The **C**hild **H**ealth **S**tandards **C**ommittee Annual Report

2004

THE COLLEGE OF PHYSICIANS & SURGEONS OF MANITOBA

Acknowledgements

The Child Health Standards Committee (CHSC) wishes to acknowledge the continuing support of the following organizations. The information they provide has assisted the CHSC in its deliberations.

- Office of The Chief Medical Examiner
- Manitoba Vital Statistics
- Medical Records Departments, Manitoba Hospitals
- First Nations and Inuit Health Branch, Health Canada
- Insurance Division, Manitoba Health
- IMPACT, the injury prevention centre of Children's Hospital

The CHSC acknowledges the interest and cooperation of physicians and health care facilities across the province in providing information for the review process.

Due to the extensive and complex nature of these reviews, which rely on completed reviews from other standards committees, and the need to obtain documentation from numerous points of contact in the healthcare system, the CHSC annual reports are typically published several years after the date of death. This report summarizes deaths which occurred in 2004.

The committee is grateful to Manitoba Health for providing financial support.

Executive Summary 2004

- The Child Health Standards Committee (CHSC) reviewed 104 deaths which occurred in 2004. Sixty-three were children 29 days to 14 years of age, 34 were teens 15 to 17 years of age, one was an infant less than 29 days of age, and six were children whose place of residence was out of province.

- The mortality rate for Manitoba children aged 29 days to 14 years was 26.7 per 100,000 in 2004 compared to 32.2 per 100,000 in 2003 and 31.9 per 100,000 in 2002. The mortality rate for Manitoba teens 15-17 years of age was 67.4 per 100,000 in 2004 compared to 38.0 per 100,000 in 2003 and 53.8 per 100,000 in 2002.

- The infant mortality rate was 6.1 per 1,000 live births, a slight increase compared to 2003, when it was 5.9. Manitoba continues to have one of the highest infant mortality rates in Canada.

- The cause of death was classified as preventable for 35 of the 63 child deaths (56%) and 22 of the 34 teen deaths (65%). Injury (unintentional injury, suicide, homicide) accounted for the majority (89%) of the preventable deaths.

- Injury was the leading cause of death overall, accounting for 53% of deaths among children and teens. In children 29 days to 14 years of age, the most common causes of injury-related mortality were drowning, pedestrian injuries, choking/suffocation, and homicide. The most common causes of injury-related mortality in teens were suicide and motor vehicle collisions. Young drivers were involved in 2 of the 4 teen motor vehicle deaths. None of the victims had been wearing a seat belt.

- More than one-third (38%) of the deaths of infants 29 days to one year of age were sudden and unexplained infant deaths during sleep (SIDS, SUID, asphyxia with co-sleeping adults). Among these ten cases, three were co-sleeping in adult beds, two were placed to sleep alone in an adult bed, and one was co-sleeping on a sofa. Only two infants were placed to sleep in a crib and only three infants were put to sleep on their back. Six of these infants had at least two modifiable risk factors for sudden infant death.

- First Nations children aged 29 days to 14 years were 6.4 times more likely to die than other Manitoba children. First Nations children accounted for 30 of 63 childhood deaths in Manitoba (48%). Mortality rates off-reserve were 1.4 times higher than on-reserve; this increase related to natural deaths, primarily infectious diseases.

- In 2004, the CHSC initiated educational actions with seven physicians with respect to medical care provided. Eight actions were directed to healthcare administrators and seven additional referrals were made to other professional bodies, organizations, and government departments. In five cases, educational action was taken by another standards committee.

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Definitions

Age-Standardized Rates: Death rates are adjusted to account for the differing proportions of children by age group in different regions. Because infants are more likely to die than older children, a region with a higher proportion of infants would have an inflated death rate unless adjustments are made.

Delayed Neonatal Death: The death of an infant occurring after 28 days of age, who under natural selection circumstances, without the benefit of neonatal intensive care, would have died before 28 days of age.

Mortality Rate: The number of deaths occurring in a specified population per 100,000 population per year. Mortality rates for children under five years of age are usually reported as deaths per 1,000 population or 1,000 live births.

Infant Mortality Rate: The number of deaths occurring prior to one year of age per 1,000 live births.

Neonatal Mortality Rate: The number of neonatal deaths per 1,000 live births.

- **Early:** before the 7^{th} full day of life (<168 hours), or
- **Late:** between the 8^{th} and 28^{th} full day of life (≥168 hours to <672 hours)

Post-Neonatal Mortality Rate: The number of deaths from 29 days to one year of age per 1,000 live births.

Under Five Mortality Rate: The number of deaths occurring prior to five years of age per 1,000 population.

First Nations: An individual who is registered under *The Indian Act of Canada*.

Non-First Nations or Other: All non-First Nations people, and those Métis and people of aboriginal descent who are not registered under *The Indian Act of Canada.*

Three-Year Moving Average: Three-year moving averages are used in some of the calculations because large fluctuations in rates may occur from year to year in small populations such as Manitoba. This rate is calculated by averaging the rate for 3 one-year periods and presenting that rate using the median year. For example, data for 1999, 2000, and 2001 rates are averaged and presented as a "2000" rate.

1. Introduction

Background

In 1976, The College of Physicians & Surgeons of Manitoba established the Paediatric Death Review Committee. In 2001, this committee was renamed the Child Health Standards Committee. This committee reports to the Central Standards Committee of The College of Physicians & Surgeons. The major function of all Standards Committees is to maintain and improve quality of care through education. ***These educational functions of the College are separate and distinct from its disciplinary functions.***

Educational strategies used by the Child Health Standards Committee include:

- Sending letters to physicians, hospitals, Area Standards Committees, and regulatory agencies for other health professionals.
- Publishing articles in the College Newsletters and Annual Reports to draw members' attention to important aspects of medical care involving children.
- Recommendations for clinical practice guidelines to enhance paediatric care.
- Advocating for the health of Manitoba children by informing government and other public agencies of recommendations to improve legislation or public policy.

Goals and Objectives

To monitor and improve the quality of medical care provided to Manitoba children by:

- Reviewing all deaths in the province of children between the ages of 29 days and the day before their 18th birthday.
- Determining whether each death was preventable at the family, community or medical care level.
- Communicating with involved practitioners or agencies where medical care could have affected the outcome.
- Making recommendations to government, medical organizations, and the community at large regarding preventable mortality and morbidity.

2. Committee Activities

In addition to reviewing deaths, the Child Health Standards Committee functions as a sounding board for child health issues for the College of Physicians and Surgeons.

The Medical Consultant conducts the initial case reviews and, with the administrative assistant, sends out and receives correspondence, maintains the database, contributes to the development of draft Guidelines and Newsletter items, attends relevant meetings, and collaborates with other interested parties.

Regional mortality rates are reported using the boundaries of the Manitoba Regional Health Authorities. In addition, the Committee divided Manitoba into three broad geographic regions: Urban (Winnipeg and Brandon); South (Assiniboine, Central and South Eastman); and North (Churchill, Burntwood, NorMan, North Eastman, Parkland and Interlake).

(Please refer to Definitions in Appendices.)

