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

2005

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
- Medical Records Departments, Manitoba Hospitals
- Manitoba Vital Statistics
- First Nations and Inuit Health Branch, Health Canada
- Insurance Division, Manitoba Health
- IMPACT, the injury prevention centre of Children's Hospital (2006-9) and the IMPACT/WRHA injury prevention program (2009-2010)

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 2005.

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

Executive Summary 2005

- The Child Health Standards Committee (CHSC) reviewed 125 deaths which occurred in 2005. Eighty-one were children 29 days to 14 years of age, 38 were teens 15 to 17 years of age, one was an infant less than 29 days of age, and five were children whose place of residence was out of province.

- The mortality rate for Manitoba children aged 29 days to 14 years was 34.7 per 100,000 in 2005 compared to 26.7 per 100,000 in 2004 and 32.2 per 100,000 in 2003. The mortality rate for Manitoba teens 15-17 years of age was 74.3 per 100,000 in 2005 compared to 67.4 per 100,000 in 2004 and 38.0 per 100,000 in 2003. The infant mortality rate was 5.7 per 1,000 live births, a decrease compared to 2004, when it was 6.1.

- The cause of death was classified as preventable for 36 of the 81 child deaths (44%) and 32 of the 38 teen deaths (84%). Injury (unintentional injury, suicide, homicide) accounted for the majority (91%) 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 suicide, motor vehicle collisions, and drowning. The most common causes of injury-related mortality in teens were suicide, homicide, and motor vehicle collisions. Young drivers were involved in all the teen motor vehicle deaths.

- There were 25 suicides in 2005, compared to 18 in 2004 and 13 in 2003. In 2005, 12 suicides were teens 15-17 years of age and 13 were children between the ages of 8 and 14; this compares to 16 teens and two children 14 years of age and younger in 2004. None of the 2005 suicides were known to be suicide pacts.

- There were 36 First Nations children 29 days to 14 years of age who died in 2005. First Nations children in this age group were 5.6 times more likely to die than other Manitoba children. First Nations children accounted for 44% of childhood deaths in Manitoba. Mortality rates on-reserve were equivalent to rates off-reserve for this age group.

- There were 15 First Nations teens 15-17 years of age who died in 2005. First Nations teens were 5.8 times more likely to die than other Manitoba teens. First Nations teens accounted for 15 of 38 teen deaths in Manitoba (39%). Mortality rates off-reserve were 1.3 times higher than on-reserve for this age group.

- In 2005, the CHSC initiated educational actions with 11 physicians with respect to medical care provided. Four actions were directed to healthcare administrators and 14 additional referrals were made to other professional bodies, organizations, and government departments. In 8 cases, educational action was taken by another standards committee.

Table of Contents

Index of Figures and Tables

FIGURES

TABLES

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 and 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 Newsletter and Annual Reports to draw members' attention to important aspects of medical care involving children.
- Developing and disseminating recommendations to improve 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 or other actions 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 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 on Page 16.)

Newsletter Items

The CHSC published three Newsletter items in 2005:

- Reporting Product-Related Injury or Deaths to Health Canada
- Child Protection and Child Abuse Manual
- SIDS Prevention Recommendations

Other Committee Activities

The CHSC conducted two Morbidity/Mortality audits in 2005:

- Suicide: Children and Teens
- Sudden infant deaths 2003-2004

The CHSC advocated for the following issues in 2005:

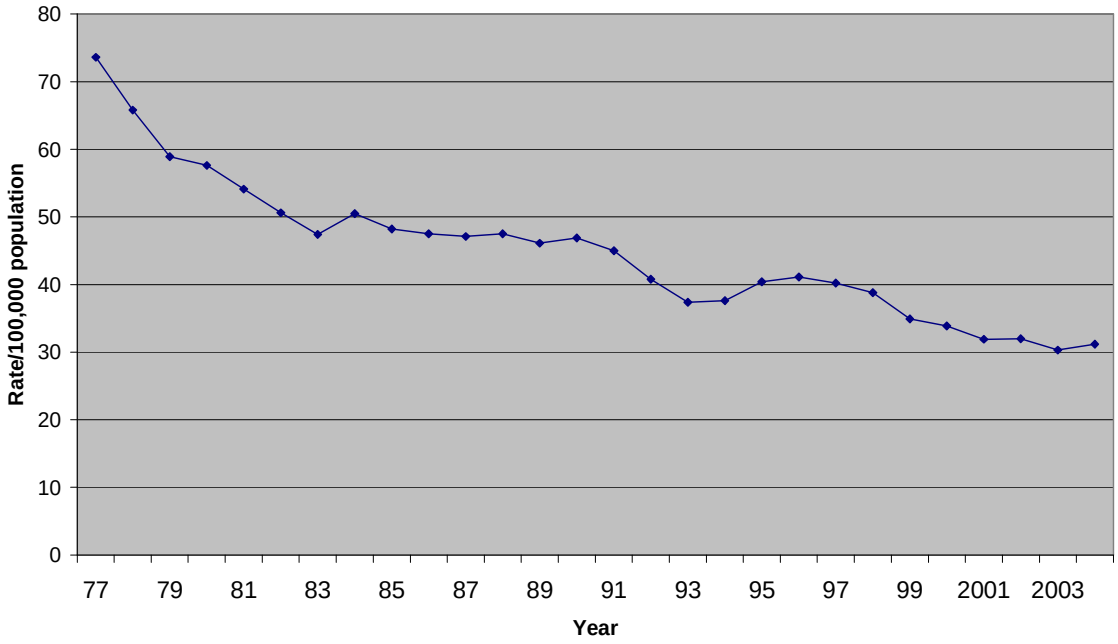
- Safe sleep guidelines, policies, and public education
- Improved playpen warning labelling requirements
- Operator age restriction of 16 years for off-road vehicles (ATVs, snowmobiles)
- Medication safety in foster care
- Tax exemption for essential infant safety items (crib, car seat)
- Increased newborn assistance amount for families on income assistance to allow purchase of essential infant safety equipment

3. *Statistical Summary*

Mortality Rates

Figure 1 shows the three-year moving average trends in paediatric mortality from 1977 to 2005 for Manitoba residents. *The 2005 data are included in the three-year moving average reported as 2004.*

