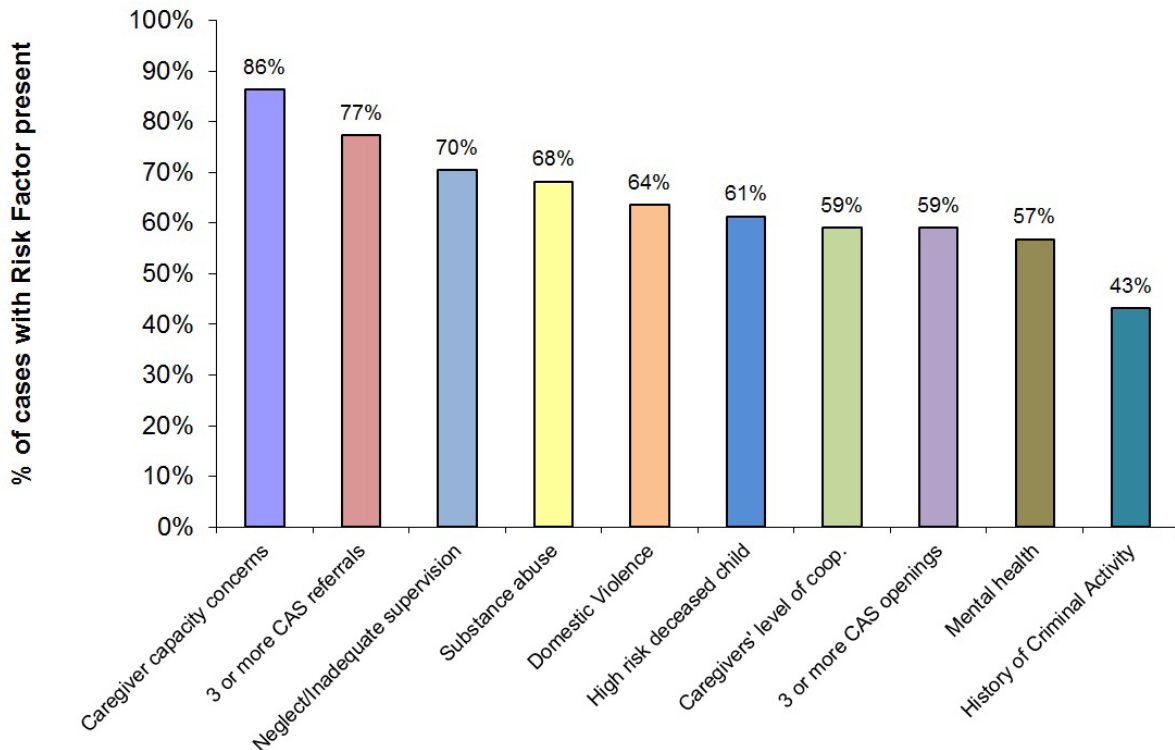
Risk Factors

The PDRC (Child Welfare) tracked risk factors for each of the cases reviewed in 2012. While not necessarily factors that are predictive of death, the trends identified by the PDRC (Child Welfare) may over time inform future risk assessments. The risk factor definitions are included in Appendix B – PDRC (Child Welfare) Definitions of Risk Factors.

* Note: All information reflected in the following charts was extracted from the PDRC (Child Welfare) reports from 2012 and the corresponding Society Internal Death Reviews and may not be all inclusive.

Chart 30 reflects the findings regarding risk factors identified in the 44 families* whose children's deaths were reviewed (*note: one family experienced the deaths of two children):

Chart 30: Top Ten Risk Factors Present in PDRC (Child Welfare) cases reviewed in 2012



The 10 most common risk factors in the PDRC (Child Welfare) cases reviewed in 2012 were:

1. 86% (38) of the families had a history of concerns about caregiver capacity
2. 77% (34) of the families had three or more referrals to child welfare
3. 70% (31) of the families had a verified history of neglect/supervision concerns
4. 68% (30) of the families had histories or current issues with substance abuse
5. 64% (28) of the families had experienced domestic violence
6. 61% (27) of the deceased children were high risk (<1 year and/or special needs)
7. 59% (26) families had multiple openings with child welfare (over 3 openings)
8. 59% (26) cases demonstrated difficulty with caregiver's level of cooperation/motivation
9. 57% (25) families had one or both caregivers with a history of mental health concerns
10. 43% (19) of the families had one or more caregivers with a history of criminal activity

Other risk factors identified were:

- 41% (18) of the families had unsafe/hazardous living conditions
- 41% (18) of the deceased children had a childhood history with CAS
- 36% (16) of the deceased children had a history of physical abuse
- 30% (13) of the families had youth of a caregiver
- 25% (11) of the deceased children experienced emotional abuse
- 23% (10) of the deceased children experienced sexual abuse
- 23% (10) of the deceased children had "other" risk factors
- 5% (2) of the families experienced a previous death of a child

Of particular interest are findings related to the presence of multiple risk factors:

- 39 % (i.e. 17 of the 44 families) had the top five risk factors present - caregiver capacity, three or more referrals, neglect/supervision, substance abuse and domestic violence
- 3 of the 17 families had all 10 risk factors
- 4 of the 17 families had 9/10 risk factors
- 6 of the 17 families had 8/10 risk factors

Examples of 2012 PDRC (Child Welfare) Death Reviews

Completion of Internal Child Death Reviews and PDRC (Child Welfare) reviews allow retrospective identification of concerns with systems, decision making, case management or the provision of health and/or child protection services to families and children. At times, children's deaths are found to be potentially preventable, prompting recommendations to help avoid similar future incidents.

Frequently, one area identified as requiring improvement involves collaboration, information sharing and communication amongst service providers. In hindsight, it becomes apparent that one service provider or organization had information that others did not or that those who could benefit from the knowledge or expertise of others did not request it. In the three cases presented below, the involved CAS completed an Internal Child Death Review and recognized that changes in service, policy and training were warranted.

Reviews identify concerns with systems, decision making, case management or the provision of health and/or child protection services

PDRC (Child Welfare): Case Example One

Summary of circumstances surrounding the death:

This five-year-old child resided with her mother, step-father and two younger siblings. On the night the child suffered fatal injury, she and her siblings were being cared for by the step-father while the mother was at work. At approximately 11:15 p.m., 9-1-1 was contacted with a report that the child was without vital signs. Paramedics resuscitated the child and she was taken to hospital. The child had a life threatening brain injury and died the next day.

There were conflicting stories presented by the step-father. Initially, he told police that at approximately 11:00 p.m., he heard a bang from upstairs and found the five-year-old child on the floor unconscious and vomiting. He reported that he carried her downstairs and called 9-1-1. The step-father subsequently told police that he had spanked the child two times on the buttocks causing the child to fall and hit her head on the first step of the bunk bed stairs. The child reportedly fell to the floor unconscious, and vomited. The step-father reportedly contacted 9-1-1 approximately 30 minutes later.

The autopsy, conducted by a forensic pathologist, indicated that death resulted from complications of blunt impact head trauma. There were buttock contusions felt to be compatible with forceful contact in the form of spanking. There was a blunt impact injury to the left side of the face with pattern suggestive of a slap injury.

The step-father was charged with second degree murder and later pled guilty to manslaughter.

Cause of Death: Hypoxic ischemic encephalopathy (HIE) in a child with aspiration of gastric contents and blunt impact head trauma.

Manner of Death: Homicide.

Findings:

While this file had been closed six months prior to the child's death, there were a number of known concerns including two recent physical abuse investigations, concerns about neglect, domestic violence and the step-father's mental health.

Issues identified during case review were:

- Medical examinations of the children were not completed at the time of injury incidents;
- A pattern of superficial investigations;

- Follow up with collaterals was not completed;
- Critical assessment of the risk the step-father posed to the children was not apparent;
- Comprehensive assessment of the overall concerns was not evident;
- There was no information available for review regarding the two physical abuse investigations being reviewed in a conference format such as a Child Abuse Review Team (CART) meeting.