Newsletter Items

The CHSC published five Newsletter items in 2004:

- Sudden Cardiac Death – Children and Teens
- Assessment of Neonates for Suspected Congenital Heart Disease
- Provincial Immunization Safety Policy: Anaphylaxis Management
- Adverse Drug Reporting - Transdermal fentanyl (Duragesic): respiratory arrests in adolescents
- Fetal Alcohol Spectrum Disorder: Diagnostic Services

Other Committee Activities

The CHSC conducted three Morbidity/Mortality audits in 2004:

- Suicide: Children and Teens
- Pneumococcal septicemia, pneumonia, and meningitis
- Propofol infusion in paediatric patients

The CHSC advocated for the following issues in 2004:

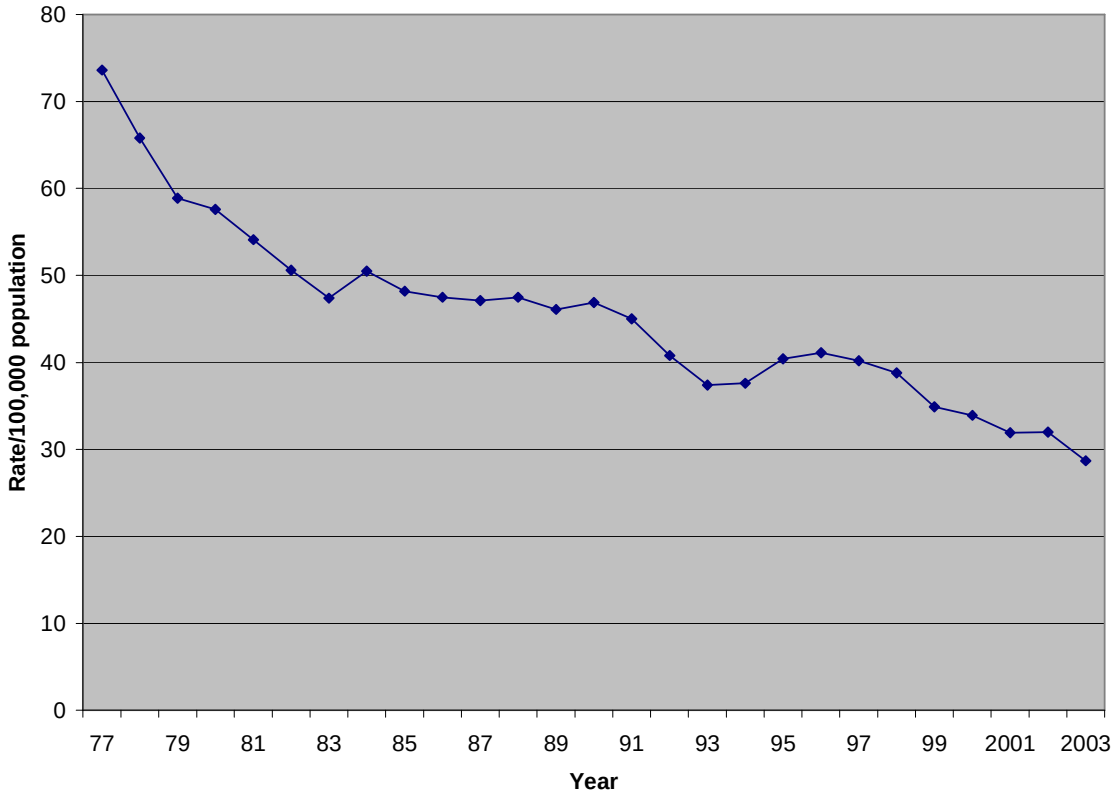
- Use of standardized Canadian paediatric triage guidelines in Manitoba hospitals
- Routine blood pressure documentation for hospitalized children
- Safe sleep guidelines, policies, and public education
- Public education regarding the risks of infant bath seats
- Medication safety in foster homes

3. Statistical Summary

Mortality Rates

Figure 1 shows the three-year moving average trends in paediatric mortality from 1977 to 2004 for Manitoba residents. *The 2004 data are included in the three-year moving average reported as 2003.*

Figure 1 – MORTALITY RATES
In Children 29 Days to 14 Years
(Three-Year Moving Average)



Deaths Grouped by Age and Gender For Manitoba Residents

Table 1 – MORTALITY RATES BY AGE GROUP 2004				
Age Group	**Number of Deaths**	**Population**	**Rate/100,000**	**Three-Year Average (2002 – 2004)**
29 days to <1 year	26	14,009	185.6	206.2
1 to 4 years	14	57,636	24.3	28.2
5 to 9 years	8	78,437	10.2	10.4
10 to 14 years	15	85,866	17.5	21.6
Total 29 days to 14 years	**63**	**235,948**	**26.7**	**30.3**
15 to 17 years	34	50,460	67.4	53.1

Table 2 – MORTALITY RATES BY GENDER 2004				
Gender	**Number of Deaths**	**Population**	**Rate/100,000**	**Three-Year Average (2002 – 2004)**
Male 29 days to 14 years	33	120,822	27.3	34.9
Female 29 days to 14 years	30	115,126	26.1	25.4
Male 15 to 17 years	23	25,863	88.9	72.4
Female 15 to 17 years	11	24,597	44.7	32.7

Infant Mortality Rates

In 2004, there were 26 deaths in the Manitoba population between 29 days and one year of age. The number of live births based on Manitoba Health registrations was 15,815. This gives a post-neonatal infant mortality rate of 1.6 per 1,000 live births. There were also 70 neonatal deaths in the first 28 days of life. The neonatal mortality rate was 4.4 per 1,000 live births.

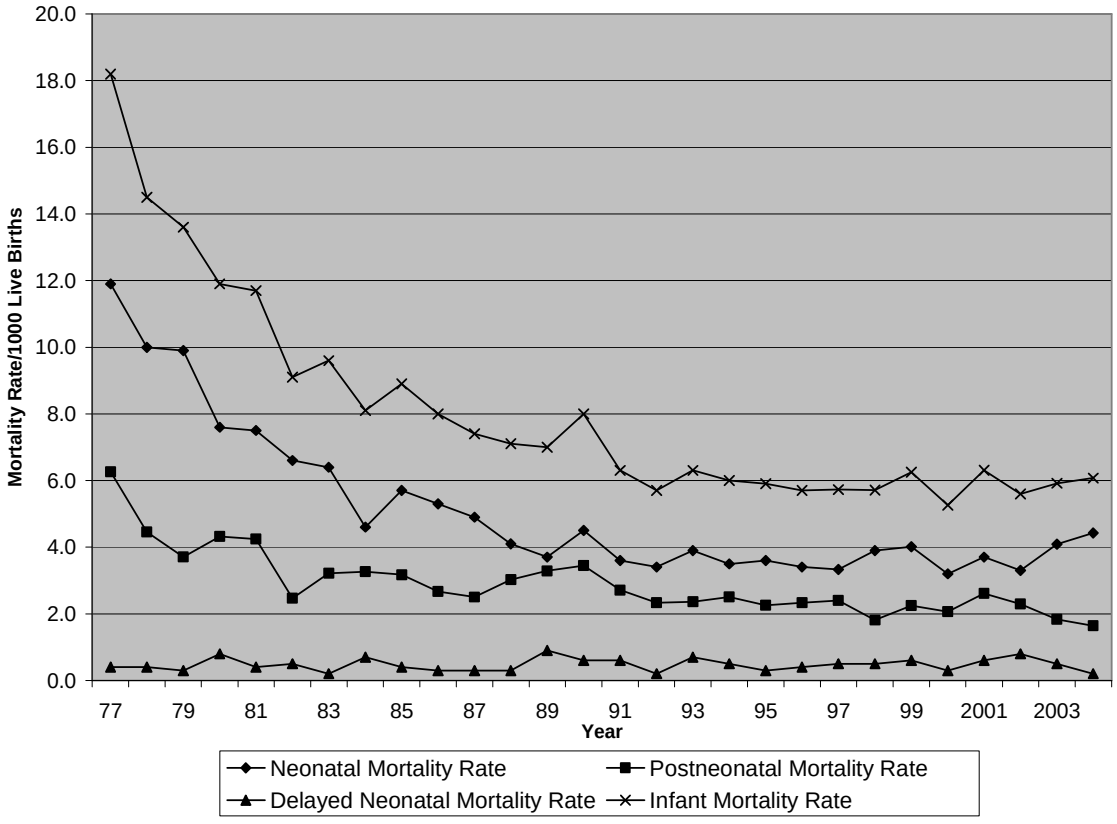
Combining the neonatal mortality rate with the post-neonatal mortality rate gives an overall infant mortality rate of 6.1 per 1,000 live births. This rate has shown a slight increase over the past three years. These figures do not include neonates born weighing <500 grams.