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 2005				
Age Group	**Number of Deaths**	**Population**	**Rate/100,000**	**Three-Year Average (2003 – 2005)**
29 days to <1 year	25	13,963	179.0	184.4
1 to 4 years	18	57,111	31.5	33.0
5 to 9 years	14	76,884	18.2	12.0
10 to 14 years	24	85,527	28.1	22.6
Total 29 days to 14 years	**81**	233,485	34.7	31.2
15 to 17 years	38	51,168	74.3	59.9

Table 2 – MORTALITY RATES BY GENDER 2005				
Gender	**Number of Deaths**	**Population**	**Rate/100,000**	**Three-Year Average (2003 – 2005)**
Male 29 days to 14 years	50	119,569	41.8	36.8
Female 29 days to 14 years	31	113,916	27.2	25.3
Male 15 to 17 years	25	26,197	95.4	75.8
Female 15 to 17 years	13	24,971	52.1	43.2

Infant Mortality Rates

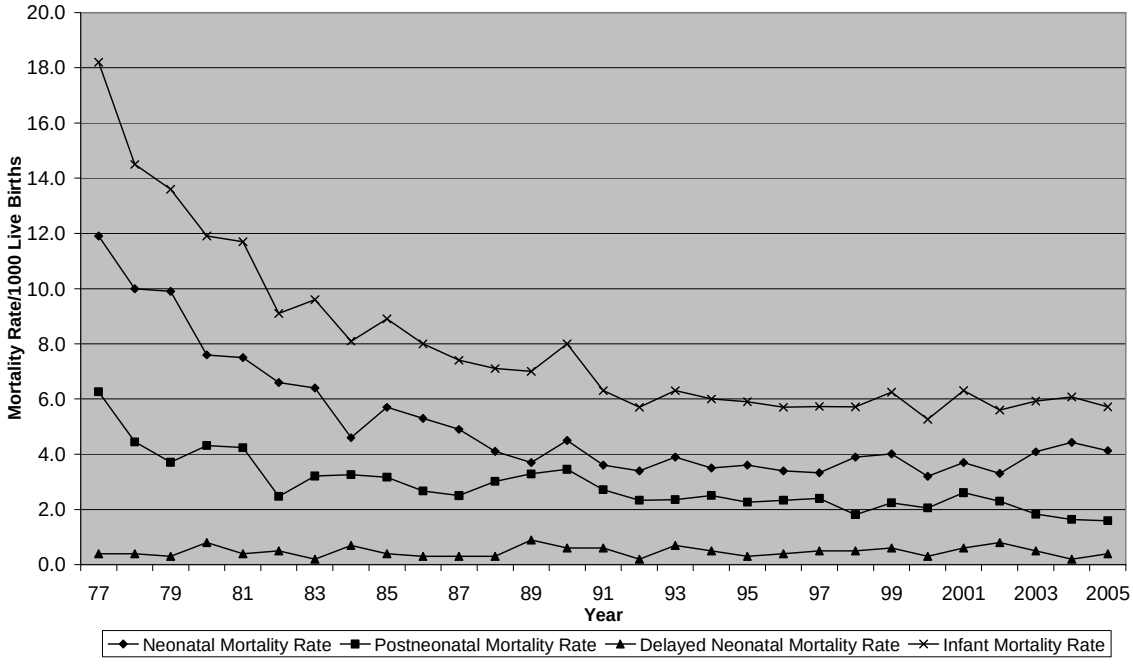
In 2005 there were 25 deaths in the Manitoba population between 29 days and one year of age. The number of live births based on Manitoba Health registrations was 15,726. This gives a post-neonatal infant mortality rate of 1.6 per 1,000 live births. There were also 65 neonatal deaths in the first 28 days of life. The neonatal mortality rate was 4.1 per 1,000 live births.

Combining the neonatal mortality rate with the post-neonatal mortality rate gives an overall infant mortality rate of 5.7 per 1,000 live births, a decrease compared to 2004, when it was 6.1. These figures do not include neonates born weighing <500 grams.

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 2005, six 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 infants 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	1998	1999	2000	2001	2002	2003	2004	2005
Canada	**5.3**	**5.3**	**5.3**	**5.2**	**5.4**	**5.3**	**5.3**	**5.4**
British Columbia	4.2	3.8	3.7	4.1	4.6	4.2	4.3	4.5
Nova Scotia	4.6	4.0	4.9	5.6	4.2	5.7	4.6	4.0
Alberta	4.8	5.8	6.6	5.6	7.3	6.6	5.8	6.8
Ontario	5.0	5.4	5.6	5.4	5.3	5.3	5.5	5.6
Yukon	5.1	2.6	2.7	8.7	8.8	6.0	11.0	0
Quebec	5.6	4.9	4.7	4.7	4.8	4.4	4.6	4.6
Newfoundland	6.2	4.9	4.9	4.9	4.5	5.0	5.1	6.2
New Brunswick	6.5	5.0	3.5	4.3	3.8	4.1	4.3	4.1
Manitoba	**6.7**	**8.4**	**6.5**	**7.0**	**7.1**	**8.0**	**7.0**	**6.6**
Saskatchewan	7.1	6.3	6.8	5.5	5.7	6.3	6.2	8.3
Prince Edward Island	8.0	6.6	3.5	7.2	1.5	4.9	4.3	2.2
Northwest Territories	18.5	16.7	8.9	4.9	11.0	5.7	0	4.2
Nunavut		10.9	12.3	16.9	11.0	19.8	16.1	10.0

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
Statistics Canada, CANSIM, table 102-0504 and Catalogue no. 84F0211X. Last modified: 2008-01-14

