CHILD HEALTH Report 2002

A PEEL HEALTH STATUS REPORT

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A Peel Health Status Report

Region of Peel
Working for you

Acknowledgements

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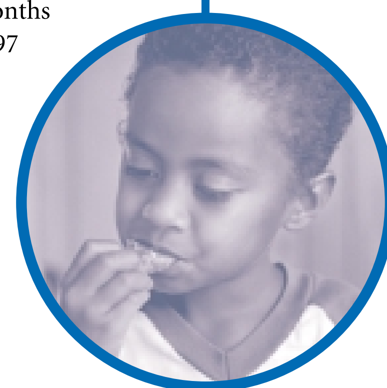

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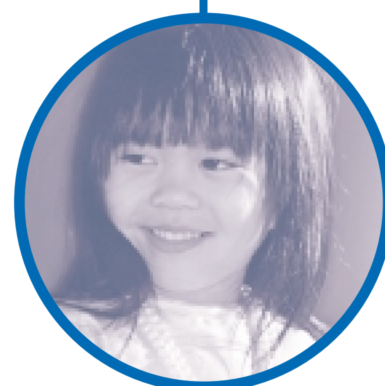

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Executive Summary

The *Child Health Report 2002* provides an overview of the health of children in the Region of Peel. It includes information from a variety of sources about the child population, the family and community environment in which children live and the health status of children. Although this report contains a wide range of child health information, it also reveals significant gaps in our knowledge of children's health in Peel.

This report is intended to be a resource for individuals and organizations concerned with the health and welfare of Peel's children and youth. Further information on the health of children in Peel may be obtained by contacting the Region of Peel Health Department.

The key findings of each section of the report are summarized below.

Peel's Children

In the Region of Peel and Ontario, crude birth rates have been slowly declining since the early 1990s. In 1997, there were 12,959 live births to mothers residing in Peel. Crude birth rates for the Region of Peel were consistently higher than Ontario, which was likely due to a higher proportion of women in the 25–39 year age group and to higher fertility rates among women.

The population of children is expected to increase over the next 20 years; however, the proportion of the population aged 0–19 years is expected to decline from 30% in 1996 to 23% in 2016. At the time of the last census (1996), there were 254,380 children aged 0–19 years living in the Region of Peel.

Family and Community Context

In 1996, the majority of families in Peel (61%) and Ontario (52%) were comprised of husband and wife or common-law couples with children living at home. Lone parent families, headed mostly by females, accounted for 13% of census families living in Peel. Between 1991 and 1996, the proportion of lone parent families increased from 11% to 13%.

Most families in Peel enjoy a good standard of living. However, there is still a high proportion of families with children aged less than 18 years of age living at home who live in poverty. In 1996, 13% of married or common-law couples and 52% of lone parents with children aged less than 18 years living at home were classified as low income.

The Region of Peel is a diverse community. Although English (80%) is the language spoken most often at home, 20% of residents reported speaking other languages, such as Punjabi, Chinese, Polish, Portuguese and Italian at home. In 1996, 3% of Peel's population reported they spoke neither English nor French. This had increased from 2.4% in 1991. This proportion was much higher in some areas of the Region.

Infant Health—the First Year of Life

Low birth weight is an important determinant of infant and child health. The proportion of singleton babies with low birth weight has been increasing in both Peel and Ontario, and was 4.8 per 100 live births as of 1997 in Peel. Low birth weight was more common among teen mothers and mothers aged 40 years and older. Rates of stillbirth also increased in the Region of Peel. In 1997, stillbirth rates reached a high of 8.5 per 1,000 total births. Stillbirth rates for Ontario remained consistent at an average of 6.5 per 1,000 total births.

Although they were lower in the mid 1990s than in the late 1980s, rates of congenital anomalies have increased in both Peel and Ontario in recent years (1995 to 1997). Rates of neural tube defects, a preventable type of congenital anomaly, have declined in both Peel and Ontario. This trend is likely the result of folic acid supplementation, prenatal screening and selective pregnancy terminations.

Perinatal mortality increased in Peel between 1995 and 1997 and will need to be monitored. This trend might be due to increases in registration of very premature infants who are now surviving due to improvements in obstetric and neonatal care. In contrast, infant mortality (deaths under one year of age) declined.

In Peel in 1999, 84% of new mothers reported breastfeeding their babies at birth. This declined to 43% at six months. Breastfeeding initiation and maintenance rates were higher in mothers who were older and had more education.

Injuries and Violence

In 1998, hospitalization rates for children aged 0–19 years due to unintentional injury were lower in Peel than in Ontario. Males had higher rates of hospitalization than females, and accidental falls were the leading cause of unintentional injury hospitalization for all ages in Peel.

Between 1986 and 1996, rates of childhood mortality due to unintentional injury were lower in Peel than in Ontario. This is likely the result of lower rates of mortality from motor vehicle collisions among Peel children. Mortality rates for unintentional injury in Peel were highest for youth aged 15–19 years, followed by infants aged less than one year.

Intentional injury hospitalizations were lower in the Region of Peel than Ontario in 1998. In Peel, hospitalization rates for intentional injuries were higher for females than for males. Assault was a leading cause of intentional injury in both Peel and Ontario. It is of concern that hospitalization rates due to assault were highest in the less than one year age group for Peel and Ontario.

Mortality rates from intentional injuries were highest for youth aged 15–19 years in Peel. There were 57 childhood deaths due to intentional injuries between 1986 and 1996 in the Region of Peel.

Communicable Disease

Immunization coverage across the Region of Peel varies by vaccine and there is room for improvement. The incidence of vaccine preventable diseases declined between 1991 and 2000 in Peel. It is necessary to maintain and improve immunization coverage if this trend is to continue.