For First Nations infants, there were 21 neonatal deaths and 15 post-neonatal deaths among 2,123 live deliveries for an infant mortality rate of 9.8 per 1,000 live births. For non-First Nations infants, there were 118 neonatal and 11 post-neonatal deaths among 13,692 live deliveries for a rate of 9.8 per 1,000 live births. The First Nations infant mortality rate was 1.02 times that for non-First Nations infants.

Infant Mortality Rates Continued

Figure 2 shows Manitoba infant mortality rates over time. Also plotted are neonatal, post-neonatal and delayed neonatal infant mortality rates. When children's lives are prolonged by technology and they die from neonatal illnesses after 28 days, they are classified as delayed neonatal deaths and become part of the post-neonatal infant mortality statistic. In 2004, three infants less than one year of age were classified as dying from delayed neonatal causes. Infant mortality rates have remained stable for the past decade.

Figure 2 – INFANT MORTALITY RATES



Infant Mortality Rates Continued

Table 3 shows Statistics Canada infant mortality rates for Canada as a whole, and by province. The Statistics Canada figures for Manitoba are slightly different than those presented in this report. Statistics Canada counts babies born in Manitoba to mothers from out of province as being the responsibility of Manitoba. They also count registered births and neonatal deaths weighing less than 500 grams, which are not included in our statistics.

Province/Country	1997	1998	1999	2000	2001	2002	2003	2004
Canada	**5.5**	**5.3**	**5.3**	**5.3**	**5.2**	**5.4**	**5.3**	**5.3**
British Columbia	4.7	4.2	3.8	3.7	4.1	4.6	4.2	4.3
Nova Scotia	4.4	4.6	4.0	4.9	5.6	4.2	5.7	4.6
Alberta	4.8	4.8	5.8	6.6	5.6	7.3	6.6	5.8
Ontario	5.5	5.0	5.4	5.6	5.4	5.3	5.3	5.5
Yukon	8.4	5.1	2.6	2.7	8.7	8.8	6.0	11.0
Quebec	5.6	5.6	4.9	4.7	4.7	4.8	4.4	4.6
Newfoundland	5.2	6.2	4.9	4.9	4.9	4.5	5.0	5.1
New Brunswick	5.7	6.5	5.0	3.5	4.3	3.8	4.1	4.3
Manitoba	**7.5**	**6.7**	**8.4**	**6.5**	**7.0**	**7.1**	**8.0**	**7.0**
Saskatchewan	8.9	7.1	6.3	6.8	5.5	5.7	6.3	6.2
Prince Edward Island	4.4	8.0	6.6	3.5	7.2	1.5	4.9	4.3
Northwest Territories	10.9	18.5	16.7	8.9	4.9	11.0	5.7	0
Nunavut			10.9	12.3	16.9	11.0	19.8	16.1

Sources: Statistics Canada. Tabulations from Health Statistics Division. *The Daily, July 1998, June 1999.*
Statistics Canada. *1998 Catalogue No. 840211XPB.*
Statistics Canada. *1999 Catalogue No. 84F0211XPB*
Statistics Canada. Table 102-0507, Table 102-0504
http://www40.statcan.ca/l01/cst01/health21a.htm

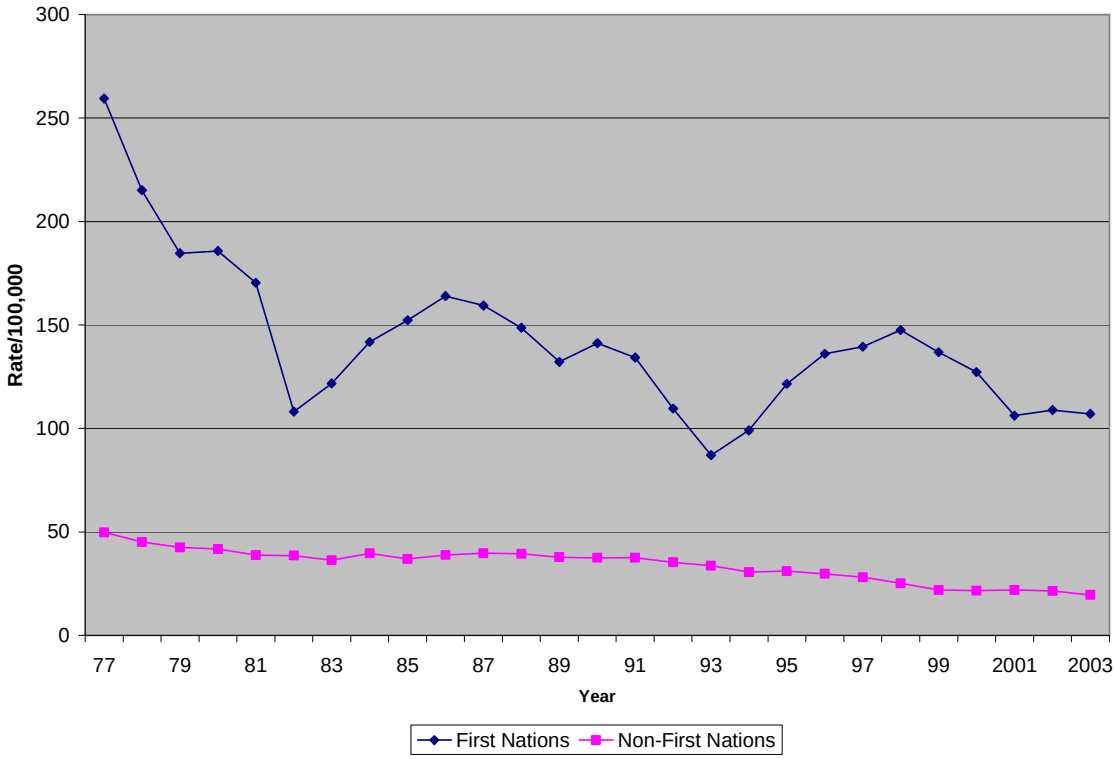
First Nations Mortality Rates

In 2004, First Nations children accounted for 12.4% of the population aged 29 days to 14 years in Manitoba and 46% of childhood deaths. There were 30 deaths among registered First Nations children (population 29,157) and 33 among all others (population 206,791). The mortality rate for First Nations children was 102.9 per 100,000, and for all others 16.0. Therefore, First Nations children were 6.4 times more likely to die than other Manitoba children. This is similar to 2003, and an increase from 5.0- and 4.2-fold increases in mortality rates for First Nations vs. non-First Nations children in 2001 and 2002 respectively.

In Manitoba in 2004, 58% of First Nations children resided in First Nations communities. Of the 30 First Nations children who died, 15 resided in First Nations communities and 15 resided in other communities. Mortality rates for First Nations children were 89.2 per 100,000 residing in First Nations communities, and 121.6 per 100,000 First Nations children residing in all other communities.