Recommendations:

The PDRC (Child Welfare) made the following recommendations:

1. *The agency should develop (if it does not already exist) a case conference format (such as a CART team) where cases are reviewed for planning and/or verification purposes. Verification decisions on abuse investigations should be made at a CART meeting.*

Committee comments: The two physical abuse allegations were investigated without medical examination or medical input about the injuries suffered by the children.

Presenting the case at an internal planning meeting would likely have highlighted the concerns with the investigation and may have enhanced the assessment of the risk factors. Consideration of the involvement of physicians on the CART team as required should be explored (e.g. reviewing physical abuse investigations when there are reported injuries).

2. *The agency should review the training needs of supervisors with respect to supervising child abuse investigations.*

Committee comments: Comprehensive investigations were not conducted into the two physical abuse allegations. While the Internal Review recommended training to protection staff on investigative interviewing and conducting child abuse investigations it is also important that there is informed supervision and oversight.

PDRC (Child Welfare): Case Example Two

Summary of Circumstances Surrounding the Death:

This sixteen-year-old female was a Crown Ward, who resided in a group home, with access to her mother. She had a history of misusing drugs. A scheduled weekend visit was planned with her mother and was arranged at a local inn with close proximity to her group home so support would be available through the group home staff as needed. In the days leading up to the visit, the youth left the group home for several hours and was believed to be under the influence of drugs upon her return.

An anonymous caller contacted the Society's After-Hours Worker indicating that on a recent visit between the youth and her mother, the mother gave the youth methadone. The group home was advised of this information with a recommendation made by the Society After-Hours Worker to watch that the youth did not bring drugs back to the group home. Instruction was provided to search her belongings upon return and to have the youth attend the group home three times per day to allow her own prescribed medication to be dispensed.

The post-death police investigation revealed that when the mother met her daughter at the bus depot, she immediately gave her daughter some methadone and then purchased some alcohol which they consumed over the weekend. Reportedly, the decedent experienced apparent seizure activity and no medical assistance was sought.

A group home staff member attended the inn and could not determine if the decedent was under the influence of alcohol. The staff member consulted with the Director of the group home leading to a decision that if the youth was calm and going to bed she could remain at the inn and would be checked on the following day.

The next morning at approximately 10:00 a.m., the youth was found unresponsive. Police found empty methadone bottles and alcohol bottles in the room. The mother was charged with manslaughter and subsequently pled guilty.

Cause of Death: Acute methadone toxicity

Manner of Death: Accident

Recommendations:

1. *The Society should review its practice of facilitating contact between Crown Wards and their family. Specific areas for consideration include:*

- *Access arrangements should not undermine a child's need for safety, consistency and stability.*
- *Information obtained during a parenting capacity assessment should be considered in planning for parent/child contact.*
- *Safely planning for access with older youth that have behavioural and/or emotional difficulties and desire to maintain contact with their family despite safety concerns being present.*

Committee comments: The child had liberal contact with her family that most likely contributed to her significant behavioural, mental health and drug issues. The findings of an earlier parenting capacity assessment were not integrated into ongoing case planning. As she got older, access was more difficult to control but the Society still had responsibility to address the risk issues with the mother and to curtail visits if required due to safety issues.

2. *The Society should provide training to Society workers and supervisors on the dangers of methadone use by adolescents.*

Committee comments: The Society After-Hours Worker received a report that the mother had given her daughter methadone during a previous visit. As a result of this report, After-Hours staff told group home staff to ensure that the youth did not bring drugs into the residence. The potential danger of methadone ingestion by the child may not have been understood by the Society worker or group home staff.

3. *Discussion between group home and agency staff should be undertaken to review interagency communication approaches and case management responsibility.*

Committee comments: The agency, which had case management responsibility, was unaware of two incidents of apparent drug use prior to the visit; the worker was informed of the youth leaving the residence without permission, but not that there were concerns about her drug use. This was contained in the Incident Report which was faxed before the weekend, but not received by the worker until after the death. They were not informed of nor included in the decision making process at the time of apparent intoxicant use during the visit.

4. *The OACAS should explore the development or expansion of current curriculum for child protection workers to include the dangers of methadone and other opiate use (e.g. Oxycontin).*

Committee comments: In addition to the findings noted in this case review; the PDRC has noted the overuse of opiates as an emerging trend in other cases.

PDRC (Child Welfare): Case Example Three

Summary of Circumstances Surrounding the Death:

Following an argument with her parents, a fourteen-year-old female locked herself in her bedroom. She briefly emerged from her room around midnight and then returned to her locked bedroom. At approximately 3:00 p.m. the next day, after not receiving a response to his efforts to communicate with her, the father forced open the bedroom door. He found her with a ligature around her neck attached to the clothes rod in her closet.

The father informed investigators that the youth had a history of suicidal ideation. She had experienced the suicide deaths of two cousins in the recent past. She was also known to have a history of substance abuse. It was reportedly common for her to remain awake at night and sleep during the day leading to his decision to awaken her in mid-afternoon, her normal time to rise.

Cause of Death: Hanging

Manner of Death: Suicide

Recommendations:

1. *Case planning should incorporate prior child protection intervention, its outcome(s) and a comprehensive assessment of risk.*

Committee comments: It would appear based upon the information provided, coupled with the repeated referrals regarding the subject youth's suicidal ideation, that case planning may not have routinely incorporated the family's child protection history or the youth's mental health concerns.

2. *The 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.*

Committee comments: The information presented did not demonstrate that the Society coordinated case conferencing with the family and involved community based professionals in order to address the perceived risks and to identify the unique roles and responsibilities of each individual and/or organization.

3. *The Society should provide suicide prevention training to all case carrying staff.*

Committee comments: The agency is encouraged to enhance the clinical skills of their employees through the provision of suicide prevention training to all case carrying and supervisory staff.

4. *The Regional Supervising Coroner, utilizing this case as a means to discuss collaborative service delivery to at risk children and youth, should convene a case conference to include CAS, the Ministry Program Supervisor as well as the other involved community based professionals who served this youth and her family.*

Committee comments: Within the context that opportunities for meaningful risk reduction may not have been identified because of limited service coordination, a case conference will provide an opportunity for all involved services to reflect on their roles and identify strategies to enhance collaborative service delivery to the community's at risk child and youth population. Coordinating this within the locality of the death will allow recognition of the complexities of the local environment assisting with insightful response by the local community professionals and agencies to child protection and management of mental health issues.