Enteric infections, such as campylobacteriosis, salmonellosis and giardiasis, are also declining in incidence in Peel, but they remain among the most common communicable diseases in children.

Mental Health

Mental disorders are uncommon among very young children but become more prevalent with age. In 1998, hospitalization rates for mental disorders were generally lower in Peel than in Ontario for children aged 10–14 and 15–19. “Neurotic disorders, personality disorders and other non-psychotic disorders” was the most common mental disorder category resulting in child hospitalization in both Peel and Ontario.

In Peel and Ontario in 1998, hospitalization for attempted suicide was higher among females than males. In Peel in 1998, 115 teens aged 15–19 years were hospitalized following attempted suicide. Between 1986 and 1996, 36 Peel teenagers aged 15–19 years died as a result of suicide.

Dental Health

In the 1998 Dental Indices Survey, 37% of Peel children had ever had a cavity. This was higher than Ontario data for 1994, in which 30% of children had ever had a cavity. At the time of the survey, 25% of children examined had untreated decay and 15% were in need of urgent dental treatment.

Tobacco, Alcohol and Drug Use

Youth smoking in Canada declined during the 1980s, but increased during the 1990s. In 1996/97, 76% of Peel children aged 12–19 were reported to be living in smoke-free homes.

In 1996/97, 4% of Ontario youth aged 12–19 years reported heavy drinking (15 or more drinks per week), and 20% reported binge drinking (five or more drinks on one occasion, one or more times per month). Seven per cent of Ontario teens aged 16–19 years reported drinking and driving. These behaviours were more prevalent among males than females. There were no data available for youth in Peel.

In 2001, one-third of students in grades 7–13 in Ontario reported using an illicit drug in the past year. Cannabis, hallucinogens, non-medical stimulants, ecstacy and solvents were the most commonly used illicit drugs. Ecstacy use increased from 0.6% in 1993 to 6% in 2001. Reported cannabis use more than doubled from 13% in 1993 to 29% in 2001. Provincial surveys have not included sufficient numbers of Peel children to directly measure levels of drug use in Peel.

Nutrition, Physical Activity and Obesity

Obesity is an important risk factor for health in children and adults. Body weight is determined by the balance between diet and physical activity. National health surveys indicate that Canadian children are becoming significantly more overweight and obese. This trend is consistent with evidence that children are consuming less fruit and vegetables and are exercising less. Nearly one-third (32%) of children aged 12–19 in Peel were classified as inactive according to the Physical Activity Index. No other data are available on child obesity, diet or physical activity levels in Peel.

Sexual Health

Teen pregnancy rates (15–19 years) declined between 1993 and 1997 in both Peel and Ontario; rates were lower in Peel than in Ontario. In Peel in 1997, there were 1,122 teen pregnancies and 294 births.

In 1996/97, 31% of Peel teens reported having engaged in sexual intercourse in the past year. Twenty-eight per cent of sexually active Ontario teens reported having two or more partners in the past year and 63% reported they always used a condom.

Sexually transmitted diseases were the most common reportable communicable diseases, and rates were highest among the young. In Peel, rates of the two most common sexually transmitted diseases—gonorrhea and chlamydia—increased among teens between 1997 and 2000. There were nearly 450 total cases of these two diseases in youth aged 15–19 years in 2000.

Leading Causes of Child Mortality and Hospitalization in Peel

Overall, mortality rates for children were lower in Peel than in Ontario. The leading causes of death varied by age. Child hospitalization rates in Peel were higher than those in Ontario for 1–9 year olds, but lower for 10–19 year olds.

CHILD HEALTH Report 2002

Introduction

The Child Health Report 2002 is one of an ongoing series of health status reports published by the Region of Peel Health Department to describe the health of the region's population.

This report provides an overview of the health status of Peel's children, including:

- **child population**
- **family and community**
- **infant health**
- **injuries and violence**
- **communicable disease**
- **mental health**
- **dental health**
- **tobacco, alcohol and drug use**
- **nutrition, physical activity and obesity**
- **sexual health**
- **child mortality and hospitalization**

This report makes use of a wide variety of data to describe child health in Peel. A number of important gaps are apparent in the information and these will need to be addressed in future if a comprehensive picture of child health is to emerge.

The *Child Health Report 2002* is intended to be a resource for the Health Department, community groups, health and social service agencies, Boards of Education, elected officials, planners and residents to assist in the planning of programs and services for children and youth.