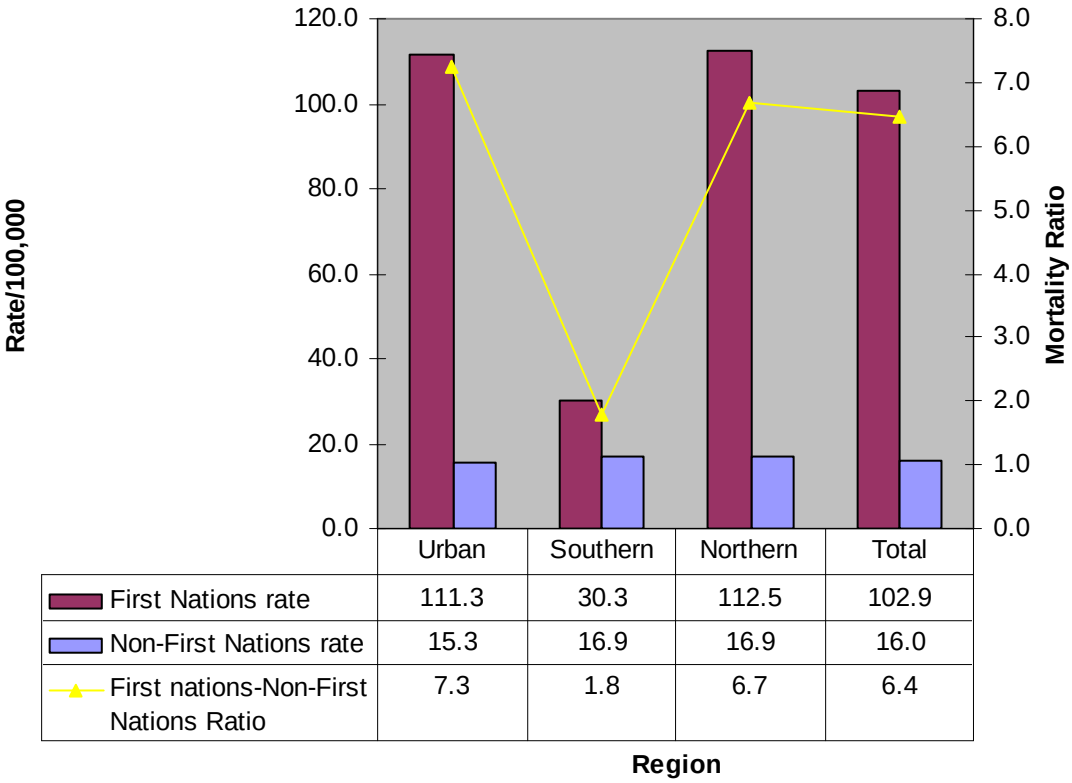
(The Manitoba Health Client Registry is used for these calculations for both deaths and population figures. These data are felt to represent approximately two-thirds of First Nations individuals in Manitoba.)

Figure 3 – MORTALITY RATES FOR FIRST NATIONS vs. NON-FIRST NATIONS CHILDREN
In Children 29 Days to 14 Years
(Three-Year Moving Average)



First Nations Mortality Rates Continued

Figure 4 – MORTALITY RATES BY GEOGRAPHIC REGION
FIRST NATIONS vs. NON-FIRST NATIONS
In Children 29 days to 14 years



	Urban	Southern	Northern	Total
First Nations rate	111.3	30.3	112.5	102.9
Non-First Nations rate	15.3	16.9	16.9	16.0
First nations-Non-First Nations Ratio	7.3	1.8	6.7	6.4

Region

Definition of geographic regions for the purpose of this report:

- North Rural – Churchill, Burntwood, NorMan, North Eastman, Parkland and Interlake RHAs
- South Rural – Assiniboine (Marquette and South Westman), Central and South Eastman RHAs
- Urban – Winnipeg and Brandon RHAs

Regional Mortality Rates

Table 4 – REGIONAL MORTALITY RATES 2004
In Children 29 Days to 14 Years

Note: Data are presented in descending order of three-year average rates

RHA	Number of Deaths	Population	Rate per 100,000	Three-Year Average Rates (2002 – 2004)
Burntwood	15	15,336	97.8	97.9
NorMan	3	6,575	45.6	45.4
Assiniboine	2	12,969	15.4	42.5
Central	4	23,503	17.0	31.5
All Manitoba	**63**	**235,948**	**26.7**	**30.3**
Parkland	2	8,449	23.7	23.6
Winnipeg	25	121,533	20.6	23.4
North Eastman	3	8,477	35.4	23.3
Interlake	4	15,193	26.3	21.9
Brandon	2	9,485	21.1	21.0
South Eastman	3	14,181	21.2	19.4
Churchill	0	247	0.0	0.0

Causes of Childhood Death

Table 5 shows the causes of death in children 29 days to 14 years of age.

In 2004, 63 deaths of Manitoba children were reviewed. Injury accounted for 46% of these deaths. The CHSC reviewed six deaths of children from out of province. One death of a child less than 29 days of age was also reviewed under the CHSC mandate.

Table 5 – CAUSES OF DEATH
In Children 29 Days to 14 Years

Cause of Death	Deaths	Rate per 100,000
Injury Total	28	11.9
Unintentional Injury	21	8.9
Intentional Injury*	7	3.0
Sudden Unexplained Deaths	11	4.7
Infectious Disease	4	1.7
Respiratory System	4	1.7
Neoplasm	4	1.7
Nervous System	3	1.3
Congenital Anomaly	2	0.8
Diseases of the Digestive System	2	0.8
Sudden Infant Death Syndrome	1	0.4
Conditions Originating in Perinatal Period	1	0.4
Circulatory System	1	0.4
Endocrine, Nutritional, Metabolic	1	0.4
Disease of the Blood and Blood-forming Organs	1	0.4
Total	**63**	**26.7**

*Intentional Injury includes homicide and suicide.

Causes of Childhood Death Continued

Table 6 lists the frequency of various causes of post-neonatal infant mortality among Manitoba residents 29 days to one year of age.

Table 6 – CAUSES OF POST-NEONATAL INFANT DEATH
In Children 29 Days to 1 Year

Cause of Death	Deaths	Rate per 100,000
Sudden Unexplained Deaths	7	50.0
Injury Total	6	42.8
Unintentional Injury	5	35.7
Intentional Injury*	1	7.1
Infectious Disease	3	21.4
Nervous System	3	21.4
Congenital Anomaly	2	14.3
Respiratory System	1	7.1
Sudden Infant Death Syndrome	1	7.1
Conditions Originating in Perinatal Period	1	7.1
Circulatory System	1	7.1
Endocrine, Nutritional, Metabolic	1	7.1
Total	**26**	**185.6**