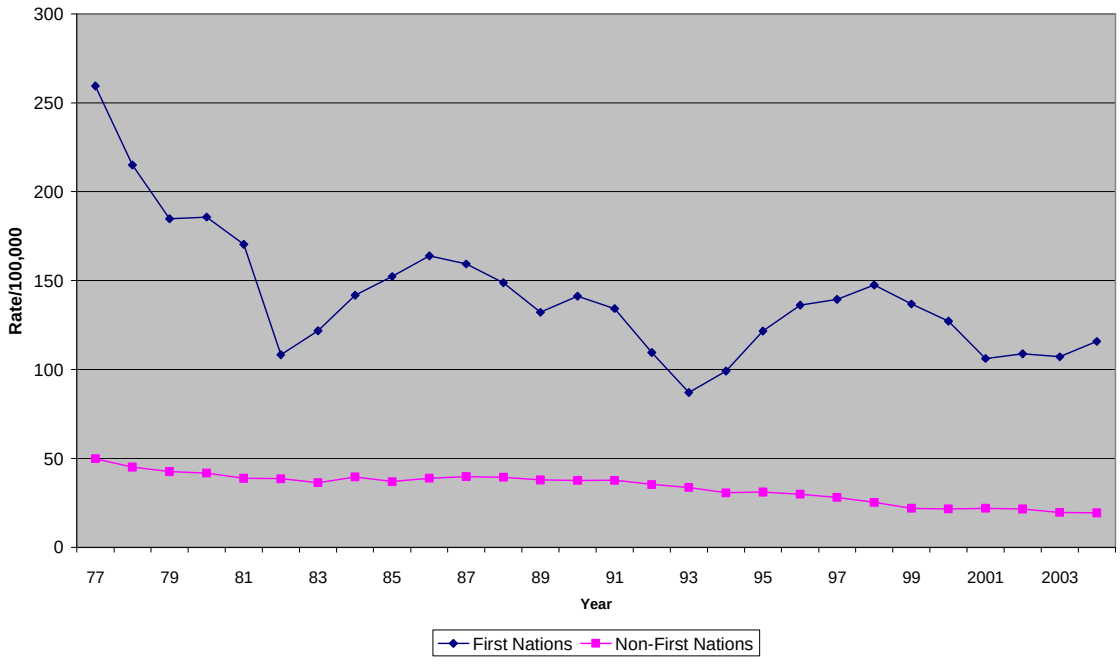
First Nations Mortality Rates

In 2005 First Nations children accounted for 12.5% of the population aged 29 days to 14 years in Manitoba and 44% of childhood deaths. There were 36 deaths among registered First Nations children (population 29,236) and 45 among all others (population 204,249). The mortality rate for First Nations children was 123.1 per 100,000, and for all others 22.0. Therefore, First Nations children were 5.6 times more likely to die than other Manitoba children. This is similar to 2003 and 2004, which showed six-fold increases.

In Manitoba in 2005, 57% of First Nations children resided in First Nations communities. Of the 36 First Nations children who died, 21 resided in First Nations communities and 15 resided in other communities. Mortality rates for First Nations children were 125.4 per 100,000 residing in First Nations communities, and 120.0 per 100,000 First Nations children residing in all other communities.

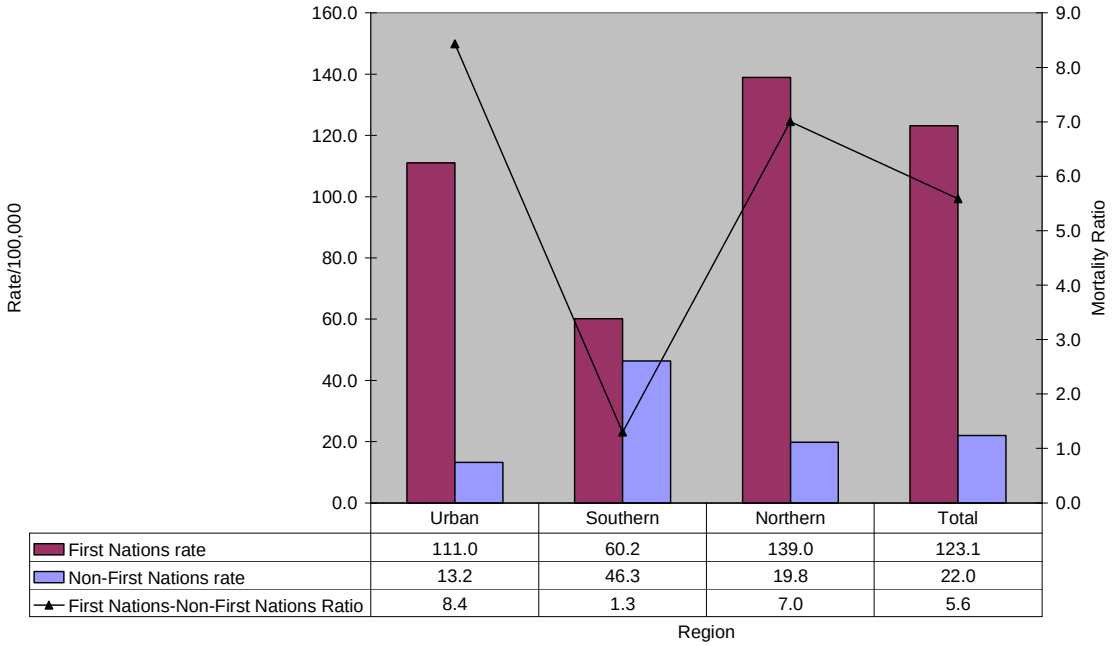
(The Manitoba Health Client Registry is used for these calculations for both deaths and population figures. These data are felt to represent approximately two-thirds of First Nations individuals in Manitoba.)

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	111.0	60.2	139.0	123.1
Non-First Nations rate	13.2	46.3	19.8	22.0
First Nations-Non-First Nations Ratio	8.4	1.3	7.0	5.6

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, Central and South Eastman RHAs
- Urban – Winnipeg and Brandon RHAs

Regional Mortality Rates

Table 4 – REGIONAL MORTALITY RATES 2005
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 (2003 – 2005)
Burntwood	19	15,535	122.3	108.3
Assiniboine	7	12,672	55.2	38.7
Central	11	23,678	46.5	36.9
Parkland	4	8,277	48.3	31.9
North Eastman	5	8,454	59.1	31.5
All Manitoba	**81**	**233,485**	**34.7**	**31.2**
NorMan	0	6,429	0.0	30.4
Interlake	5	15,051	33.2	28.7
South Eastman	6	14,439	41.6	25.8
Winnipeg	23	119,265	19.3	21.7
Brandon	1	9,452	10.6	14.1
Churchill	0	233	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 2005, 81 deaths of Manitoba children were reviewed. Injury accounted for 38% of these deaths. The CHSC reviewed five 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	31	13.3
Unintentional Injury	15	6.4
Intentional Injury*	16	6.9
Sudden Unexpected Deaths	8	3.4
Infectious Disease	3	1.3
Respiratory System	8	3.4
Neoplasm	7	3.0
Nervous System	5	2.1
Congenital Anomaly	11	4.7
Diseases of the Digestive System	2	0.9
Conditions Originating in Perinatal Period	3	1.3
Endocrine, Nutritional, Metabolic	3	1.3
Total	**81**	34.7