Chart 31: Most Frequent Recommendations by the PDRC (Child Welfare) to CASs in 2012

	Recommendation and Rationale	Frequency of Reviews where recommendation was made
1	<p>Obtain and incorporate previous child welfare history into risk assessment and case management.</p> <p>Rationale: It can be seen from the Risk Factor chart on pages 49-50 that almost 60% of the cases reviewed involved families who were recipients of multiple child welfare interventions, sometimes over a period of many years and in various jurisdictions. Record checks and a full review of previous child welfare history will inform a comprehensive assessment of patterns of behaviour, risk to children and future planning. In 1/3 of the cases reviewed by PDRC (Child Welfare), fulsome evaluation and incorporation of the file history was absent.</p>	15
2	<p>Improve training and practices on safe sleeping for infants.</p> <p>Rationale: The highest numbers of deaths reviewed at the PDRC in the past five years involve infants in unsafe sleep environments. 25% of the recommendations made this year were directed toward agency policies and training for staff on the risks associated with unsafe sleep practices, including bed sharing, and to enhance strategies in educating and monitoring caregivers' provision of safe sleep environments for infants.</p>	11
3	<p>Enhance use of case conferencing in management of high risk cases.</p> <p>Rationale: Frequently, a number of service providers are involved with a family and/or complex decisions must be made to ensure ongoing protection of children. Collaboration and information sharing in a case conference format has been identified as an effective means of service planning. In 25% of the cases reviewed, it was recommended that CASs utilize internal and external case conferencing as a preferred practice model in high risk, complex, and/or cases involving a variety of service providers.</p>	11
4	<p>Provide training on suicide prevention strategies for children and youth and collaborate with the mental health sector.</p> <p>Rationale: While suicide deaths of young people are not always predictable, awareness of the risk factors, potential prevention strategies and collaboration with the mental health sector could potentially assist in early intervention of those at risk. 25% of the cases reviewed by the PDRC (Child Welfare) resulted in recommendations aimed at suicide prevention.</p>	11
5	<p>Improve knowledge of and response to the impact of chronic substance abuse on parenting, with an emphasis on the understanding of methadone and opiate use.</p> <p>Rationale: Substance abuse was a concern in almost 70% of the families whose children's deaths were reviewed this year. 5/7 of the young people who died by suicide were known to use and/or abuse substances, including solvents. Other substances included alcohol and drugs, both illicit and prescription. A number of people were using methadone or other opioids. Some infants were born with Neonatal Abstinence Syndrome and were treated with morphine after birth to assist with withdrawal affects. 13% of the PDRC (Child Welfare) recommendations were directed toward increasing agency staff understanding of the impact of chronic substance abuse on children's safety.</p>	6
6	<p>Develop enhanced skills, approaches and strategies to engage families in change to mitigate risk to children.</p> <p>Rationale: In this year's PDRC (Child Welfare) reviews, almost 60% of the cases demonstrated a history of unsuccessful attempts by staff to engage and/or motivate the caregivers into a mutual working relationship in order to mitigate risk to the children. This could manifest itself in caregiver behaviours such as avoidance, aggression, refusal, and lack of follow through with plans and goals. It was also noted in workers' reluctance or inability to include all caregivers in assessment of risk or in service delivery. 13% of the reports included recommendations to improve response to this issue.</p>	6
7	<p>Improve practice related to closing protection cases when follow up is expected or when risk factors may recur.</p> <p>Rationale: In the review of four closed cases, the PDRC (Child Welfare) recommended the development of a systemic internal practice to ensure planning and consideration of the future risk to children when child protection cases are being closed with dependence on the caregivers' follow through with other community referrals or when another child is expected in the near future.</p>	4

Most Frequent PDRC (Child Welfare) Recommendations in 2012

The PDRC (Child Welfare) offers recommendations to CASs based on the materials reviewed and the findings of the case. Some recommendations are aimed at the prevention of future similar deaths and others are provided with suggestion for enhancement or change in practice and/or procedures that could improve service and potentially impact child safety.

Chart 31 presents the most frequent recommendations made by the PDRC (Child Welfare) to CASs in the 2012 death reviews. A number of the same recommendations were made in more than one case. While some reports will contain one or very few recommendations, others will have several. Occasionally, the PDRC (Child Welfare) will have no recommendations to add to those developed in the Internal Review.

In 2012, the PDRC (Child Welfare) reviewed 45 cases and made 119 recommendations to CASs in Ontario.

MCYS Monitoring of and Response to PDRC Recommendations

The Ministry of Children and Youth Services' Client Services Branch monitors the implementation status of the PDRC (Child Welfare) recommendations and the action taken by CASs to respond to specific recommendations. Responses to the recommendations are prepared and submitted to the Assistant Deputy Minister, MCYS on a quarterly basis.

In June 2012, MCYS completed its roll up of the 2011 PDRC recommendations to Children's Aid Societies and reported that 92 % of the 188 PDRC recommendations made to CASs from 2011 PDRC (Child Welfare) reviews had been, or were in the process of being implemented.

Recommendations to the Ministry of Children and Youth Services

If the PDRC (Child Welfare) makes suggestions for changes to policy, legislation or the child protection standards, these recommendations are directed toward the Ministry of Children and Youth Services (MCYS).

Chart 32 outlines the recommendations made to the MCYS in 2012 and includes the frequency with which the recommendations were made.

Chart 32: Frequency of Recommendations Made to MCYS in 2012 PDRC (Child Welfare) Reviews

	Recommendation with Rationale	Frequency
1	<p>MCYS should continue its efforts to develop a strategic plan for Aboriginal child welfare.</p> <p>Rationale: It is evident in some case reviews that there can be a tension between CASs and Aboriginal communities in the delivery of child protection services. Recognizing this, and also that the Ministry has plans for service initiatives, the PDRC (Child Welfare) made this recommendation in support of a strategic plan to address these issues.</p>	1
2	<p>MCYS should consider inclusion of safe sleep policies when licensing residential programs for young parents to enhance consistency in the approach to infant safety in residential settings.</p> <p>Rationale: Safe sleep practices are recommended for all caregivers, including foster parents, relatives and babysitters. Deaths in unsafe sleep environments have been reviewed where the infant was in temporary housing or with an alternate caregiver. When a parent is staying temporarily in a residence licensed by the Ministry, safe sleep policies are recommended to enhance consistency and safety.</p>	1
3	<p>MCYS should deliver on its pledge to fully implement the Child Protection Information Network (CPIN) to improve child welfare's access to, and sharing of, information to enhance child protection.</p> <p>Rationale: While it is recognized that the ministry is in the process of developing a new information network, this recommendation was made to emphasize the value in agencies having real time access to provincial child protection records, given the number of cases reviewed where such information was missing or not incorporated into the assessment.</p>	1

Common themes are: unsafe sleep, youth suicides, information sharing, multiple risk factors and Aboriginal child care.

Themes and Responses from the Ministry of Children and Youth Services (MCYS) to 2012 PDRC (Child Welfare) Reviews

Upon review of the 45 deaths of children who had been involved with a children's aid society (CAS) within the twelve months preceding death and reviewed by the PDRC (Child Welfare) in 2012, five common themes were highlighted by the MCYS:

1. Unsafe Sleep

Ten of the deaths reviewed by the PDRC in 2012 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 Ontario Association of Children's Aid Societies (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 bed-sharing and the necessity of appropriate sleeping environments for infants.
- The ministry currently licenses and provides funding to eight young parent resource centres. The ministry inspects these residences to help ensure a safe sleeping environment for infants residing in these residences.

2. Youth Suicides

A total of seven deaths reviewed by the PDRC in 2012 were youth suicides, five of which were Aboriginal youth from northern Ontario. This is a consistent theme from past reports.

MCYS Response:

Ontario's Comprehensive Mental Health and Addictions Strategy

- Upon full implementation of Ontario's Comprehensive Mental Health and Addictions Strategy, more than 50,000

- Ontario kids and their families will benefit from quicker and easier access to the right mental health supports.
- Investments under the Strategy focus on services and supports in three key areas:
 - Providing timely access to high quality services, so children with mental health needs receive the right type of services at the right time;
 - Early identification of children with mental health needs to provide them the right help sooner so they can succeed in their education; and
 - Additional services and supports for vulnerable children and youth to meet their unique needs, including Aboriginal children and children living in remote communities.
 - New investments started in 2011 and will grow to \$93 million annually at full implementation, shared between the Ministries of Children and Youth Services, Education, Training Colleges and Universities, and Health and Long-Term Care.
 - Additional resources have been allocated to help address the mental health needs of Aboriginal children and youth, their families and communities under the Strategy.
 - These additional supports include allocating resources to hire more than 80 Aboriginal Mental Health and Addiction Workers in high needs Aboriginal communities, and developing and implementing training supports for Aboriginal Mental Health and Addiction Workers to increase the supply of trained mental health and addictions workers for Aboriginal communities.
 - Aboriginal children and youth will also benefit from an expanded and enhanced telepsychiatry model and services to provide specialized expertise to serve more kids and families in rural, remote and under-served communities through the expansion of technology, linkages with telemedicine and an increase in the number of service sites.
 - The ministry is engaged in discussions with key Aboriginal leaders on the approach that will be used to support Aboriginal children and youth under the Strategy which will be implemented in 2013/14.
- \$700,000 committed for a social development strategy in Pikangikum First Nation, including to develop mental health trauma teams to improve mental health services and address the high rates of youth suicide in Pikangikum First Nation;
 - up to \$300,000 committed over three years to Sioux Lookout First Nations Health Authority – Nodin Child and Family Intervention to work in partnership with Kinark Child and Family Services to improve the delivery of child and youth mental health services in Pikangikum First Nation; and
 - \$470,800 provided to Payukotayno: James and Hudson Bay Family Services to provide crisis intervention to James Bay coastal communities facing multiple youth suicides (2009/10 - 2010/11).