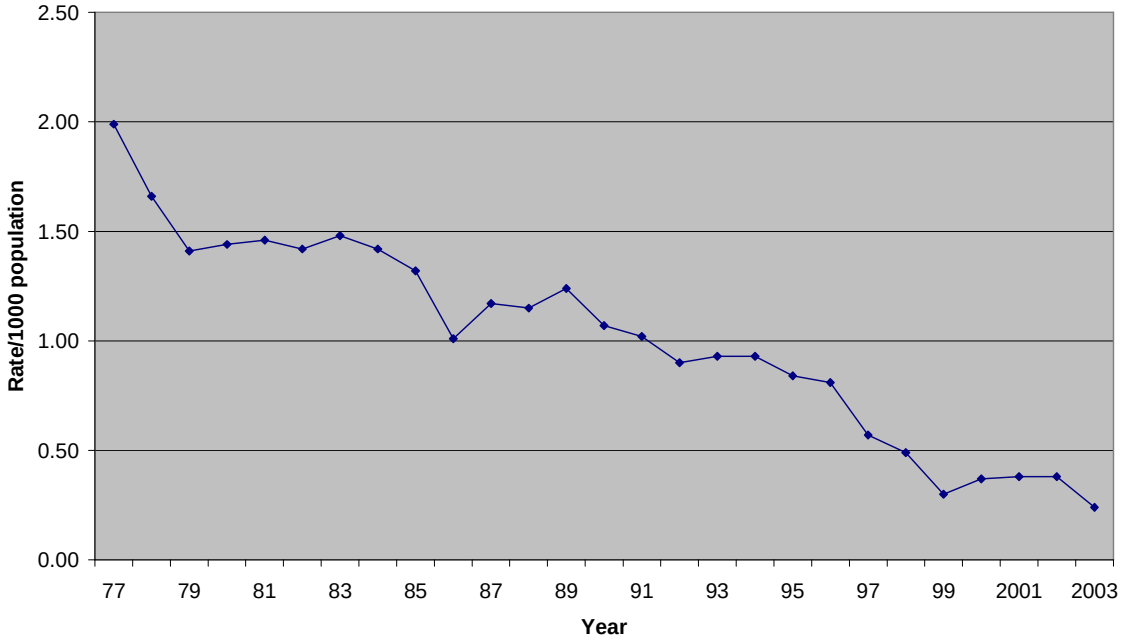
*Intentional Injury (homicide).

Infant deaths are classified as Sudden Infant Death Syndrome (SIDS) if they remain unexplained by clinical history, death scene investigation (by police), and detailed post mortem examination including skeletal x-rays and toxicology. Sudden Unexplained Infant Deaths (SUID) are those with historical, investigative or post mortem findings which suggest, but do not confirm a cause of death.

Sudden Infant Death Syndrome (SIDS)

Figure 5A shows the three-year moving average rates for Sudden Infant Death Syndrome (SIDS) from 1977 to 2004. Data for 2004 are included in the 2003 three-year average (2002-2004). There was a consistent decline in SIDS rates until 1999. In 2004, there was one case of SIDS in the 29 days to one-year age group. Known SIDS risk factors included bedsharing and side sleeping position.

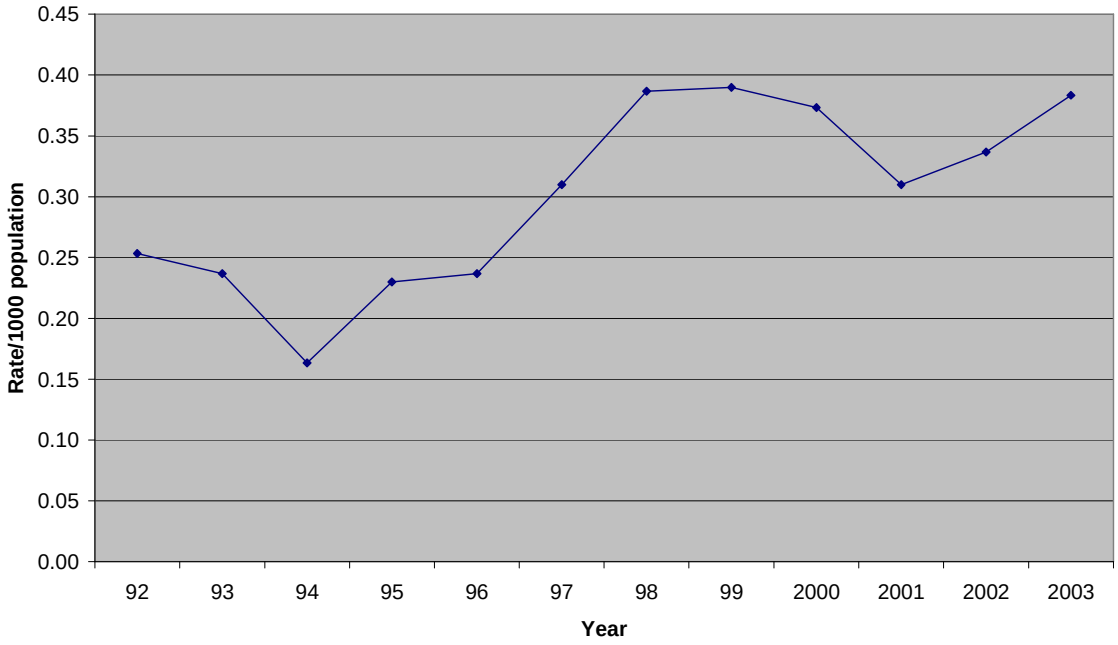
Figure 5A – SUDDEN INFANT DEATH SYNDROME (SIDS)
In Children 29 Days to 1 Year
(Three-Year Moving Average)



Sudden Infant Death Syndrome (SIDS) Continued

Figure 5B shows the three-year moving average rates for Sudden Unexplained Infant Death (SUID) from 1992 to 2004. Data for 2004 are included in the 2003 three-year average (2002-2004). In 2004, there were seven cases of SUID in the 29 days to one-year age group; one additional case occurred in an infant less than 29 days.

Figure 5B – SUDDEN UNEXPLAINED INFANT DEATH (SUID)
In Children 29 Days to 1 Year
(Three-Year Moving Average)



More than one-third (38%) of the deaths of infants 29 days to one year of age were sudden and unexplained infant deaths during sleep (SIDS, SUID, asphyxia with co-sleeping adults). Among these ten cases, three were co-sleeping in adult beds, two were placed to sleep alone in an adult bed, and one was co-sleeping on a sofa. Only two infants were placed to sleep in a crib and only three infants were put to sleep on their back. Six of these infants had at least two modifiable risk factors for sudden infant death. Seven were First Nations children.

Deaths from Injury - Trends

Figures 6A and 6B show the three-year moving average rates for injury deaths (unintentional and intentional combined) for children 29 days to 14 years of age. Data for 2004 are included in the 2003 three-year average (2002-2004).

Figure 6A – MORTALITY RATES FROM INJURY In Children 29 Days to 14 Years (Three-Year Moving Average)