*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**
Congenital Anomaly	7	50.1
SUID	5	35.8
Diseases of the Respiratory System	4	28.6
Conditions Originating in the Perinatal Period	3	21.5
Diseases of the Nervous System	2	14.3
Infectious Disease	2	14.3
Endocrine, Nutritional, Metabolic	1	7.2
Injury Total	1	7.2
Unintentional Injury	0	
Intentional Injury*	1	7.2
Total	**25**	179.0

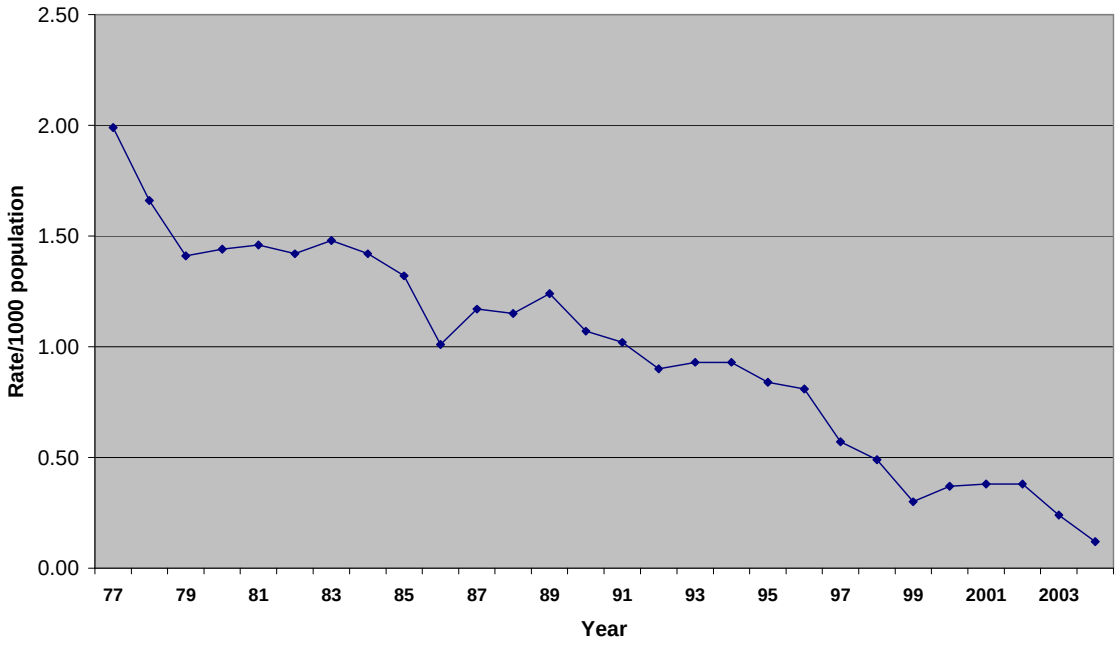
*Intentional Injury (homicide).

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 Unexpected 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. There were no cases of SIDS in 2005; all cases were classified as SUID.

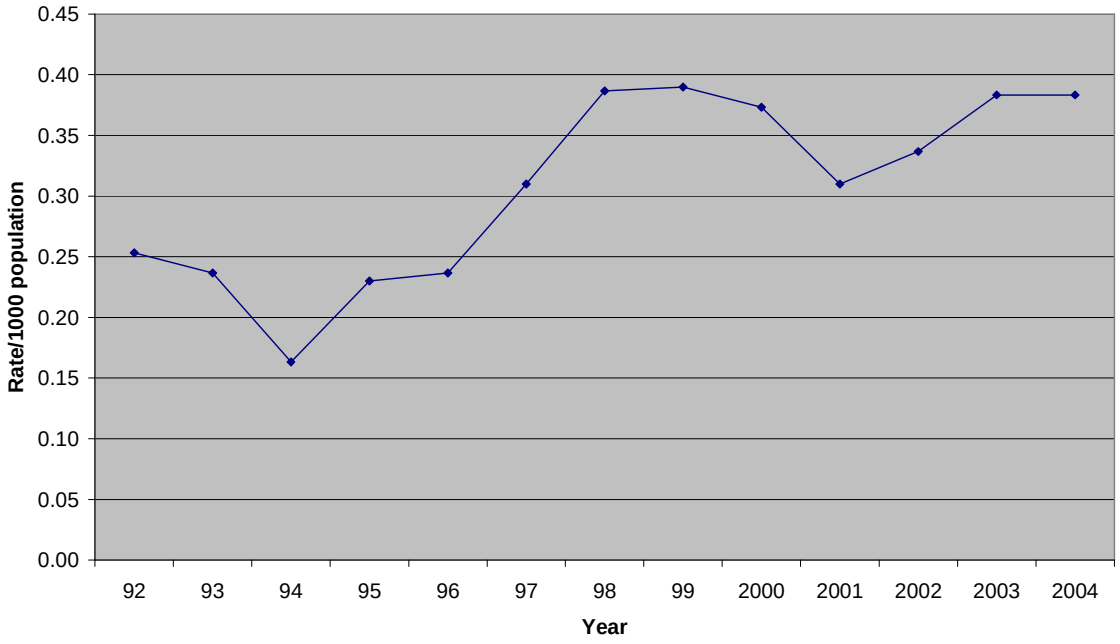
Figure 5A – SUDDEN INFANT DEATH SYNDROME (SIDS)
In Children 29 Days to 1 Year
(Three-Year Moving Average)



Sudden Unexpected Infant Death (SUID)

Figure 5B shows the three-year moving average rates for Sudden Unexpected Infant Death (SUID) from 1992 to 2005. Data for 2005 are included in the 2004 three-year average (2003-2005). In 2005, there were five cases of SUID in the 29 days to one-year age group.

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



One-quarter of the deaths of infants 29 days to one year of age were sudden and unexpected infant deaths during sleep. Among these five cases, one was co-sleeping in an adult bed, one was placed to sleep alone in an adult bed, and two were co-sleeping on a sofa. None of the infants were placed to sleep in a crib and four infants were put to sleep on their back. Four of these infants had at least two modifiable risk factors for sudden infant death. At least two 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 2005 are included in the 2004 three-year average (2003-2005).