The ministry has also made a number of other investments to address the issue of child and youth mental health in Aboriginal communities, including:

- \$6.19 million annually to the Ontario Federation of Indian Friendship Centres for the Akwe:go and Wasa-Nabin programs, which address the mental, physical and emotional health and wellness of Aboriginal children and youth in a culturally relevant and holistic manner.
- \$185,000 in 2012/13 for the Nishnawbe Aski Nation Youth Resiliency Program. Also known as Girl Power/Wolf Spirit Warrior, this youth development program offers programming for boys and girls ages 8 to 16 to increase their self-esteem, foster healthy relationships and enhance leadership;
- assisting the Intergovernmental Network on Nishnawbe Aski Nation Youth to help support suicide prevention for First Nations communities in the Nishnawbe Aski Nation;
- \$50,000 to support Dilico Anishnabek Family Care to provide additional supports to students at Dennis Franklin Cromarty School in Thunder Bay (2011/12 and 2012/13);
- Beginning April 2013, Dilico will also receive annualized funding for one additional Youth Outreach Worker through the August 2012 Youth Action Plan expansion of the Youth Outreach Worker program; and
- Committing \$149,000 to Sioux Lookout First Nations Health Authority to hire two-community based youth workers to support children and youth in Eabametoong First Nation.

Other Mental Health Investments for Aboriginal Children and Youth

- The ministry has made a number of investments to address the issue of youth suicide in Aboriginal communities, including:

3. Information Sharing

Three of the child deaths reviewed by the PDRC (Child Welfare) in 2012 identified issues related to the sharing of information between CASs. In addition, three of the deaths reviewed involved limited communication with community collaterals (e.g. medical professionals, police, schools, community service providers, etc.) with respect to verification of abuse and neglect, as well during case planning. Information sharing is a consistent theme from past reports.

MCYS Response:

- In November 2010, the ministry announced a plan to modernize CAS and ministry information systems through the implementation of a single information system called the Child Protection Information Network (CPIN). Work continues on the CPIN system which will provide a full range of integrated functionality, including case management, financial management, document/records management and reporting.
- CPIN will mean that the 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.
- The ministry is currently working with the Office of the Chief Coroner to develop a strategy to improve information sharing between relevant stakeholders during the investigation of suspicious child deaths. A working group has been organized which includes representatives from the OCC, MCYS, the police and the child welfare sector. The working group commenced in June 2012, and has drafted an addendum to local CAS/Police protocols to improve information sharing between police, CASs and the Coroner's Office at the time of suspicious child deaths.
- Standard #4 of the Ontario Child Protection Standards (2007) – Conducting a Child Protection Investigation, outlines that one of the investigative steps during a family-based child protection investigation is obtaining releases of information and gathering of evidence from other professionals involved with the child/and or family (e.g. medical, law enforcement, legal, educational).
- In addition, Standards #9 – Initiation of Ongoing Service, and #10 – Case Management, outline requirements to include collateral service providers in the development of the service plan and throughout the case management process respectively. Both of these standards emphasize the role of the CAS in facilitating communication amongst service providers.

4. Multiple Risk Factors and/or Multiple Case Openings, and Historical Review Not Integrated into Case Decision Making

Seventeen of the deaths reviewed by the PDRC (Child Welfare) in 2012 occurred in families with multiple risk factors (e.g. substance use, domestic violence, mental health, neglect, inadequate supervision, etc.) and/or multiple file openings with one or more CASs. In a number of the reviews, the PDRC recommended that CASs conduct a comprehensive review of historical file information and incorporate this into case planning and decision making. This theme was also evident in the 2012 Annual Report of the PDRC and the Deaths Under Five Committee.

MCYS Response:

- The purpose of the Child Protection Standards in Ontario (2007) is to promote consistently high quality service delivery to children, youth and their families receiving child protection services from CASs in Ontario.
- Standard #1 requires CASs to assess all referrals from the community by conducting internal and provincial record checks, and if the reporter has alleged the child may have suffered or be suffering abuse, a check of the Ontario Child Abuse Register.
 - If the check of the provincial database reveals there has been previous contact between a CAS and the child, any member of the child's family, and/or the alleged perpetrator that may be relevant to the child protection investigation, the information concerning the contact is included in the case record. Similarly, if the check of the Ontario Child Abuse Register reveals a relevant record, the results of the search are to be documented on the case record within 3 days.
- In addition, Standard #3 requires CASs to develop an investigative plan which takes into consideration a thorough review of all current and historical information known about the family.
- In November 2010, the ministry announced a plan to modernize CAS and ministry information systems through the implementation of a single information system called the Child Protection Information Network (CPIN). Work continues on the CPIN system which will provide a full range of integrated functionality, including: case management, financial management, document/records management, and reporting.
- CPIN will mean that the 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.

5. Aboriginal Child Welfare

A number of the deaths reviewed by the PDRC (Child Welfare) in 2012 revealed challenges with respect to service provision within Aboriginal communities. In eight of the deaths reviewed, there were issues related to the CASs capacity to meet ministry requirements (e.g. Child Protection Standards, Foster Care Licensing, etc.). In five of the deaths reviewed, it was identified that there were strained relationships between the CAS and the local First Nations community.

MCYS Response:

Development of an Aboriginal Children and Youth Strategy

- On January 18th, 2013, MCYS announced the intent to engage with Aboriginal partners on the development an Aboriginal Children and Youth Strategy. The Strategy will:
 - Seek to identify principles, objectives and distinct actions over the short, medium and longer-term for improving the way services are delivered to First Nations, Métis, Inuit and urban Aboriginal children and youth.
 - Aim to enable Aboriginal-led solutions and build community driven, culturally appropriate, and accessible supports.
 - Seek to improve service delivery across services areas including mental health and wellness, addictions supports, suicide prevention/ life promotion, child welfare, parental/maternal services, and early childhood development supports.
- The Aboriginal Child and Youth Strategy will be co-developed with First Nations, Métis, Inuit and urban Aboriginal partners through an extensive engagement process.
 - The engagement process will include opportunities, at both the political and technical level, for partners to set priorities and provide their input. The ministry is beginning to work with Aboriginal partners to identify a mutually agreeable approach to engagement.

Aboriginal Designation

The ministry is currently working with six Aboriginal organizations who are seeking to become designated as children's aid societies. These organizations are required to develop a service delivery model that complies with all ministry standards.

*Challenges
were revealed
with respect
to service
provision
within
Aboriginal
communities.*

PDRC (Child Welfare) Reviews

Recommendations to Other Organizations

The majority of the recommendations made by the PDRC (Child Welfare) are directed toward individual children's aid societies or the MCYS. On occasion, the PDRC (Child Welfare) review of a death may identify other organizations that may be in a position to implement a recommendation that could help to prevent future deaths. Other organizations are generally given a year to respond to the recommendation; therefore some responses to recommendations made in 2012 are not yet available.