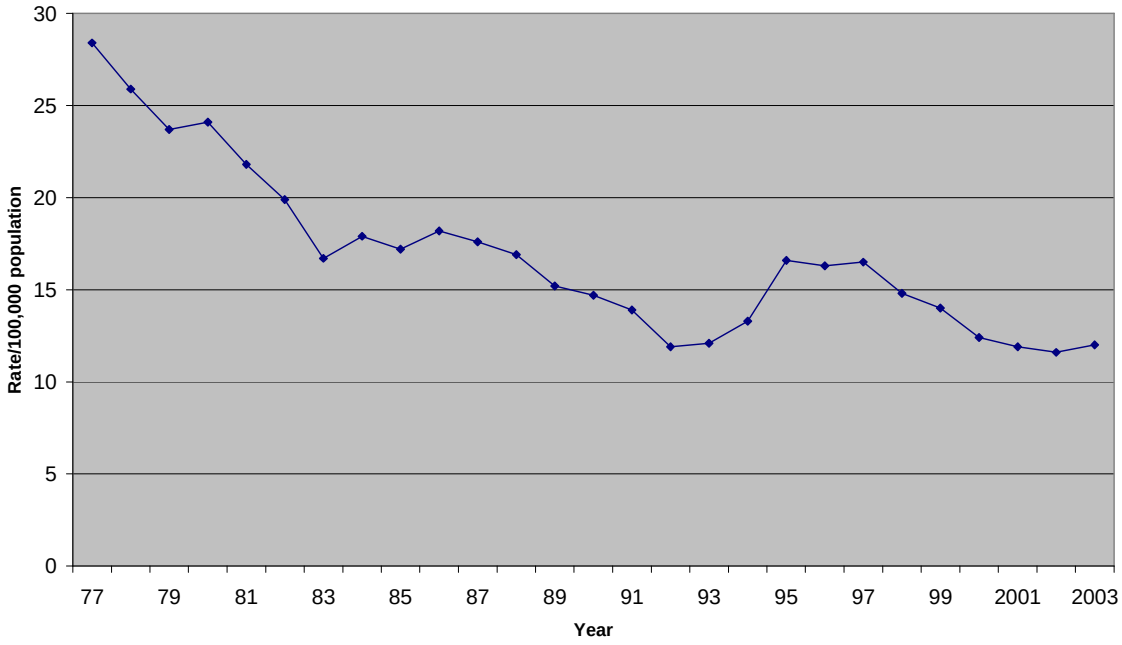
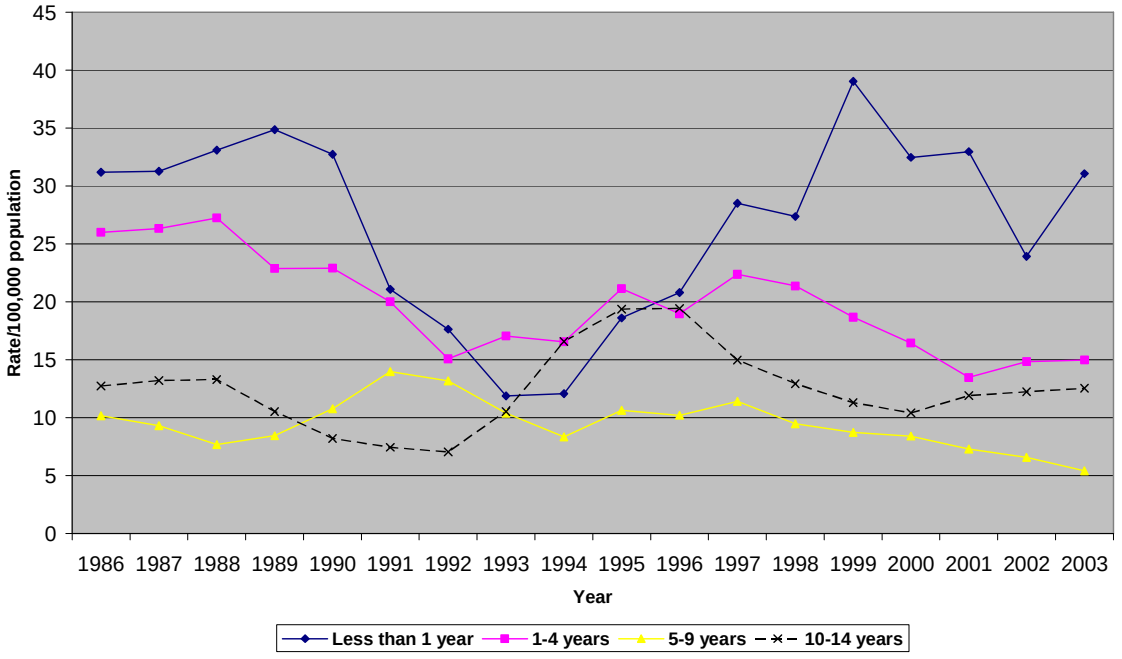


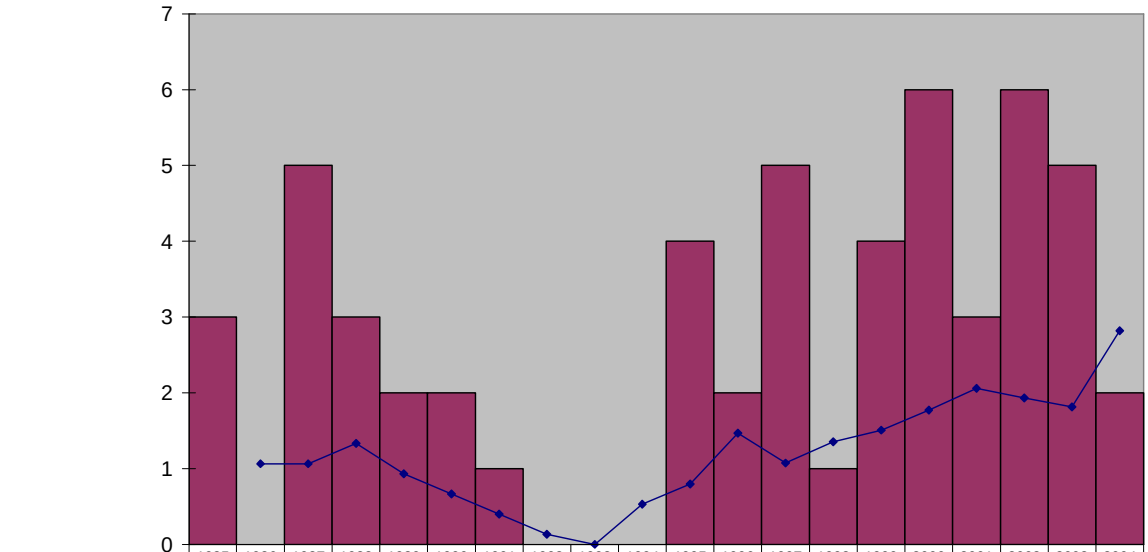
Figure 6B – MORTALITY RATES FROM INJURY by Age Group (29 Days to 14 Years) (Three-Year Moving Average)



Deaths from Injury – Trends Continued

Figure 6C shows the annual number of suicides and the three-year moving average rates for suicide for children 14 years of age and younger. Data for 2004 are included in the 2003 three-year average (2002-2004). The annual number and rates of suicide have been increasing steadily in this age group in recent years.

Figure 6C – SUICIDES AMONG CHILDREN 14 YEARS OF AGE AND YOUNGER
Number per year and Three-Year Moving Averages



	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Number	3	0	5	3	2	2	1	0	0	0	4	2	5	1	4	6	3	6	5	2
3 Year Average Rate		1.1	1.1	1.3	0.9	0.7	0.4	0.1	0.0	0.5	0.8	1.5	1.1	1.4	1.5	1.8	2.1	1.9	1.8	2.8

In 2004, there were 28 deaths due to injury among Manitoba children 14 years of age and under. Injuries caused 44% of all deaths of children between 29 days and 14 years of age (28 of 63).

Table 7 – INJURY-RELATED MORTALITY RATES BY AGE GROUP 2004

Age Group	Number of Deaths	Population	Rate/100,000	Three-Year Average 2002-2004
29 days - 1 year	6	14,009	42.8	31.1
1 - 4 years	9	57,636	15.6	15.0
5 - 9 years	3	78,437	3.8	5.4
10 - 14 years	10	85,866	11.6	12.5
Total	**28**	**235,948**	**11.9**	**11.8**

Deaths from Injury – Trends Continued

Table 8 – TYPES OF INJURY CAUSING DEATH 2004 In Children 29 Days to 14 Years					
Unintentional			**Intentional**		
Cause	**Number**	**Rate**	**Cause**	**Number**	**Rate**
Drowning	7	3.0	Suicide (hanging)	2	0.8
Pedestrian	4	1.7			
Choking/Suffocation	3	1.3	Homicide	5	2.1
Motor Vehicle (passenger)	2	0.8			
Fire	2	0.8			
Falls	1	0.4			
Poisoning	1	0.4			
Farm machinery	1	0.4			
Total	**21**	**8.9**	**Total**	**7**	**3.0**

There were 21 deaths related to unintentional injuries and seven deaths related to intentional injuries (two suicides and five inflicted injuries).