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

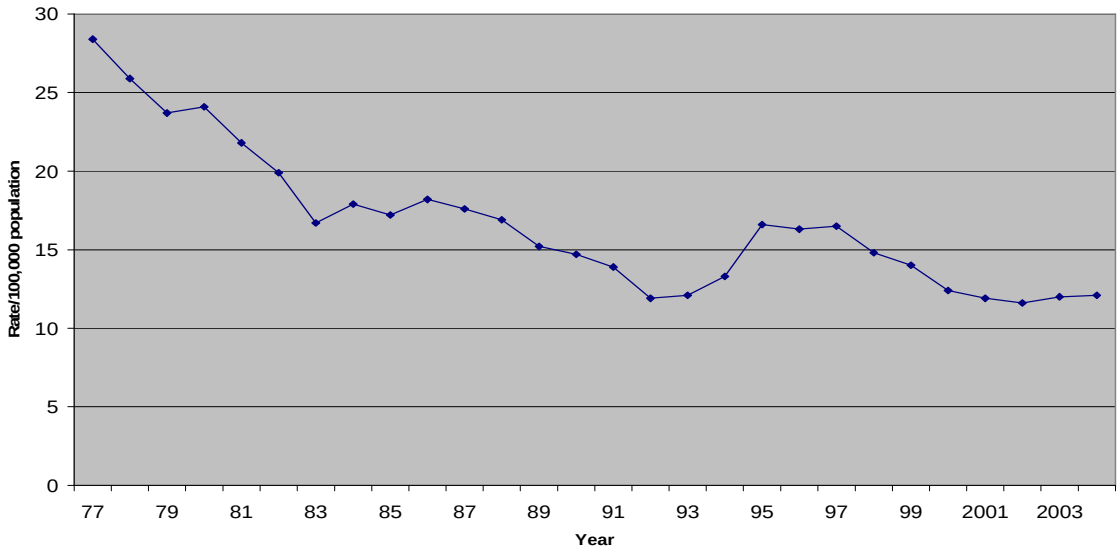
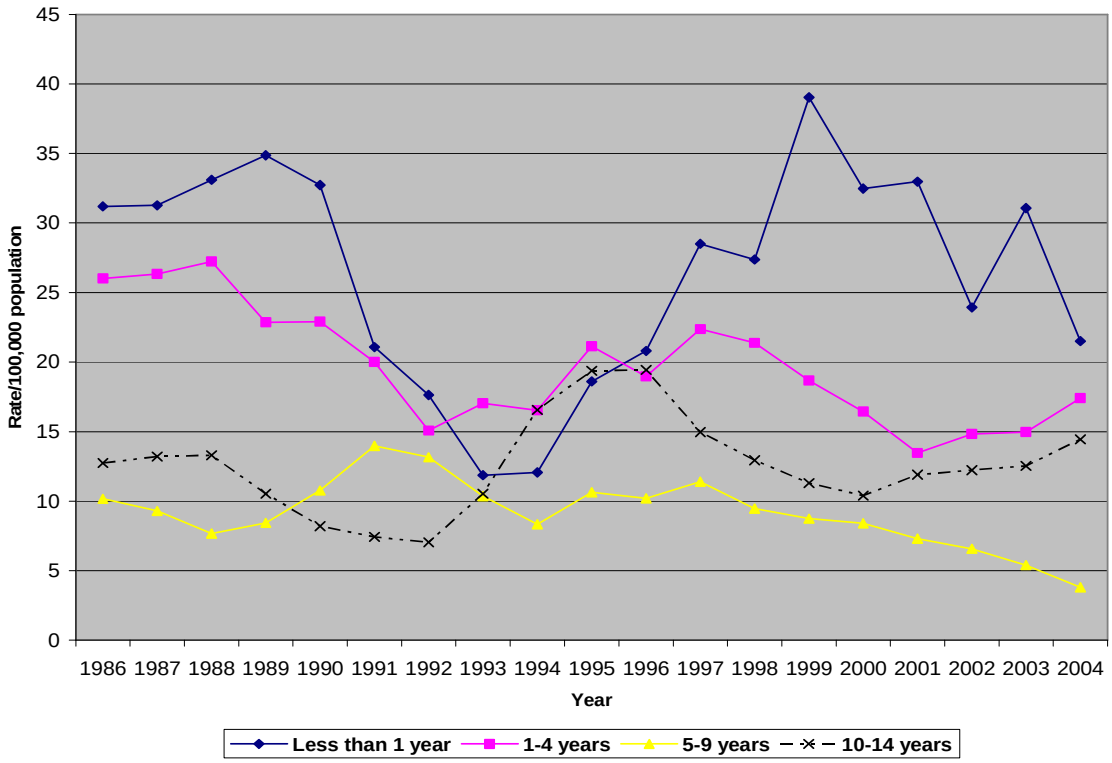


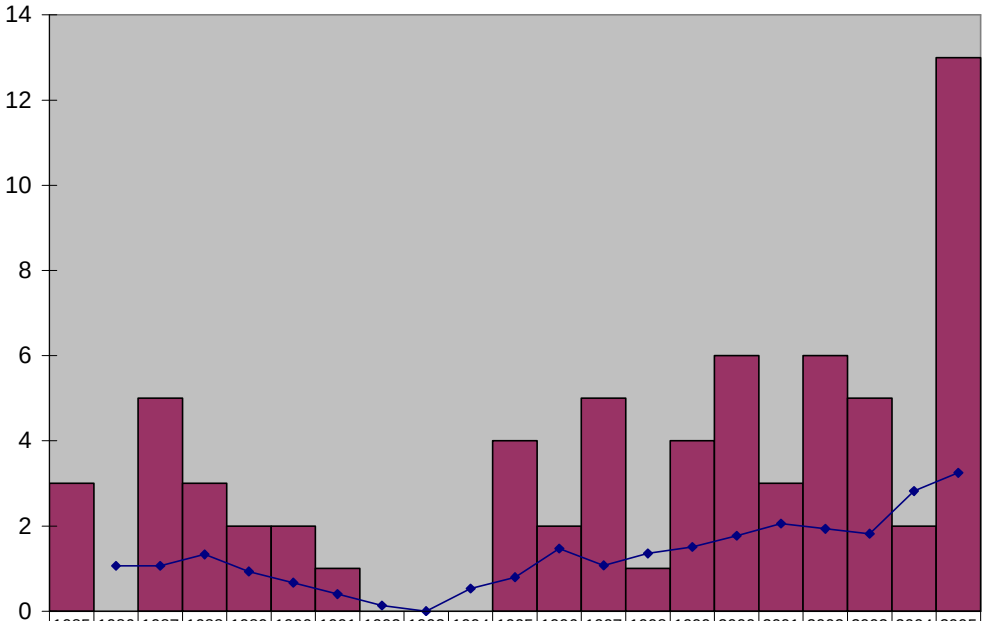
Figure 6B – MORTALITY RATES FROM INJURY by Age Group (29 Days to 14 Years) (Three-Year Moving Average)



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 2005 are included in the 2004 three-year average (2003-2005). 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	2005
Number	3	0	5	3	2	2	1	0	0	0	4	2	5	1	4	6	3	6	5	2	13
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	3.2

In 2005, there were 31 deaths due to injury among Manitoba children 14 years of age and under. Injuries caused 38% of all deaths of children between 29 days and 14 years of age (31 of 81).