Peel's Children

Introduction

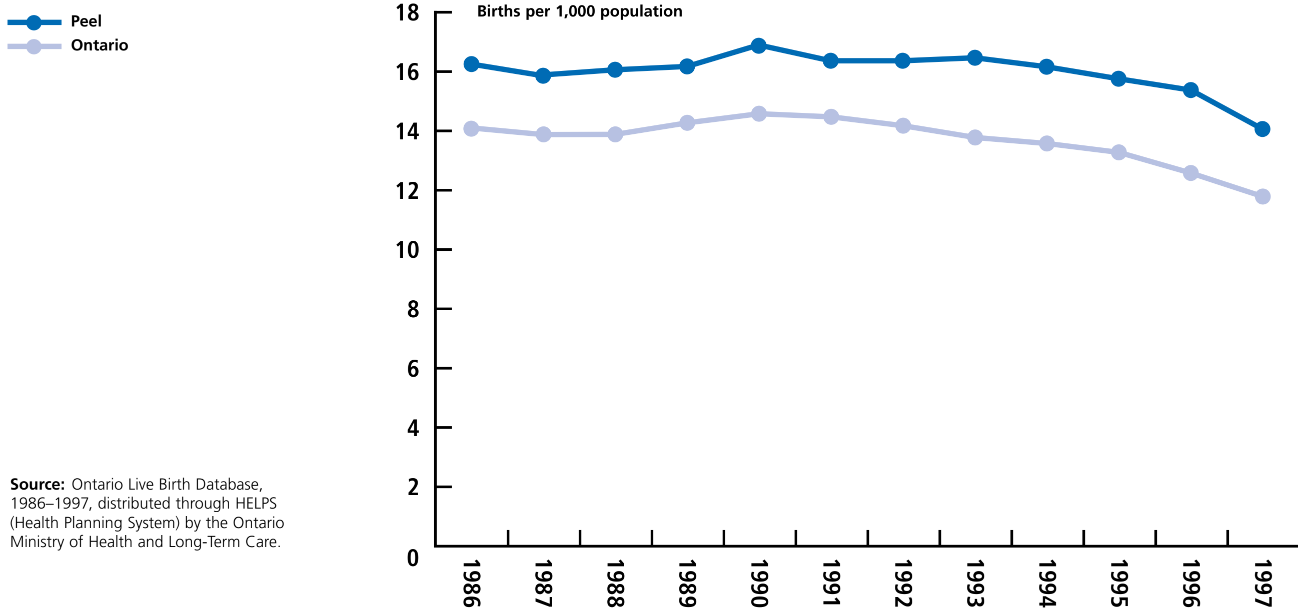
The population of children in the Region of Peel is influenced by annual numbers of births and deaths, and by migration to and from the Region. This chapter will describe births, the population structure and population growth of children and youth in the Region of Peel, with comparisons to Ontario. Infant and child mortality is described in the chapters titled *Infant Health—the First Year of Life (see page 23)* and *Leading Causes of Child Mortality and Hospitalization in Peel (see page 79)*.

Births

In 1997, the most recent year for which official data are available, there were 12,959 live births in the Region of Peel, which represented 9.8% of all live births in Ontario.

Crude birth rates* in Peel were consistently higher than rates in Ontario over the 12-year period between 1986 and 1997. After reaching a peak in 1990, crude birth rates in Peel declined slowly to 14.1 births per 1,000 in 1997. Ontario rates also decreased over this same period *(see Figure 1.1)*.

Figure 1.1—Crude Birth Rates, Region of Peel and Ontario, 1986–1997



Source: Ontario Live Birth Database, 1986–1997, distributed through HELPS (Health Planning System) by the Ontario Ministry of Health and Long-Term Care.

* Crude birth rates are defined as the number of live births per 1,000 total population.

This difference in crude birth rates between Peel and Ontario is due to a higher proportion of women of reproductive age and higher fertility rates among women in this age group in Peel.

The number of live births in Peel increased by 35% between 1986 and 1996. Since 1996, the number of live births has declined by 4.6% to 12,959 births in 1997, as shown in Table 1.1.

The distribution of live births in Mississauga, Brampton and Caledon consistently reflects the population distribution in Peel. From 1986 to 1997, approximately 63% of Peel's population lived in Mississauga, 32% in Brampton and 5% in Caledon. On average, proportions of live births by municipality of maternal residence were 63%, 33% and 4% respectively for the same period *(see Table 1.1)*.

Table 1.1—Number of Live Births by Municipality of Maternal Residence, Region of Peel, 1986–1997

Year	Mississauga	Brampton	Caledon	Peel
1986	6,177	3,445	438	10,060
1987	6,398	3,405	455	10,258
1988	6,775	3,641	462	10,878
1989	7,184	3,894	476	11,554
1990	7,826	4,195	469	12,490
1991	7,760	4,194	477	12,431
1992	8,118	4,238	495	12,851
1993	8,459	4,383	498	13,340
1994	8,736	4,333	443	13,512
1995	8,531	4,535	500	13,566
1996	8,459	4,627	494	13,580
1997	8,142	4,285	532	12,959

Source: Ontario Live Birth Database, 1986–1997, distributed through HELPS (Health Planning System) by the Ontario Ministry of Health and Long-Term Care.

Sixty-five per cent of all live births to mothers living in the Region of Peel occurred within Peel's borders: the highest was for mothers in Brampton (74%) and lowest for mothers in Caledon (28%) *(see Table 1.2 on following page)*. The City of Toronto was the next most likely place of birth, with 29% of newborns in Peel delivered in Toronto. For Caledon mothers, approximately half of newborns were delivered in Toronto.

Table 1.2—Location of Live Birth by Municipality of Maternal Residence, Region of Peel, 1997

Location	Municipality of Residence of Mother							
	Mississauga		Brampton		Caledon		Peel	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Peel Region	5,091	62.5	3,169	74.0	147	27.6	8,407	64.9
Toronto	2,448	30.1	993	23.2	265	49.8	3,706	28.6
Halton Region	517	6.3	62	1.4	11	2.1	590	4.6
York Region	14	0.2	29	0.7	38	7.1	81	0.6
Dufferin	NR	NR	8	0.2	52	9.8	61	0.5
Hamilton-Wentworth	36	0.4	11	0.3	5	0.9	52	0.4
Other	35	0.4	13	0.3	14	2.6	62	0.5
Total	**8,142**	**100.0***	**4,285**	**100.0***	**532**	**100.0***	**12,959**	**100.0***

NR= Not released due to small numbers.

* Per cent totals do not equal 100 due to rounding.

Source: Ontario Live Birth Database, 1997, distributed through HELPS (Health Planning System) by the Ontario Ministry of Health and Long-Term Care.

The Child Population

The child population in Peel is made up of children born to Peel residents (described at the beginning of this chapter) and children who move to Peel from other cities, provinces and countries.

In 1996, there were 254,380 children and youth aged 0–19 years living in the Region of Peel, accounting for just under one-third of the population. Peel has a slightly higher proportion of young persons aged 0–19 years (30%) compared to Ontario (27%).