Chart 33 outlines recommendations to other organizations or ministries made by the PDRC (Child Welfare) in 2012.

Chart 34 outlines the responses that have been received to recommendations.

Chart 33 - PDRC (Child Welfare) Recommendations to Other Agencies and Organizations in 2012 Reviews

Organization	Recommendations and Rationale
Ontario Association of Children's Aid Societies (OACAS)	OACAS should explore the development or expansion of current curriculum for child protection workers to include the dangers of use of methadone and other opiates (e.g. Oxycontin).
	Rationale: The PDRC has noted the overuse of opiates as an emerging trend in some cases reviewed.
Ontario Association of Children's Aid Societies (OACAS)	OACAS should undertake review of the education provided during CAS core training to determine if engagement of hard to reach clients and families is adequately addressed or if there may be a need for a specific training component to address this issue.
	Rationale: A number of PDRC (Child Welfare) reviews have identified conflictual patterns and issues between parents and workers. Improved capacity for staff to assess the parents' response in relation to risk for the child could have a positive impact and inform decision making.
Office of the Chief Coroner (OCC) and Regional Supervising Coroners (RSC)	The OCC and RSC should be reminded of the importance of completing record checks and notifying local child welfare agencies when a child dies.
	Rationale: Policy dictates that record checks are completed upon the death of a child to ensure the protection of other children and to inform the investigation.
Office of the Chief Coroner (OCC) and Regional Supervising Coroner (RSC)	The OCC and RSC should convene a community case conference to include all service providers for the child and family to discuss potential issues and lessons learned.
	Rationale: A case conference will provide opportunity for all involved services to reflect on their roles and identify strategies to enhance collaborative service delivery to the community's at risk youth in the future.

Chart 34 - Responses Received to Recommendations to Other Organizations in PDRC (Child Welfare) in 2012

Organization	Recommendations and Rationale	Response
College of Physicians and Surgeons (CPSO)	CPSO should consider whether physicians who see patients with substance abuse disorders should report these clients to a CAS where there is evidence of ongoing substance abuse and the patient is in a parenting capacity.	CPSO agreed and responded that the recommendation will be implemented – with a plan to publish an article in Dialogue Magazine, the official publication of the CPSO.
	Rationale: In one case, the biological mother repeatedly tested positive for numerous illicit substances yet the methadone clinic did not make a child protection referral. Compounding this was the knowledge that the Children's Aid Society was actively involved with the family. This issue has been noted in previous PDRC reviews.	
Ministry of Education (MOE)	Suicide awareness and associated prevention strategies should be included within the Ontario curriculum to enhance awareness and engender a greater understanding by children and youth of the prevalence, symptomology and intervention strategies associated with suicidal ideation and behaviour.	MOE responded that there are multiple opportunities to learn about mental health across the current curriculum and more to be implemented in the future with the strengthening of the Health and Physical Education curriculum.
	Rationale: In one review, the decedent had confided to a friend that she had been experiencing suicidal ideation and had made one attempt to take her own life. The confidante informed investigators that she had been sworn to secrecy by the decedent. The inclusion of suicide awareness and prevention strategies in the Ontario curriculum could help to empower children and youth to reach out for assistance on behalf of themselves and/or others.	
Ministry of Community and Social Services (MCSS)	The Developmental Service Sector should work to develop and provide necessary services to support parents with developmental disabilities.	MCSS responded that, while the Ministry does not fund services and supports specifically for parents with a developmental disability, MCSS does fund Adult Protective Service Workers (APSW) to work with adults with a focus on the support needs of the adult/parent. For example, an APSW may identify services that specialize in teaching parenting skills
	Rationale: There appears to be a lack of services in some communities for individuals with a developmental disability who become parents (e.g. parent education programs specifically geared to meet their cognitive challenges).	

Paediatric Death Review Committee and Adolescent Deaths

Infant deaths are a key focus for the Deaths Under Five Committee. Investigative protocols, enhanced data collection and methodical classification are but a few of the initiatives taken.

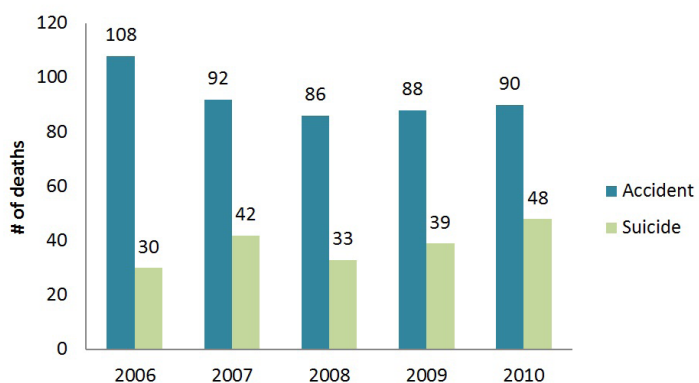
Next to the infant age category, adolescents consistently represent the second highest grouping of deaths nationally and provincially. Deaths by accident, the most frequent manner of death, and death by suicide are widely considered potentially preventable. The total number of deaths among youth 15-18 years of age (all manners) investigated by a coroner between 2006 and 2010 was 933. Deaths by accident totaled 464 (50%); deaths by suicide totaled 192 (20%).

Chart 35 segregates the data on adolescent deaths (15-18 years of age) by accident and suicide investigated by a coroner in the past five years in Ontario.

With the recognition that the adolescent age group has a number of unique challenges, two articles that highlight specific topics the PDRC felt would be of interest have been included. The first article is a summary document highlighting important findings of the first ever Lesbian, Gay, Bisexual, Trans, Two Spirit, Queer and Questioning (LGBTQ) Youth Suicide Prevention Summit in Canada. Experts, including members of Ontario's death investigation services, gathered to discuss this important topic. A number of recommendations arose including those directly applicable to the investigation of adolescent deaths. The value of data to inform future prevention and intervention was underscored, emphasizing the importance of data driven public safety.

The second article presents the findings of a research study aimed at describing the extent of and trends related to paediatric drug toxicity deaths in Ontario.

Chart 35: Deaths of Youth (15-18 years of age) by Accident and Suicide (2006-2010)



LGBTQ Youth Suicide Prevention Summit 2012

D. Ryan Dyck, BSocSc, MA
Director of Research and Policy
Directeur de la recherche et des politiques

Every year, an average of five hundred Canadian youth take their own life (Statistics Canada, 2008). What is unknown, however, is how many of these youth identify as lesbian, gay, bisexual, transsexual, Two Spirit or queer, or who are struggling with questions about their sexual orientation or gender identity (LGBTQ). What is apparent today is that LGBTQ youth experience a high degree of vulnerability to suicidal ideation and behaviour, both in Canada and the United States, particularly in comparison to their non-LGBTQ peers: approximately half of LGBT youth have thought about suicide, and they are over four times more likely to attempt suicide than their non-LGBT peers (cf. Eisenberg and Resnick 2006; Scanlon et al. 2010; Massachusetts Youth Risk Behavior Survey 2009).

In response to this reality, over fifty experts from across Canada and the United States gathered in Toronto on 30-31 May 2012, for the first ever Lesbian, Gay, Bisexual, Trans, Two Spirit, Queer and Questioning Youth Suicide Prevention Summit in Canada. The event was co-hosted by Ryerson University and Egale Canada Human Rights Trust, Canada's national LGBT human rights charity, and sponsored by TD Bank Group. Participants included leading academics and researchers, educators, social service providers, medical professionals, coroners and medical examiners, LGBTQ and Aboriginal community leaders, and public policy developers. The Office of the Chief Coroner and Ontario Forensic Pathology Service sent three representatives to participate.