Table 7 – INJURY-RELATED MORTALITY RATES BY AGE GROUP 2005

Age Group	Number of Deaths	Population	Rate/100,000	Three-Year Average 2003-2005
29 days - 1 year	1	13,963	7.2	21.5
1 - 4 years	11	57111	19.3	17.4
5 - 9 years	2	76884	2.6	3.8
10 - 14 years	17	85527	19.9	14.4
Total	**31**	**233485**	**13.3**	**12.1**

Deaths from Injury - Trends Continued

Table 8 – TYPES OF INJURY CAUSING DEATH 2005 In Children 29 Days to 14 Years					
Unintentional			**Intentional**		
Cause	**Number**	**Rate**	**Cause**	**Number**	**Rate**
Drowning	4	1.7	Suicide	13	5.6
Choking/Suffocation	2	0.9	Homicide	3	1.3
Motor Vehicle	5	2.1			
Hanging	2	0.9			
Machinery	1	0.4			
Poisoning	1	0.4			
Total	**15**	**6.4**	**Total**	**16**	**6.9**

There were 15 deaths related to unintentional injuries and 16 deaths related to intentional injuries (13 suicides and three inflicted injuries).

The most common cause of unintentional injury death was motor vehicle-related injury. Three passengers died in motor vehicle collisions. Seat belts or child restraints were in use in two incidents. Road conditions (ice) were a factor in all three collisions; one occurred at night. Alcohol and substance use were implicated in one case. A young driver was involved in one case.

Three children died as a result of pedestrian injuries. One toddler was run over by a vehicle on a remote/rural property and another in a parking lot. Both incidents were characterized by poor driver visibility, and involved a truck. In the third incident a toddler was run over by farm machinery.

Four children died as a result of drowning. A preschool-aged child drowned while swimming at a public beach. A young child wearing a PFD riding on a personal watercraft (passenger) fell off and drowned when the vehicle overturned. Two older children drowned; one non-swimmer in a residential swimming pool and one who drowned in a remote community while playing on or near the water.

Deaths from Injury - Trends Continued

There were two cases of choking/suffocation and two cases of unintentional hanging. A toddler choked on a small piece of plastic and a child with a seizure disorder was found face down in a pillow. A young child became entrapped between the change table accessory of a playpen and the side rail, and another child became entangled in a drapery cord.

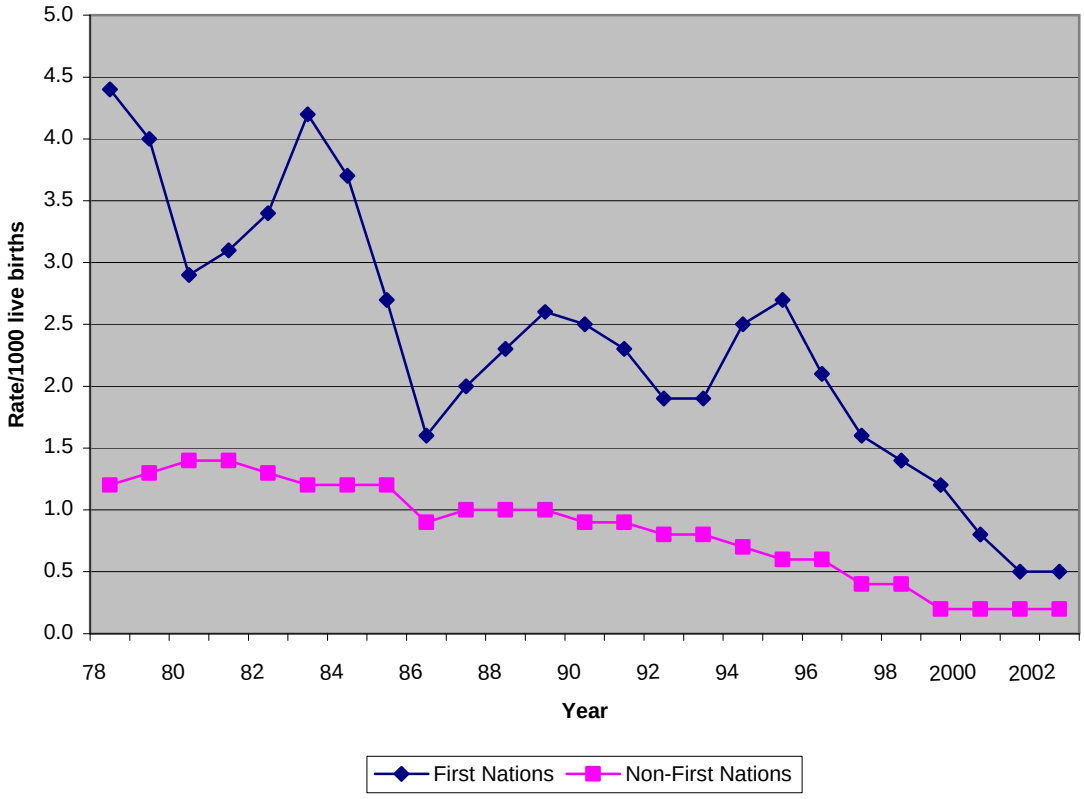
There was one case of unintentional poisoning (strychnine – rodent poison).

Thirteen children less than 15 years of age committed suicide in 2005. This was a dramatic increase compared to previous years. Eleven were First Nations children, with seven living on Reserve. No suicide pacts were identified in 2005.

Three children died related to inflicted injuries; two homicides and one case of child abuse.