Table 1.3 shows that the distribution of children aged 0–19 years is similar for each of Peel's municipalities.

Table 1.3—Number and Proportion of Children Aged 0–19 Years by Age Group and Municipality, Region of Peel, 1996

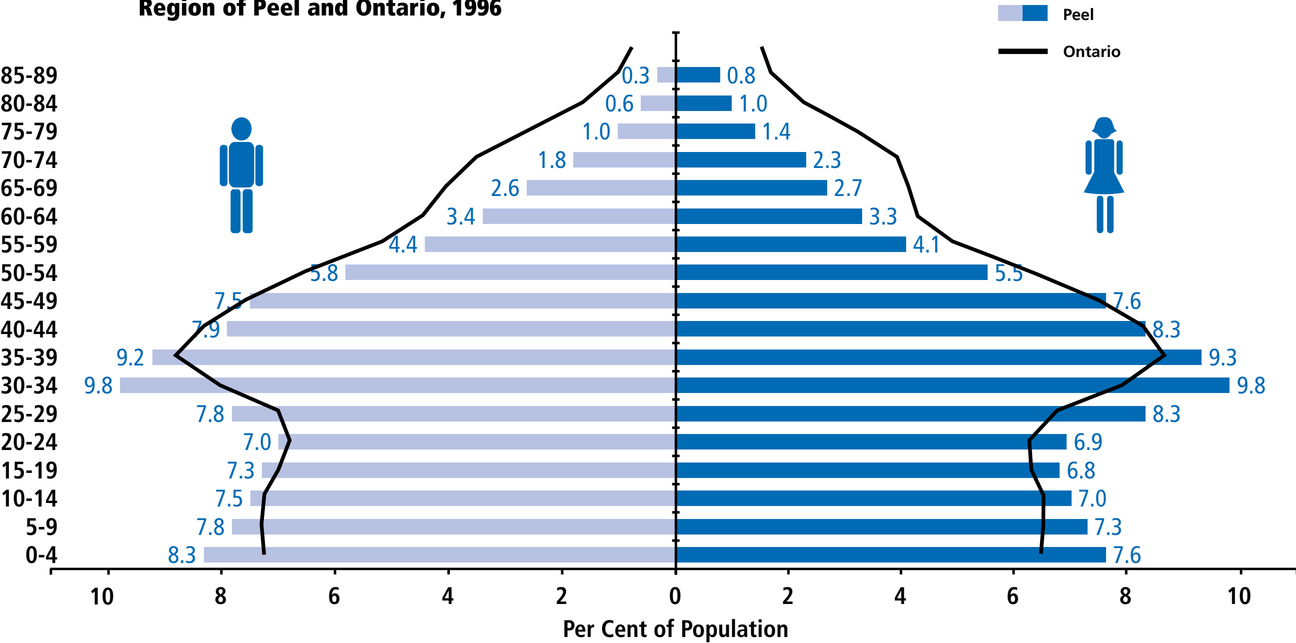
Age Group	Mississauga		Brampton		Caledon		Peel	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
0–4 years	42,580	7.8	22,380	8.3	2,740	6.9	67,715	7.9
5–9 years	40,025	7.4	21,120	7.9	3,260	8.2	64,395	7.6
10–14 years	38,820	7.1	20,190	7.5	3,140	7.9	62,150	7.3
15–19 years	37,910	7.0	19,455	7.3	2,755	6.9	60,120	7.1
Total 0–19 years	**159,335**	**29.3**	**83,145**	**31.0**	**11,895**	**29.8**	**254,380**	**29.8**
Total Population	**544,382**		**268,251**		**39,893**		**852,526**	

Note: Per cent calculations based on total population by municipality.

Source: Statistics Canada, 1996 Census.

Maps 1.1, 1.2, 1.3 and 1.4, found at the end of this chapter, display the proportion of children aged 0–4, 5–9, 10–14 and 15–19 years by census tract for the Region of Peel in 1996. Higher proportions of children aged 0–4 years reside in the area of newly established subdivisions in the northwest of Mississauga, as well as in downtown Brampton *(see Map 1.1 on page 7)*.

Figure 1.2—Population by Sex and Age Group, Region of Peel and Ontario, 1996



Source: Statistics Canada, 1996 Census.

Figure 1.2 is a population pyramid, which shows the age and sex distribution of Peel's population in 1996. This population pyramid shows the relative proportion of males and females in each age group and highlights the following issues:

- The age structure of Peel and Ontario populations differ. Although the shape of the population pyramid is similar for Peel and Ontario, in Peel in 1996, there was a higher proportion of children aged 0–9 years and adults aged 25–39 years compared to Ontario. In contrast, there were lower proportions of older adults (aged 50 years and older) in Peel compared to Ontario.
- In Peel, this higher proportion of adults (25–39 years) may be explained by high numbers of new immigrants to the Region who are typically within this age category.
- Today, there would still be a higher proportion of adults in the reproductive ages (group previously aged 25–39 would now be 30–44). Persons within this age group will likely continue to influence the number of births in the Region of Peel over the next five years.

According to Statistics Canada, the number of children and youth in Peel Region aged 0–19 years is expected to grow to 331,802 by 2016, a 30% increase from 1996. Although there will be more children, their proportion of the total population will be considerably smaller, falling from 29.8% in 1996 to

only 22.9% in 2016, as shown in Table 1.4. The reasons for this include a declining fertility rate and a reduction in the proportion of the population in the reproductive age group. It is important to consider population growth for different age groups in assessing community health needs and planning for future health programs and services in the Region of Peel.