The Summit culminated in the drafting of twenty recommendations for the prevention of suicide among LGBTQ youth in Canada, distributed across four categories: 1) Schools, Education and Training; 2) Public Awareness, Community Involvement and Accountability; 3) Research; and 4) Resource Development.

Summit participants routinely noted that the general lack of data relating to the LGBTQ community stands as a critical barrier to suicide prevention. In particular, the lack of demographic data is troubling in the context of participants' repeated assertions that an intersectional approach to

LGBTQ youth experience a high degree of vulnerability to suicidal ideation and behaviour, in comparison to peers.

LGBTQ youth suicide prevention is essential. Without sound information on how intersecting identities and experiences impact suicidal ideation and behaviour among LGBTQ youth, it is extremely difficult to tailor prevention programs to the variety of needs across communities.

While it is evident that LGBTQ youth face a higher risk for suicidal ideation and behaviour than their non-LGBTQ peers, there is very little data on actual attempted and completed suicide rates among LGBTQ youth. As a result, an empirically-based model of suicide causation among LGBTQ youth has not been developed. The absence of such data inhibits not only the ability of service providers to develop evidence-based prevention and intervention initiatives, but also the ability of community agencies to acquire funding for such initiatives.

In order to address these challenges and increase the availability of data, summit participants recommended the establishment of a partnership between LGBTQ communities (through Egale Canada Human Rights Trust) and the Chief Coroners and Chief Medical Examiners of Canada. It was recommended that this partnership be predicated on three overarching goals:

1. Building awareness among coroners and medical examiners of the known conditions and trends relating to LGBTQ youth suicide in order to convey the need to include questions of sexual orientation and gender identity within death investigations;
2. Collecting data by identifying instances where sexual orientation and/or gender identity are implicated in suicide deaths, thereby increasing our understanding of the relationships between sexual orientation, gender identity and suicide risk among LGBTQ youth; and
3. Preventing LGBTQ youth suicide by using data from death reviews to develop and support evidence-based suicide prevention, intervention and postvention initiatives.

Additional recommendations included:

- Implement LGBTQ-specific policies on safety, inclusivity, anti-discrimination and anti-bullying at all Ministries of Education, school boards, schools, colleges and universities across Canada;

- Provide LGBTQ youth with access to competent, effective, non-reparative medical care—with a focus on trans youth—through increased pre-clinical and clinical training on LGBTQ-related topics in all medical schools (e.g. sexual orientation, gender identity, LGBTQ youth, coming out, mental health issues, transitioning, substance use, etc.);
- Create safe and positive spaces for LGBTQ youth within all schools, particularly by:
 - Establishing and supporting gay-straight alliances, or similar groups, developed and named by students; and
 - Providing access to gender neutral washrooms and change rooms; and
- Integrate LGBTQ cultural competency and suicide prevention best practices into services and support systems for which Federal/Provincial/Territorial government are responsible (e.g. youth criminal justice, mental health and addictions, child welfare, foster care, etc.).

The complete report and list of recommendations will be made available at www.egale.ca/suicide-prevention.



Trend Analysis of Paediatric Drug Toxicity Deaths in Ontario from 2008-2010

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The Office of the Chief Coroner supports and participates in a variety of research initiatives in order to enhance understanding and public safety in regard to deaths in Ontario. This research study evaluated the drug toxicity deaths of children and youth that the Office of the Chief Coroner investigated during the years 2008-2010. The age group for the purposes of this study included ages 0-19 inclusive. Trends are highlighted as potential focus for future intervention to reduce child and youth deaths from drug toxicity.

Abstract

This research aims to identify trends and describe the extent of drug toxicity deaths among children and youth between the ages of 0-19 years over a three-year period. Most studies on drug toxicity have looked either at drug abuse in adolescents or drug overdose in the general population. This study focuses specifically on the drug toxicity deaths of children and youth in Ontario. Coroner's files were examined to conduct a trend analysis. Data was collected for the period from 2008 to 2010, resulting in a total sample of 47 cases. Prevalence of lethal toxicity from prescription drugs was compared to that of illicit and over the counter drugs, including ethanol (alcohol). None of the three types of drugs showed a statistically significant trend. However, results did show that the majority of deaths occurred due to a lethal dose of prescription drugs (75%), especially among teenagers between 17-19 years of age (81%). Overall, male deaths were much more common than female deaths (72% and 28% respectively). The significant majority of cases were deaths classified as accident (77%). The main recommendation from this study is to make changes to Canadian anti-drug education and awareness programs. Those programs should have a greater emphasis on prescription drugs, particularly opiates, in order to help reduce the number of drug toxicity deaths in youth.

Trends are highlighted as potential focus for future intervention to reduce deaths from drug toxicity.

Background

There is research in Canada on both illicit and prescription drug abuse; however there are a number of gaps that need to be filled. Many studies in Canada and elsewhere show an increase in prescription drug abuse in recent years (1, 2, 3). However, the major focus with regard to prescription drug abuse has been on women and the elderly population, giving teenagers and young adults very little attention (4, 5, 6).

The International Narcotics Control Board (INCB) in its 2010 Psychotropic Substance Publication showed that Canada ranks highest in oxycodone use (per-capita) and fifth in sedative-hypnotic use (7). Sedative-hypnotic drugs include classes of drugs such as benzodiazepines and barbiturates. INCB reports are good indicators of possible drug abuse so such high rankings raise a concern about drug abuse in Canada. Another documented concern is the high cost of treating issues related to the abuse of drugs and alcohol. According to one study, the cost of substance abuse was estimated to be 39.8 billion Canadian dollars in 2002 (8).

Key words: forensic science, forensic pathology, forensic toxicology, overdose deaths, paediatric deaths, prescription drug abuse, toxicity deaths

There are a couple of usual ways to study drug abuse. A common approach is to conduct survey-type studies on recent substance use. However, self-reporting can provide an over or under estimation. Another approach is to look at drug overdose by analyzing either medical records or coroner's reports.

This was a retrospective descriptive study of drug-toxicity deaths (2008-2010) in Ontario using coroners' files from the Office of the Chief Coroner for Ontario (OCC). Drug toxicity deaths can serve as good indicators of drugs of abuse in the province. They can also help to identify areas for improvement in the current anti-drug efforts. The major limitation of this type of study is the sample size which makes it difficult to reach statistically significant results in identifying trends. All paediatric lethal drug toxicity cases that were investigated and closed by a coroner in Ontario between 2008-2010 were included (n=47).

Methods

The first part of the study focused on the identification of trends in paediatric deaths (0-19 years of age) during the year 2009. The purpose of the initial analysis was to identify the most prevalent cause and manner of death to help determine where to focus further investigation and analysis. Identification of trends in the 2009 search, narrowed the research to drug toxicity cases. All paediatric drug toxicity deaths (0-19 years inclusive) were analyzed for a period of three years (2008-2010) for the second part of the study. Overall there were 53 cases identified, however, for six cases toxicology reports were not available. Therefore, those cases had to be omitted from the analysis resulting in the total sample size of 47. A case was included when drug toxicity was listed as the cause of death and toxicology was positive for at least one drug, meaning that there were drug (s) found in the deceased's blood at toxic levels. This study excluded deaths where drugs were known to be a contributing factor, but did not cause the death. Information from coroners' reports (age, gender, region, manner and time of deaths) and toxicology reports (drugs found, amount, matrix) was combined into one database using excel software. For analysis, three major groups were created: 1) deaths with fatally toxic levels of prescription drugs; 2) illicit drugs; and, 3) over-the-counter drugs (including alcohol/ethanol). Descriptive statistics such as gender and age were calculated using excel. A Chi Squared test was done in order to identify any significant differences between the various groups.