The most common cause of unintentional injury death was drowning. Two infants were found submerged after being placed in bath seats, in separate incidents; these led to a media release by the Office of the Chief Medical Examiner regarding the risks of leaving children unattended in bath seats. An older child also drowned in a bathtub. A 22 month old toddler was found submerged in a hot tub; this death was the subject of an inquest. Three children drowned in remote communities; two while playing on or near the water, and one who fell through the ice while intoxicated.

Four children died as a result of pedestrian injuries. Three toddlers were run over (or backed over) by vehicles on remote and rural/farm properties; these incidents were characterized by poor driver visibility, and involved a truck, 15 passenger van, and tractor. An older child crossed into the path of a vehicle which was unable to stop related to poor weather.

Three infants died as a result of suffocation by various soft objects (clothing, pillow, bedding) during sleep.

Two siblings, along with their parents, died in a house fire. A smoke alarm was in use and audible by bystanders. Careless cooking and alcohol consumption were implicated in this incident.

Two passengers died in motor vehicle crashes. Seat belts were in use in one incident and unknown in the other. Road conditions (ice) were a factor in one crash. Alcohol and substance use were not implicated in either incident.

Deaths from Injury – Trends Continued

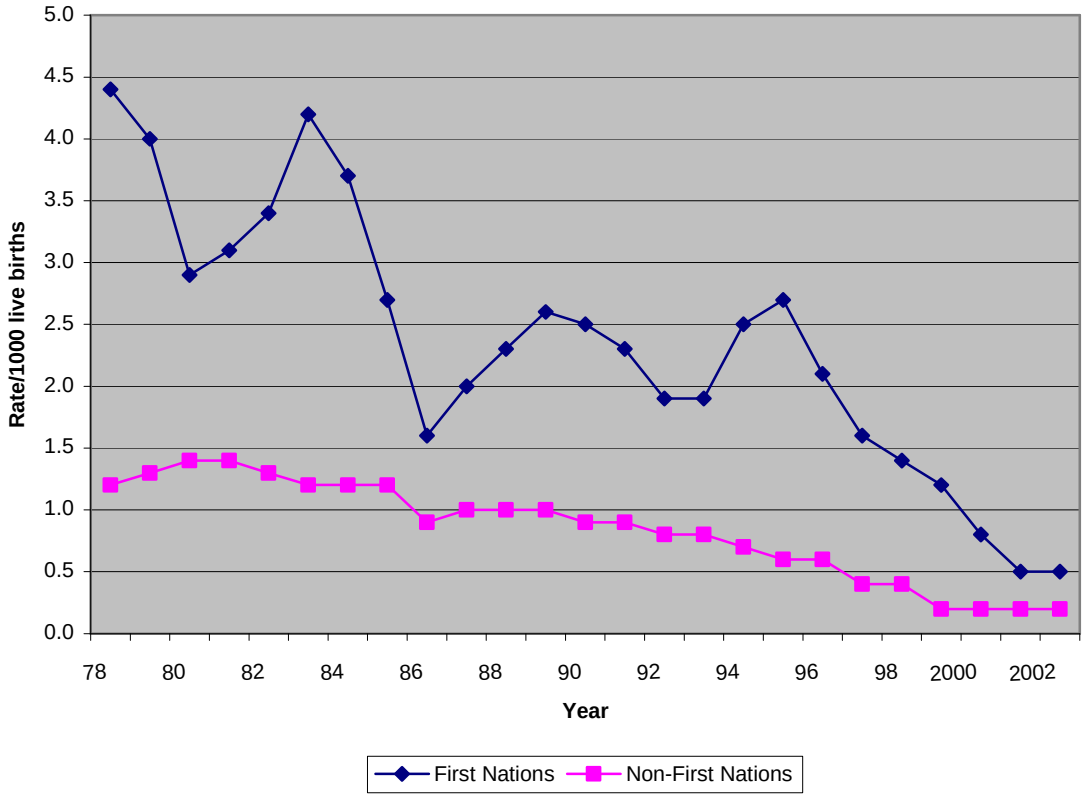
The remaining causes of unintentional injury death included a fall from a roof while clearing snow, unintentional poisoning (solvents), and farm injury (machinery-related).

Two children less than 15 years of age committed suicide in 2004. Both were First Nations children living on reserve.

Five children died related to inflicted injuries; two homicides and three cases of child abuse.

Selected Cause-Specific Mortality – First Nations Children

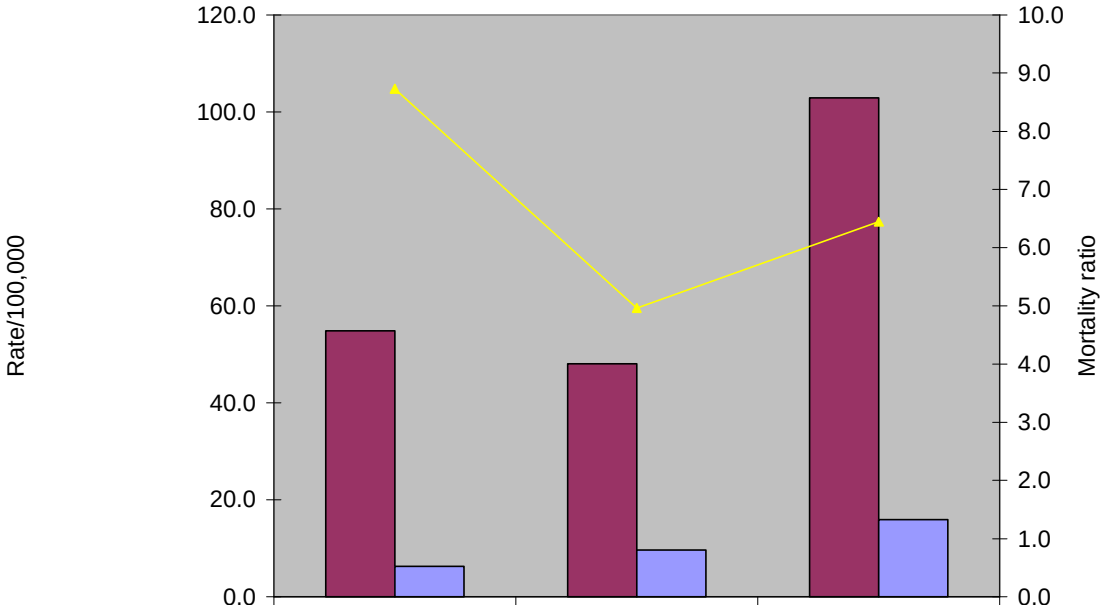
Figure 7 – SUDDEN INFANT DEATH SYNDROME 1978-2003
FIRST NATIONS vs. NON-FIRST NATIONS
(Three-Year Moving Average)



SIDS rates have been declining for all Manitoba children since the late 1970s. The gap between First Nations and non-First Nations rates has been steadily declining over this time period. In 2003 First Nations children had a 2.5-fold increased risk of SIDS when compared to non-First Nations children. In 2004 the only SIDS death was a First Nations child. Four of the seven SUID deaths and two of the three sleep-related suffocation deaths also were First Nations children.

Selected Cause-Specific Mortality – First Nations Children Continued

Figure 8 – MORTALITY RATES FROM INJURY
FIRST NATIONS vs. NON-FIRST NATIONS
In Children 29 Days to 14 Years



	Injury	Other causes	Total
First Nations	54.9	48.0	102.9
Non-First Nations	6.3	9.7	16.0
Mortality ratio	8.7	5.0	6.4

First Nations children had an elevated risk of death for all causes combined, with 6.1 times the rates experienced by non-First Nations children. For injury, there was an 11.5-fold increased risk of death.