Table 1.4—Total Population and Proportion of Population by Age Group, Region of Peel and Ontario, 1996, 2006 and 2016

Age Group	Peel			Ontario		
	1996	2006	2016	1996	2006	2016
0–4 years	67,715 (7.9%)	68,914 (5.8%)	74,178 (5.1%)	734,170 (6.8%)	641,242 (5.1%)	627,202 (4.6%)
5–9 years	64,395 (7.6%)	77,659 (6.6%)	79,176 (5.5%)	748,065 (7.0%)	725,214 (5.8%)	669,216 (4.9%)
10–14 years	62,150 (7.3%)	86,816 (7.4%)	85,141 (5.9%)	731,980 (6.8%)	834,707 (6.7%)	722,775 (5.3%)
15–19 years	60,120 (7.1%)	81,486 (6.9%)	93,307 (6.4%)	698,005 (6.5%)	840,162 (6.7%)	805,450 (5.9%)
Total 0–19 years	**254,380 (29.8%)**	**314,875 (26.7%)**	**331,802 (22.9%)**	**2,912,220 (27.1%)**	**3,041,325 (24.4%)**	**2,824,643 (20.8%)**
Total Population	**852,525**	**1,179,772**	**1,451,782**	**10,753,570**	**12,456,991**	**13,551,345**

Notes: Per cent calculations based on total population.

Sources: Statistics Canada, 1996 Census.

Projections* 2006 and 2016 from Statistics Canada, Demographic Division, simulations prepared for client, custom prepared projections (not official Statistics Canada projections), August 1999, distributed by the Health Planning Branch, Ontario Ministry of Health and Long-Term Care.

*Population projections are a way to estimate the number of people at a given year in the future, if a given set of assumptions (mortality, fertility and migration) were to prevail. The accuracy of the projections depends on the extent to which the assumptions on mortality, fertility and migration are correct.

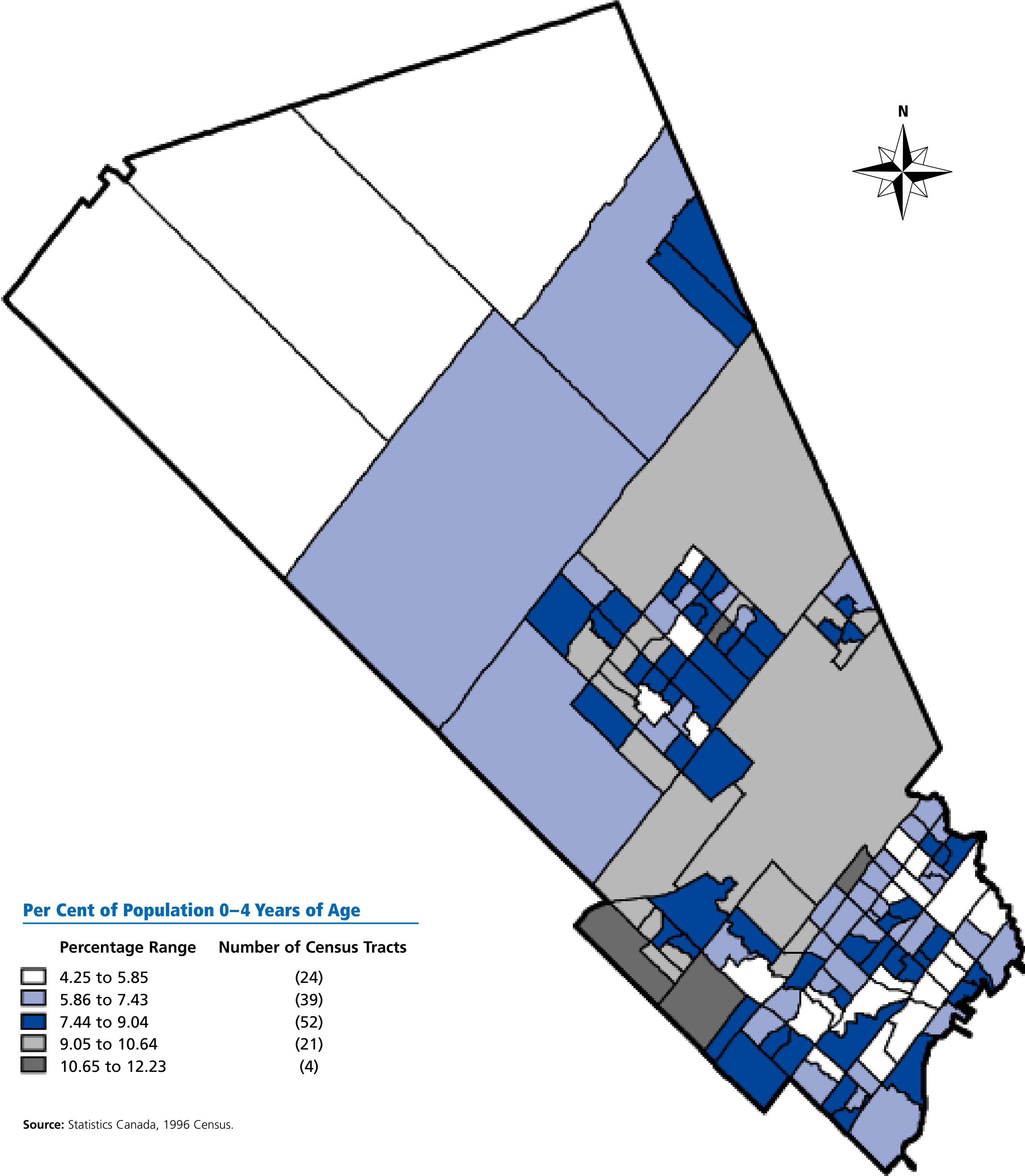
Summary

In 1997, there were 12,959 live births in Peel Region, which made up approximately 10% of all live births within the province. The majority of live births (65%) occurred within Peel Region; however, there were also many births to Peel residents that occurred in other jurisdictions, such as Toronto and Halton. Crude birth rates in Peel were 14.1 per 1,000 population in 1997; these rates have declined substantially over time.