Results

When looking at the 2009 deaths only, the majority were classified as accident, defined as occurring without foresight or expectation, especially for 16-18 year olds. The most common type of accident was motor vehicle collision. The second most common cause of accidental death was drug toxicity. Drug toxicity was also a very common contributing factor in other types of death, especially in motor vehicle collisions. The following results are for the second part of the study that focused only on the drug toxicity deaths.

Overall, there were 47 cases analyzed over the three-year period (2008-2010). Out of those, 72% were male and 28% were female. Drug toxicity was found to be the cause of death in cases where the manner of death (MOD) was classified as accident, suicide, homicide and undetermined. The majority of cases were classified as accident (77%).

Figure 1 illustrates the distribution of drug toxicity deaths based on MOD for the three years.

All age groups were considered in the analysis; the majority of deaths occurred among adolescents between the ages of 17-19 (82%). The youngest death due to accidental drug toxicity occurred in 2009 and the child was 18 months old.

Trends in Drug Toxicity – Figure 1

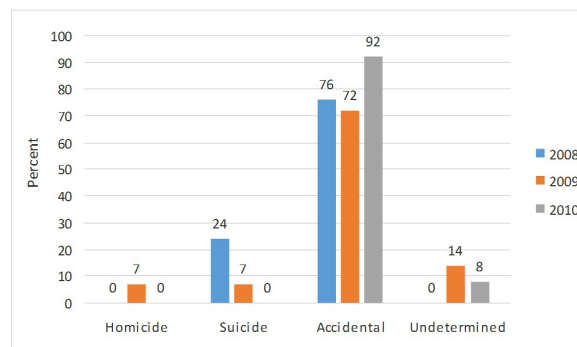


Figure 1: % of drug toxicity deaths based on manner of death (n=47), all age groups combined. 2008: n=21; 2009: n=14; 2010: n=12.

Figure 2 shows the total cases across all ages groups with the three years combined.

All drugs were divided into three main categories: 1) prescription drugs; 2) illicit drugs; and, 3) over the counter (OTC) drugs. Most deaths were due to an overdose from prescription drugs (n = 35; 75%). There were no deaths due to illicit drug overdose in 2009, and no OTC deaths in 2010. Figure 3 shows those results.

Trends in Drug Toxicity – Figure 2

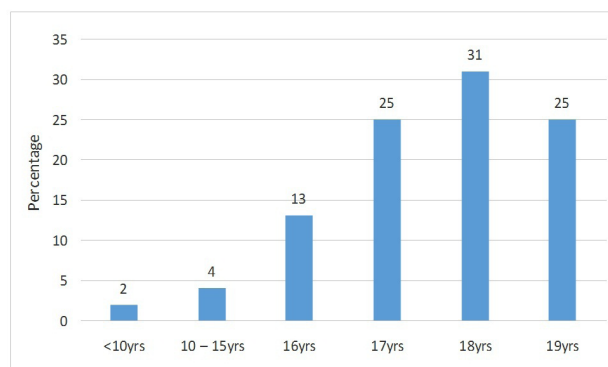


Figure 2: % distribution of drug toxicity deaths based on age (n=47), all 3 years combined.

In **figure 3**, it is noted that deaths due to prescription drugs have been increasing over the years. A chi squared test was performed to determine whether such an increase is significant. The results indicated that it was not significant (p value = 0.155).

Overall, there were ten different types of prescription drugs abused. The most prevailing drugs were opioids, such as morphine (34%).

Figure 4 shows the proportion of all prescription drugs that were found during the analysis. For illicit drugs, only MDMA, widely known as ecstasy, and cocaine were noted. Deaths from OTC/Ethanol included diphenhydramine (an antihistamine), ethanol (alcohol) and one case of caffeine toxicity.

Discussion

The majority of drug toxicity deaths occurred due to an overdose of prescription drugs. As was expected, there was an increase in prescription drug deaths over the years which is consistent to what was observed in other studies (1, 3, 9, 10). Statistically, such an increase is not considered significant. It should be noted that the power of the statistical test that was used was only 11%. The power of the test indicates how effective the test is at detecting any significant differences between the groups. Powerful tests are those that have a power above 80%. Clearly, even if the difference was significant, the test was incapable of identifying it. One of the factors that can increase power is a larger sample size. Therefore, in order to be able to identify any significant differences in fatal prescription drug overdoses, future research should analyse a longer study period (at least 10-15 years). While the study results do not provide statistically significant information on the trends, this research provides some insight into the paediatric drug toxicity situation in Ontario.

Overall findings are similar to what was observed in other jurisdictions. A similar analysis in Michigan showed the majority of drug toxicity cases occurred among adolescents and were classified as accident (11).

Trends in drug toxicity – Figure 3

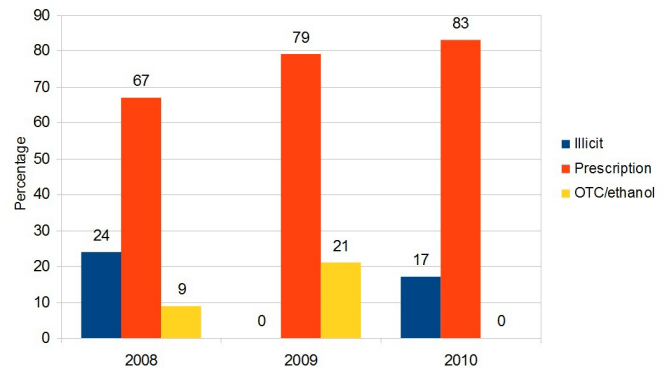


Figure 3: % distribution of drug toxicity deaths based on type of drugs (n=47), all age groups combined. The majority of deaths occurred due to prescription drug overdose.

Trends in drug toxicity – Figure 4

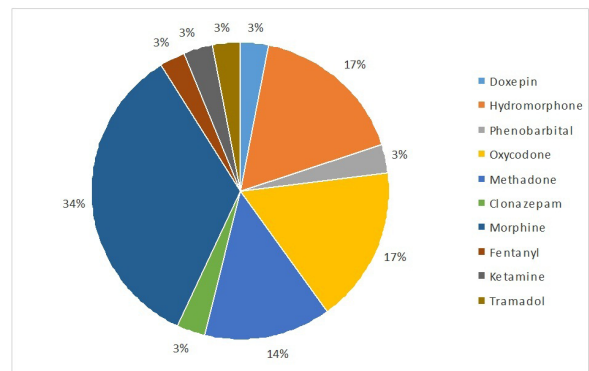


Figure 4: Proportion of prescription drugs (n= 35). Morphine is the most commonly found drug (n=12; 34%), followed by oxycodone (n=6; 17%) and hydromorphone, a derivative of morphine, (n=6; 17%).

Numerous studies have shown that among prescription drugs, opioids are particularly abused (1, 9, 12, 13, 14, 15). According to this study, opioid prescription drugs made up 88% of the prescription drugs and 64% of all the drugs in total that resulted in a drug toxicity fatality. Opioid abuse is dangerous because of the high addiction potential, cognitive impairment effects and a number of other adverse consequences (10). Some of the specific opioid drugs cause even more concern. Oxycodone and hydromorphone were the second commonly abused drugs (17% each) after morphine. Oxycodone has been associated with an increase in drug overdose deaths and in the early 2000's there was a reported 5-fold increase in oxycodone use in Ontario (13, 16).

Since November 2011, Ontarians have been required to show identification to doctors and pharmacies when obtaining prescriptions and buying narcotics. Ontario's Narcotics Monitoring System became fully operational on May 14, 2012 in most pharmacies across Ontario. This was introduced because of the increase in abuse of prescription drugs. A future research study could include the effectiveness of that system in reducing prescription drug abuse. Only a minority of youths obtain drugs by prescription from a doctor (17). Adolescents typically purchase or take prescription drugs from friends or relatives. "In many cases, the medicine cabinet at home has replaced the local drug pusher as the source of teenagers' drugs of choice" (18)

The accidental drug toxicity deaths of younger children generally occurred as a result of inadequate supervision or unsafe storage of medications. Therefore, even if the monitoring system will benefit adults, it is unlikely to have a great impact on prescription drug abuse among children and youth.