Selected Cause-Specific Mortality – First Nations Children

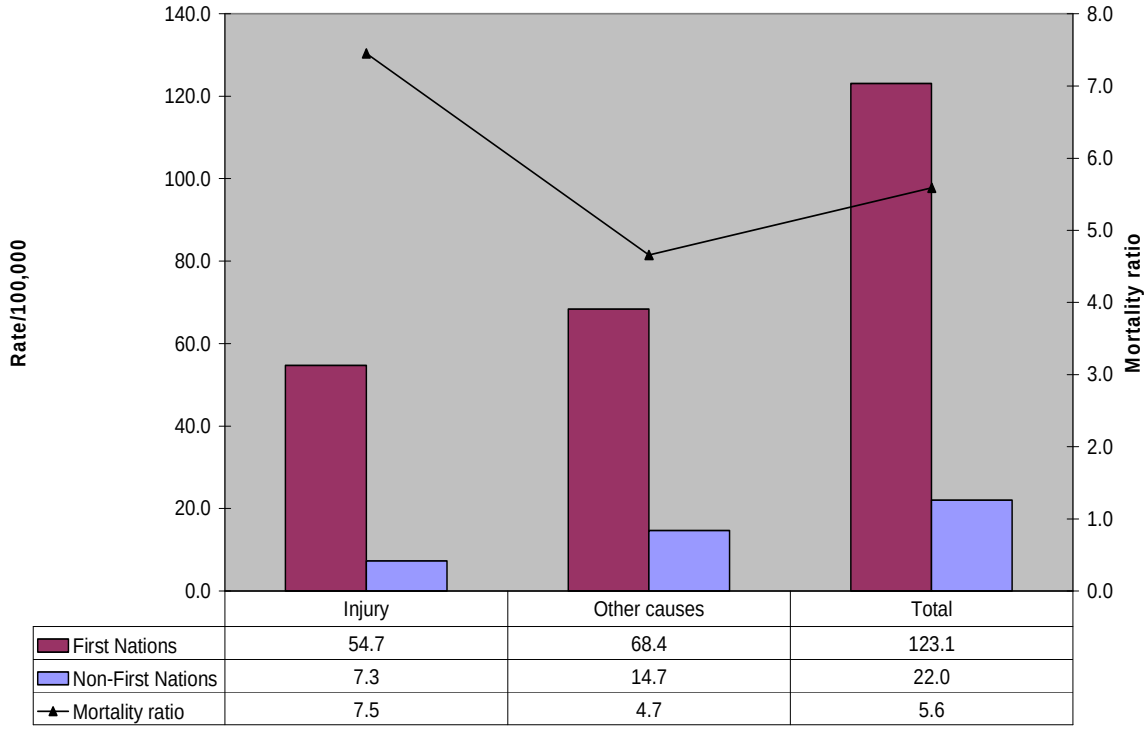
Figure 7 – SUDDEN INFANT DEATH SYNDROME 1978-2003
FIRST NATIONS vs. NON-FIRST NATIONS
(Three-Year Moving Average)



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. In 2005 there were no cases of SIDS. Note that Figure 7 reflects the most recent three-year average that can be calculated (2002, reflecting 2001-2003). Of the five SUID deaths in 2005 at least two 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	54.7	68.4	123.1
Non-First Nations	7.3	14.7	22.0
Mortality ratio	7.5	4.7	5.6

First Nations children had an elevated risk of death for all causes combined, with 5.6 times the rates experienced by non-First Nations children. For injury, there was a 7.5-fold increased risk of death.

Autopsies

In 2005, autopsies were performed on 55 of the 81 Manitoba children (68%) who died between the ages of 29 days and 14 years. Among the teens aged 15 to 17 years, 35 of 38 had autopsies (92%).

4. Teen Deaths, 15 to 17 Years

Since 1994, the Child Health Standards Committee has reviewed deaths of Manitoba youths 15 to 17 years of age. **The death rate in 2005 was 74.3 per 100,000, higher than the three-year average of 59.9 per 100,000 in 2004.** The male to female mortality ratio was 1.8 to one (see Table 2, page 10). Figure 9 shows mortality rates by gender for 1996-2004. Figure 10 shows the proportion of deaths due to injury and other causes.

Figure 9 – MORTALITY RATES
In Teens 15-17 Years of Age (Three-Year Moving Average)

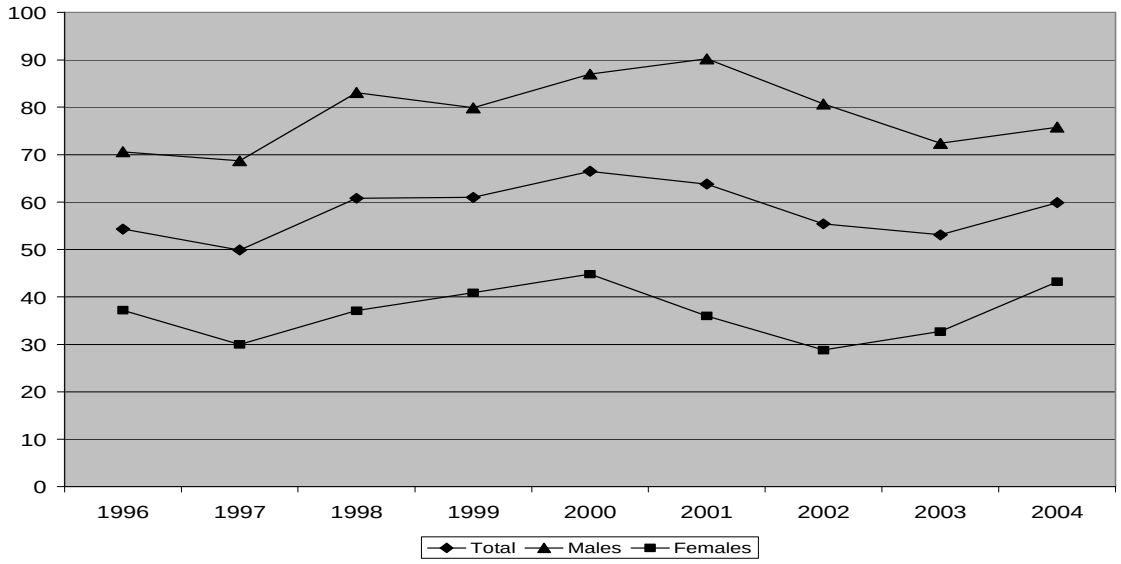
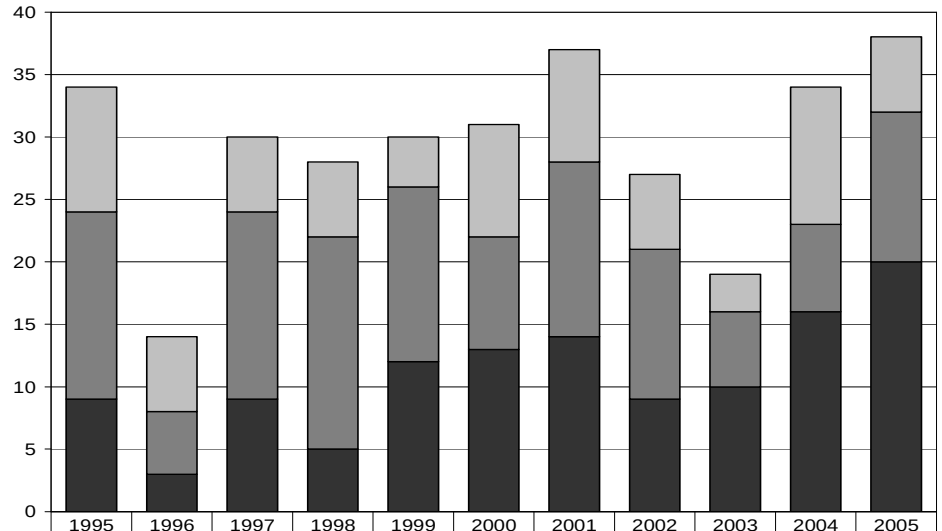