As of 1996, there were 254,380 children and youth aged 0–19 years living in Peel Region. The proportion of children by age group was similar by municipality; however, within municipalities, there were some census tracts that had higher proportions of children and youth.

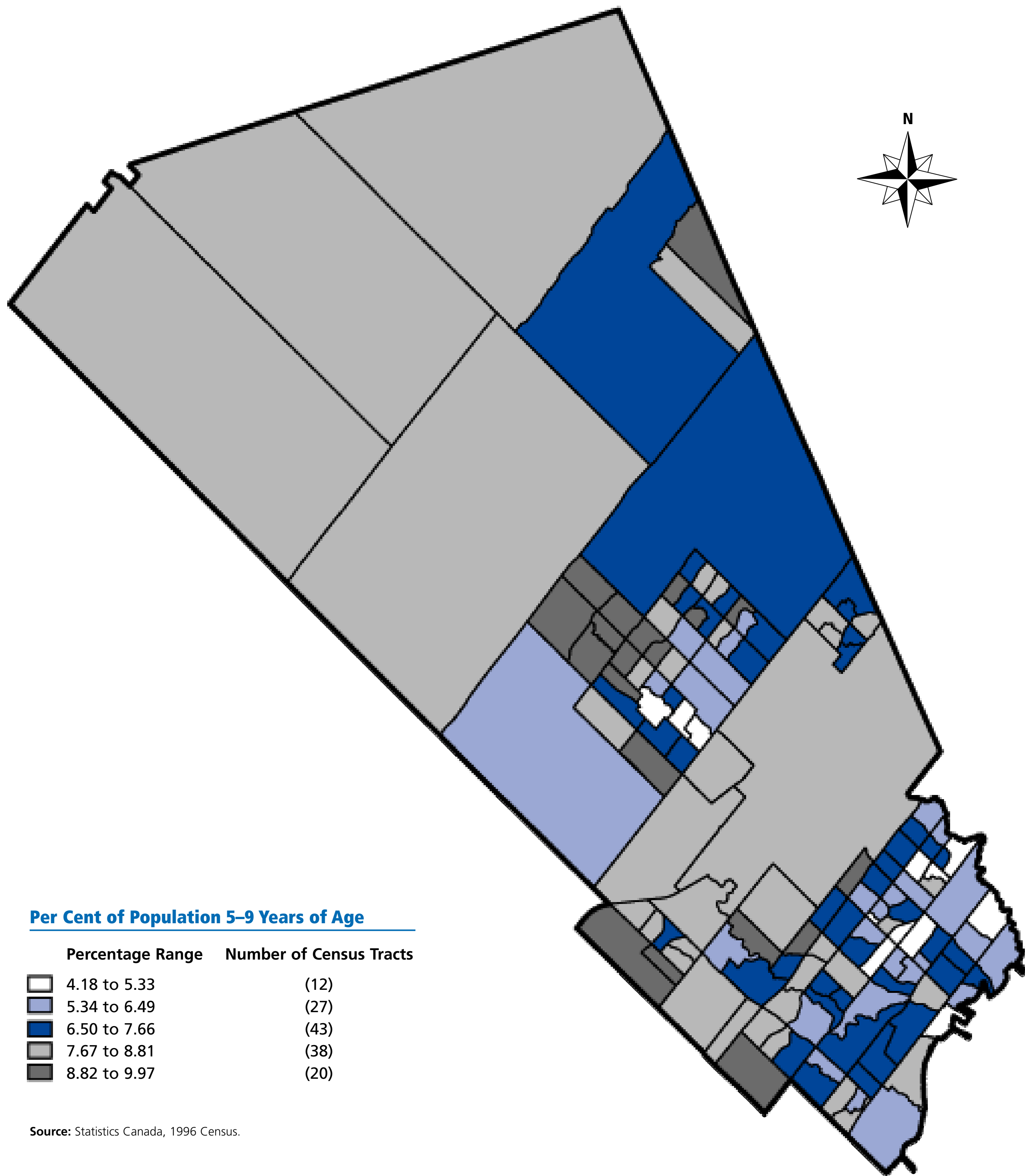
Although the proportion of the population composed of 0–19 year olds will decline over the next 20 years, the overall numbers of children in Peel will increase.

Map 1.1—Proportion of Population Aged 0–4 Years by Census Tract, Region of Peel, 1996