There are a number of anti-drug campaigns and programs that try to educate people about drugs and increase public awareness about the risks of drug abuse. The Canadian government has a national anti-drug strategy that focuses on both the prevention and treatment of drug abuse (19). For prevention, one of the main goals is to educate both youth and parents about risks associated with various illegal substances. However, this program focuses on illicit drugs such as cocaine, heroin and methamphetamines. There is a gap in the program as it relates to fatal drug use, since illicit drugs are not the main types of drugs that lead to drug toxicity deaths among children and youth. It has been shown that youth have very limited knowledge on

the potential lethal consequences of OTC drugs (20). As the majority of deaths in this study were classified as accidents, meaning without foresight of expectation, it would seem that adolescents may also not be aware of the potential lethal risk of prescription drug use.

While it is important to educate people, regarding illicit drugs, anti-drug campaigns should provide education and prevention strategies for abuse of a larger spectrum of substances, including prescription drugs. The main recommendation from the evidence in this study is to implement changes in and support for anti-drug programs in Ontario. The public should also be made aware of the dangers of sharing prescription drugs with family and friends, with specific emphasis on the fatal consequences of abuse of opioids, the leading category of drugs found in the toxicology results of the children and youth in this study. In addition to raising awareness of the effects of a wider range of drugs, parents should receive enhanced education on prevention strategies such as storage and disposal of prescription drugs and how to limit access to medications by children of all ages.

The epidemiological data in this study provide a clear overview of the lethal paediatric drug toxicity situation in Ontario. For future research, it would be beneficial to compare this data to that in other provinces in Canada in order to get a wider picture of drug abuse among Canadian children and youth (21).

In many cases, the medicine cabinet at home has replaced the local drug pusher as the source of teenagers' drugs of choice.

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Final Thoughts from the Committee Chair

In closing, I would again like to commend the members of both the Deaths Under Five Committee and the Paediatric Death Review Committee for their diligence, insight and commitment as they worked together assisting the Office of the Chief Coroner in achieving the best understanding of the circumstances of the untimely, often tragic, deaths of children and youth in Ontario.

In 2013, new investigative tools have been introduced with a goal to enhance the understanding of infant deaths, one of the most challenging areas for death investigators. Collation of data provincially will provide greater insight into trends associated with the deaths of infants supporting the progression of the committees towards a public health approach to death review.

Fulsome knowledge of the facts about death, at an individual case level and collectively, is essential to answer questions about each death and will assist in the development of a thematic understanding of deaths and guide data driven public safety initiatives.

The committee will continue to work conscientiously to identify individual case issues and emerging themes to inform recommendations directed to reduce the potential for future deaths of children and youth.

Fulsome knowledge of the facts about death will assist in driving future public safety initiatives.

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Appendix A

Examples of changes made within specific agencies as a result of Internal Child Death Reviews or PDRC recommendations

- The Society has seconded a Public Health Nurse whose primary function is to conduct visits and assessments of infants under the age of 18 months who are referred to the Society. She also makes herself available to provide information or to gather relevant health related resources for workers with specific health related requests.
- The Society has developed and implemented an education program to enhance staff understanding of the language related to sudden infant deaths. 'Policy and Procedures for Investigations Following the Death of a Child' requires all deaths on active cases to be investigated by a Senior Child Protection Worker. All deaths are identified as critical incidents, thereby ensuring appropriate support is provided to all involved staff immediately following the death of the child.
- The Society has participated in the development of a community Anti-Bullying Collaborative Strategy Committee and with the school board in a Community Threat Assessment Protocol.
- The Society's Resource Department has developed a plan to ensure that foster parents who are providing care to medically fragile children have adequate ongoing supports and relief during periods of medical crisis.
- The Society has created a more comprehensive and rigorous file audit process utilizing a newly developed Critical Case Review Tool.
- The Society staff participated in a three day Prescription Drug Abuse Conference which included strategies to improve family functioning and promoting positive behaviours through service planning.
- An external consultant assisted the Society in reviewing its service and developing a strategic action plan in working with high risk families. The review team established suicide assessment criteria to assist in decision making for children and youth at high risk of attempting suicide.
- Training was provided to child protection staff on the importance of checking historical records on all caregivers involved with a child and incorporating them into ongoing safety and risk assessments. Additional training was delivered on engaging fathers in services and assessing their role in the family.
- The Society reviewed and revised the pamphlets being provided to caregivers on various child safety topics to include all developmental stages and water safety.
- The "Transfer of Child Protection Cases Protocol" was revised and reviewed with staff at two agencies where frequent transfers of cases occur.
- Society protection staff and supervisors received a series of workshops focusing on substance abuse and its effect on parenting and children.
- The Society is in the process of developing a policy on High Risk/Vulnerable Children and will ensure all staff understands the purpose of the internal Child Protection Review Team as a resource related to high risk and complex case management.
- The Society has initiated a process to help ensure consistency and comprehensiveness in supervision documentation. Tools are being developed to assist managers in monitoring the documentation of supervision notes and follow up on agreed plans.
- All supervisors have been reminded to assess all circumstances, including a new pregnancy and the impact an infant will have on a family, when considering file closure.
- The Society has updated its family services manual and included all recommendations from Internal and PDRC reviews in the revisions.

Appendix B - PDRC (Child Welfare) – Definitions of Risk

Category of Risk Factor	Definition
Substance Abuse	CAS documented that at least one of the caregivers suffered from substance abuse issues.
Mental Health	CAS documented that at least one of the caregivers suffered from mental health issues.
Domestic Violence	The CAS has documented that the caregiver(s) had been involved in at least one domestic violence incident, either as victim or perpetrator.
Criminal Activity	There is evidence from the records that one or both caregivers had been involved in criminal activity, involving police and or the courts.
Physical Abuse	It was suspected and/or verified by a CAS on at least one occasion, that the child/children in the family were victims of physical abuse.
Emotional Abuse	It was suspected and/or verified by a CAS on at least one occasion, that the child/children in the family were victims of emotional abuse.
Sexual Abuse	The CAS had documented history of sexual abuse within the family (caregivers were themselves victims or perpetrators) and/or the CAS has suspected and/or verified on at least one occasion that the child/children in the family were victims of sexual abuse and/or perpetrators.
Neglect/Inadequate Supervision	It was suspected and/or verified by a CAS on at least one occasion, that the child/children in the family were victims of neglect or inadequate supervision.
3 or more CAS Openings	A CAS had opened a file relating to the caregiver(s) on at least three separate occasions
3 or more CAS Referrals	A CAS had received at least three separate referrals relating to the caregiver(s) (referrals could have been received during one opening, or during a number of openings).
Previous Death	The caregiver(s) have experienced a previous death of a child.
Caregiving Capacity	The CAS or PDRC has noted concerns about the caregiver(s) parenting capacity either before or after the death of the child.
Childhood History with CAS	One or both of the caregivers has had involvement with the CAS as a child.
Childhood History with CAS	One or both of the caregivers has had involvement with the CAS as a child.
Youth of Caregiver (<24)	One or both of the caregivers are under the age of 24 years.
High Risk Subject Child (<1 year and/or special needs)	The deceased child was under the age of one year or experienced special needs.
Unsafe or hazardous living conditions	The deceased child was living in unsafe or hazardous living conditions.
Low level of cooperation and/or motivation for intervention	The record demonstrates a history of unsuccessful attempts to engage and/or motivate the caregivers into a voluntary working relationship in order to mitigate risk to the children.
Other	Other problems/issues that may increase risk to the children

NOTES

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