Autopsies

In 2004, autopsies were performed on 52 of the 63 Manitoba children (82%) who died between the ages of 29 days and 14 years. Among the teens aged 15 to 17 years, 28 of 34 had autopsies (82%).

4. Teenage Deaths, 15 to 17 Years

Since 1994, the Child Health Standards Committee has reviewed deaths of Manitoba youth 15 to 17 years of age. The death rate in 2004 was 67.4 per 100,000, higher than the three-year average of 53.1 per 100,000. The male to female mortality ratio was 2.0 to one (see Table 2). **Table 9** shows the causes of death for this age group and **Table 10** shows the types of injuries causing death. The injury-related mortality rate was 45.6 per 100,000. The male-to-female ratio was 2.3 to one for injury-related deaths.

Table 9 – CAUSES OF DEATH in Children 15 to 17 years

	Deaths	**Rate per 100,000**
Injury	23	45.6
Unintentional Injury	*8*	15.9
Intentional Injury*	*15*	29.7
Circulatory System	3	5.9
Congenital Anomalies	1	2.0
Endocrine Disorders	1	2.0
Infectious Diseases	1	2.0
Musculoskeletal Disorders	1	2.0
Neoplasms	2	4.0
Respiratory Diseases	1	2.0
Cause Unknown	1	2.0
Total	**34**	67.4

*Intentional injury includes homicide and suicide.

Table 10 – TYPES OF INJURY CAUSING DEATH in Children 15 to 17 Years

Unintentional			**Intentional**		
	Cases	**Rate / 100,000**		**Cases**	**Rate / 100,000**
Motor Vehicle	4	7.9	Homicide	0	
Hypothermia	1	2.0	Suicide	16	31.7
Drowning	1	2.0	Asphyxia	11	14.0
Hanging	1	2.0	Firearm	3	5.9
			Overdose	1	2.0
			Pedestrian	1	2.0
Total	**7**	**13.9**		**16**	**31.7**

Teenage Deaths, 15 to 17 Years Continued

In 2004, 23 of the 34 teen deaths were due to injuries. Motor vehicle related deaths were the leading cause of unintentional injury death. Four teens died in motor vehicle collisions: two drivers and two passengers. None of these victims were wearing a seat belt. Two of these incidents involved inexperienced drivers. All of the motor vehicle related deaths involved substance use.

There were 16 intentional injury deaths, all of which were suicides. Eleven of the suicides were by hanging. Twelve of the suicides were First Nations teens. Substance use or alcohol use was documented at the time of suicide for 10 of these deaths.

5. *Preventability of Death*

The CHSC divides preventability into two categories: (i) preventability of the disease or the injury that caused the death, and (ii) preventability of the outcome once the disease or injury has occurred. Medical care is sometimes involved in the preventability of outcome, and rarely is implicated in the cause of death. Educational action was taken by the committee or another standards committee for cases where medical care could have been improved.

Childhood Deaths

(i) Preventable Cause

In 2004, 35 of the 63 childhood deaths were deemed to have a preventable cause. This included 25 injuries (including unintentional injuries, suicide, and homicide) and 7 infants with risk factors in the sleep environment. There were three theoretically preventable deaths, including one vaccine-preventable death (pneumococcal sepsis/meningitis), one case where the death was theoretically preventable by earlier diagnosis and treatment, and one death where patient non-compliance was related to the cause of death.

(ii) Preventable Outcome

There were 8 childhood deaths classified as having a preventable outcome. Five cases with a preventable outcome related to parent/guardian delay in seeking care, including two cases of child abuse. Three cases had a theoretically preventable outcome by earlier diagnosis and treatment.

There were several additional cases where the care provided did not alter the outcome but could have been improved:

- Prolonged use of oral electrolyte solution and inadequate follow-up for an infant with dehydration.
- Inadequate management of hypotension in a trauma patient.
- Resuscitation (bolus) with hypotonic fluids.
- Incomplete documentation of depression and mental health status.
- Failure to transfer an acutely suicidal youth for psychiatric assessment.
- Treatment of depression with medication at a dose higher than the adult maximum dose.
- Medication errors during resuscitation that did not affect the outcome (several cases); these may reflect or include documentation errors.
- Failure to comply with reporting requirements for childhood deaths.

Teenage Deaths

(i) Preventable Cause

In 2004, 22 of the 34 teenage deaths were judged to have a preventable cause. All of the preventable deaths were due to trauma (injury) or suicide.

(ii) Preventable Outcome

There was one death in 2004 that was judged to have a theoretically preventable outcome, in which medical care could have been improved with earlier diagnosis and more aggressive management.

Educational and Other Actions

The Child Health Standards Committee took educational action for 22 cases in 2004. An additional five actions taken by other Standards Committees were reviewed by the committee. One case was the subject of an inquest, at which multiple recommendations were made to improve child safety in foster homes.

Table 11 – EDUCATIONAL ACTIONS

Action Taken	
Physician Providers	7
Health Administrators	8
Referrals to other agencies/organizations	7
Total	**22**

6. Recommendations

The Child Health Standards Committee had the following recommendations related to child health in 2004.

1. That current national paediatric triage guidelines be followed in Manitoba hospitals (Paediatric Canadian Triage & Acuity Scale).

2. That blood pressure be routinely documented for all admitted paediatric patients.

3. That physician order sheets should have a time field in addition to and separate from the date field.

4. That policies regarding medication safety in foster homes be reviewed.

5. That parents should not use infant bath seats/rings.

6. That children and teens with a history of syncope/near syncope with exertion, chest pain with exertion, or unexplained exertional dyspnea should have a cardiac assessment including history, examination, and a 12-lead EKG. Children with pathologic findings or a family history of sudden death in a teen or young adult should be referred to Cardiology.

7. That Cardiology consultation is suggested for neonates with loud, widespread, or diastolic murmurs; neonates with more than 10 mmHg difference in blood pressure between limbs; and neonates with low measured oxygen saturation (90%) or drop in saturation in the lower extremity.

Child **H**ealth **S**tandards **C**ommittee

COMMITTEE MEMBERS (2004)
Dr. F. Friesen, Paediatrician, Chair (January - September)
Dr. R. Smith, Paediatrician, Chair (September – December)
Dr. J. Embree, Paediatric Infectious Disease
Dr. B.J. Hancock, Paediatric Surgeon
Dr. C. Littman, Pathologist
Dr. N. Schur, Paediatrician
Dr. L. Warda, Paediatrician
Dr. G. Lemoine, Family Physician
Dr. M. Feierstein, Paediatrician
Dr. T. Drews, Paediatrician
Dr. J. Carson, Paediatrician

ADMINISTRATIVE STAFF (2004)
Dr. J. Carson, Paediatrician, Medical Consultant
Dr. L. Warda, Paediatrician, Medical Consultant
Dr. T. Babick, Family Physician, Deputy Registrar, CPSM
Ms J. Blakley, Registered Nurse, Manager, Standards Programs, CPSM
Ms J. Still, Administrative Assistant, Maternal & Child Programs, CPSM

CURRENT ADMINISTRATIVE STAFF (2008)
Dr. L. Warda, Paediatrician, Medical Consultant
Dr. T. Babick, Family Physician, Deputy Registrar, CPSM
Ms J. Blakley, Registered Nurse, Manager, Standards Programs, CPSM (January – July)
Ms J. Still, Administrative Assistant, Maternal & Child Programs, CPSM (January - May)
Ms M. Myers, Administrative Assistant, Maternal & Child Programs, CPSM