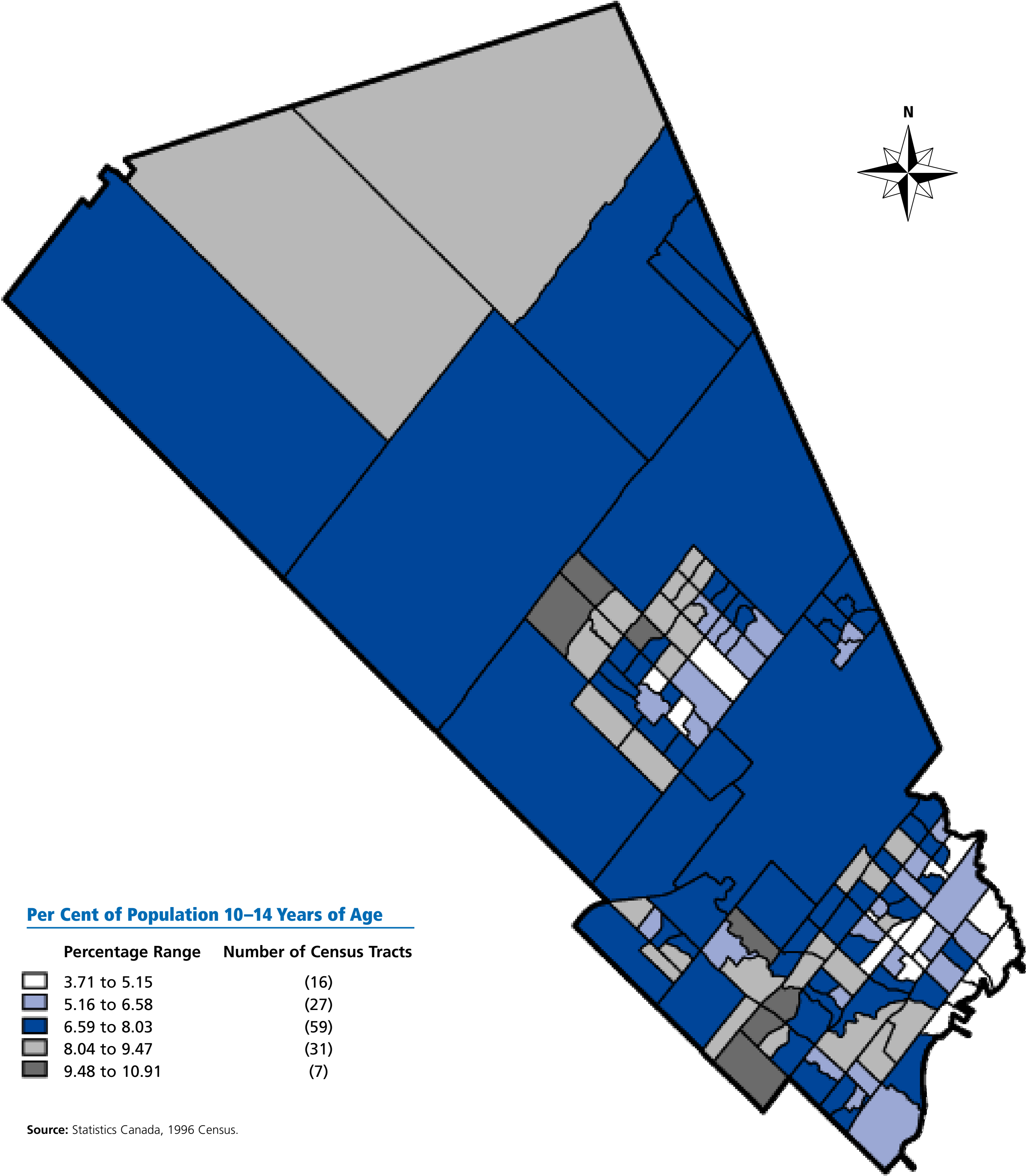
Source: Statistics Canada, 1996 Census.

Map 1.2—Proportion of Population Aged 5–9 Years by Census Tract, Region of Peel, 1996



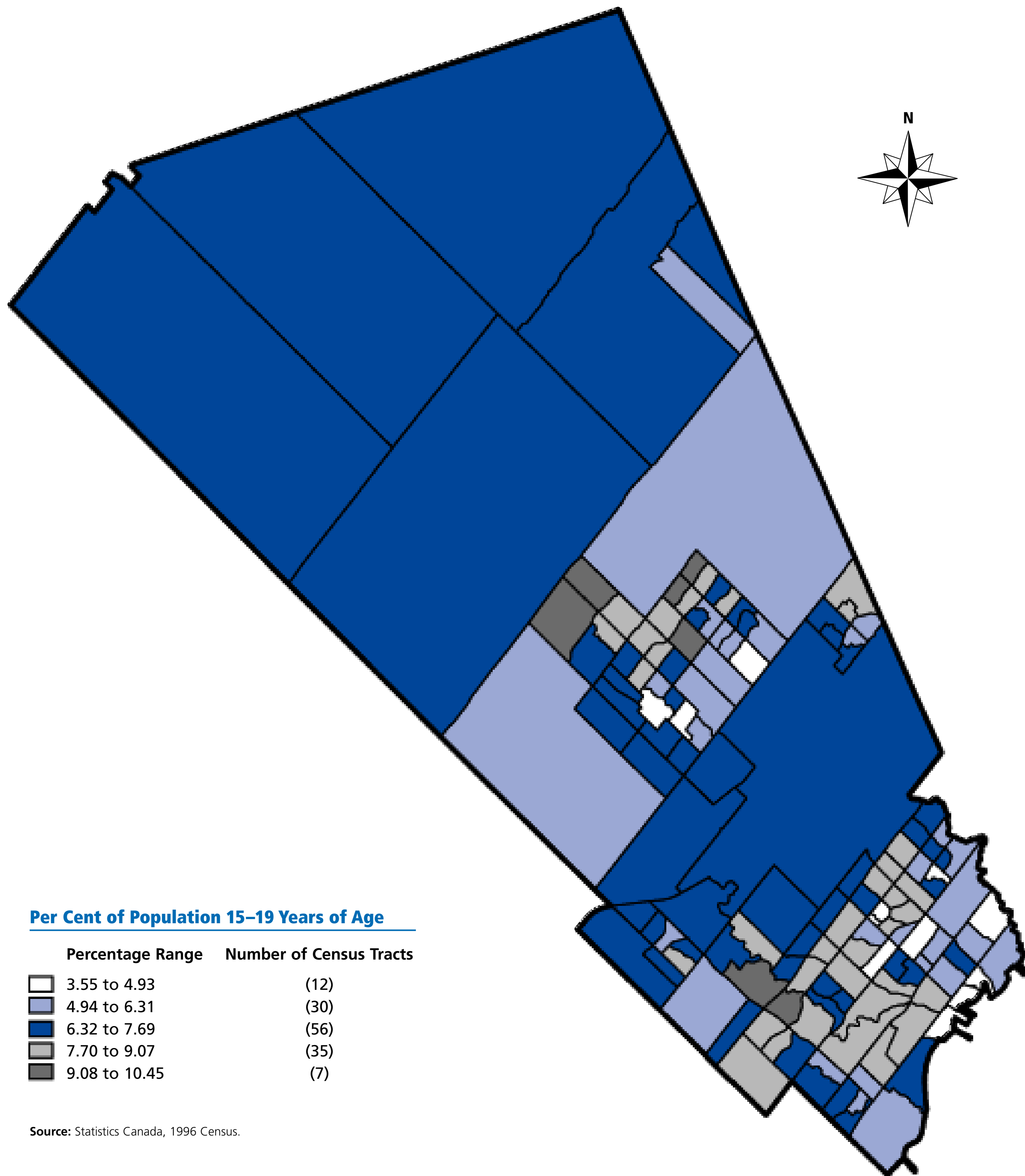
Source: Statistics Canada, 1996 Census.