Figure 10 – NUMBER OF DEATHS BY CAUSE (INJURY VS. NATURAL CAUSES)
In Teens 15-17 Years of Age, 1995-2005



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Natural/Other Causes	10	6	6	6	4	9	9	6	3	11	6
Injury - Unintentional	15	5	15	17	14	9	14	12	6	7	12
Injury - Intentional	9	3	9	5	12	13	14	9	10	16	20

Teen Deaths Continued

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 62.5 per 100,000. The male-to-female ratio was 2.1 to one for injury-related deaths.

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

	Overall		First Nations		Non-First Nations	
	Deaths	**Rate per 100,000**	**Deaths**	**Rate per 100,000**	**Deaths**	**Rate per 100,000**
Injury	32	62.5	14	269.5	18	39.2
Unintentional Injury	*12*	*23.5*	3	57.7	9	19.6
Intentional Injury*	*20*	*39.1*	11	211.7	9	19.6
Circulatory System	2	3.9			2	3.9
Congenital Anomalies	1	2.0			1	2.0
Infectious Diseases	1	2.0			1	2.0
Neoplasms	1	2.0			1	2.0
Respiratory Diseases	1	2.0			1	2.0
Total	**38**	**74.3**	**14**	**269.5**	**24**	**52.2**

*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	8	15.6	Homicide	8	15.6
Drowning	4	7.8	Suicide total	12	23.5
			Hanging	11	21.5
			Firearm	1	2.0
Total	**12**	**23.5**		**20**	**39.1**

Teen Deaths Continued

In 2005, 32 of the 38 teen deaths were due to injuries. Motor vehicle related deaths were the leading cause of unintentional injury death. Five teens died in motor vehicle collisions: three drivers and two passengers. Two of these victims were known to be wearing a seat belt. All of these incidents involved inexperienced drivers. In one of the motor vehicle related deaths substance use was implicated as a factor.

The remaining motor vehicle deaths involved teens operating off-road vehicles (snowmobile, all-terrain vehicle, dirt bike). Helmets were thought to have been worn in two of these incidents.

Four teen deaths were due to drowning. Three youths were involved in the same recreational boating incident. No PFDs were in use. Another youth drowned at a public beach while swimming.

There were 20 intentional injury deaths, 12 of which were suicides. Eleven of the suicides were by hanging. Eight of the suicides were First Nations teens. Substance use or alcohol use was documented at the time of suicide in 6 cases. Four of the eight homicides were in Fist Nations teens.

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 2005, 38 of the 81 childhood deaths were deemed to have a preventable cause. This included 31 injuries (including unintentional injuries, suicide, and homicide) and 3 infants with risk factors in the sleep environment. The remaining 4 cases included 3 deaths which were theoretically preventable by earlier diagnosis and more aggressive treatment, and one death where non-compliance was related to the cause of death.

(ii) Preventable Outcome

There were three childhood deaths classified as having a preventable outcome, including one injury, one case of child abuse, and one case where more aggressive management could have prevented death. Two cases had a theoretically preventable outcome, including one case of child abuse and one case where there was a delay in seeking care.

There were additional cases where the care provided did not alter the outcome but could have been improved (* indicates observations also made in previous years):

- Inadequate management of hypotension in a trauma patient.*
- Incomplete documentation of depression and mental health status.*
- Failure to adequately assess and transfer an acutely suicidal youth for psychiatric assessment.*
- Failure to identify and aggressively treat documented hypotension.*
- Failure to document a core (rectal) temperature at the time of death.*
- 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.*
- Lack of documentation of significant physical findings relevant to diagnosis, clinical management, and/or discharge counselling/instructions.*
- There were several cases of missing documentation in the medical records reviewed.*

Teen Deaths

(i) Preventable Cause

In 2005, 32 of the 38 teen deaths were judged to have a preventable cause. All of the preventable deaths were due to trauma (injury), homicide, or suicide.

(ii) Preventable Outcome

There were two deaths in 2005 that were 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 29 cases in 2004. An additional 8 actions taken by other Standards Committees were reviewed by the committee.

Table 11 – EDUCATIONAL ACTIONS

Action Taken	
Physician Providers	11
Health Administrators	4
Referrals to other agencies/organizations	14
Total	**29**

6. Recommendations

The Child Health Standards Committee had the following recommendations related to child health in 2005.

1. That transdermal fentanyl is not suitable for acute pain management in children and youth, or for opioid naïve patients. Signs of serious opioid-related toxicity include hypoventilation and cognitive impairment and should be recognized early and acted upon rapidly.

2. That death and other serious injuries involving children's products should be reported to Health Canada for further investigation.

3. That Health Canada improves playpen warning labelling requirements, specifically relating to the risk of injury (entrapment) related to the change table accessory and that caregivers should remove the change table when a child is in the playpen.

4. That the Manitoba government consider an operator (driver) age restriction of 16 years for off-road vehicles (ATVs, snowmobiles) and compliance with the national recommendations for off-road vehicle safety published by the Canadian Paediatric Society.

5. That policy regarding medication storage and safety in foster care is reviewed.

6. That the Manitoba government consider a tax exemption for essential infant safety items (e.g. crib, car seat).

7. That the Manitoba government consider increasing the newborn assistance amount allocated to families on income assistance to allow purchase of essential infant safety equipment (e.g. crib, car seat).

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

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