Map 1.3—Proportion of Population Aged 10–14 Years by Census Tract, Region of Peel, 1996



Source: Statistics Canada, 1996 Census.

Map 1.4—Proportion of Population Aged 15–19 Years by Census Tract, Region of Peel, 1996



Source: Statistics Canada, 1996 Census.

Family and Community Context

Introduction

This section provides a description of family structure and a general overview of the social environment of families and children, including factors such as income, employment and language. These factors are referred to as "determinants of health" since they have a powerful influence on health and health-related behaviours. Comparisons of Peel data to Ontario will be made throughout.

Family Structure

Family structure plays an important role in our health status as families provide support and security, and help to influence lifestyle choices. Over the past several decades, family structure has been changing. Although married couples continue to be the main type of family, the proportion of those in common-law marriages and lone parent* families have increased over the past three decades.[1,2] The proportion of lone parent families in Canada was 9% in 1971. By 1996, this number had increased to 14.5%.

Lone parents, especially women, tend to have lower levels of education, fewer job skills and therefore lower income in comparison to other types of families.[2] These factors contribute to poorer health, on average, for lone parents and their children.[3]

During the 1996 census year, information was collected about different types of families, one of which was the "census family". The census family was defined as a couple who were married or living common-law, or a lone parent with one or more never-married children living at home. The definition of a census family in 1996 did not include individuals living in same-sex relationships with children.

In 1996, Peel had a higher proportion of census families with children living at home (73.5%) compared to Ontario (66%). Table 2.1 *(see following page)* shows the proportion of census families with children living at home by family structure. Details about census families by municipality can be found in Table 2.2 *(see following page)*.

* A lone parent is defined as a mother or father, with no spouse or common-law partner present, living in a dwelling with one or more never-married children.

Table 2.1—Proportion of Census Families in Private Households with Children Living at Home by Family Structure, Region of Peel and Ontario, 1991 and 1996

Family Types	Peel		Ontario	
	1991	1996	1991	1996
Husband/wife families with children at home	**58.3%**	**57.7%**	**49.9%**	**48.3%**
Common-law couples with children at home	**2.3%**	**2.8%**	**2.6%**	**3.3%**
Lone parent families:	**11.2%**	**13.0%**	**12.6%**	**14.4%**
Male lone parent	2.2%	2.2%	2.2%	2.3%
Female lone parent	9.0%	10.8%	10.4%	12.1%
Total number of census families in private households	**198,055**	**233,020**	**2,726,735**	**2,932,725**

Sources: Statistics Canada, 1991 and 1996 Censuses.

Table 2.2—Number and Proportion of Census Families in Private Households by Type of Family, Mississauga, Brampton, Caledon, Region of Peel and Ontario, 1991 and 1996

	Mississauga		Brampton		Caledon		Peel		Ontario	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
1996										
Total husband/wife families with children at home	**85,825**	**57.7**	**42,120**	**57.7**	**6,565**	**57.7**	**134,515**	**57.7**	**1,417,240**	**48.3**
Total common-law couples with children at home	**3,645**	**2.5**	**2,435**	**3.3**	**340**	**3.0**	**6,420**	**2.8**	**97,050**	**3.3**
Total lone parent families by sex of parent	**19,685**	**13.2**	**9,685**	**13.3**	**880**	**7.7**	**30,250**	**13.0**	**421,705**	**14.4**
Male lone parent	3,245	2.2	1,675	2.3	175	1.5	5,095	2.2	66,665	2.3
Female lone parent	16,445	11.1	8,005	11.0	710	6.2	25,155	10.8	355,040	12.1
Total number of census families in private households by family size	**148,690**		**72,965**		**11,370**		**233,020**		**2,932,725**	
1991										
Total husband/wife families with children at home	**71,975**	**57.5**	**37,580**	**59.7**	**5,965**	**60.4**	**115,525**	**58.3**	**1,359,790**	**49.9**
Total common-law couples with children at home	**2,790**	**2.2**	**1,635**	**2.6**	**215**	**2.2**	**4,640**	**2.3**	**70,135**	**2.6**
Total lone parent families by sex of parent	**14,545**	**11.6**	**7,000**	**11.1**	**660**	**6.7**	**22,205**	**11.2**	**342,805**	**12.6**
Male lone parent	2,685	2.1	1,425	2.3	180	1.8	4,290	2.2	58,995	2.2
Female lone parent	11,855	9.5	5,580	8.9	485	4.9	17,915	9.0	283,810	10.4
Total number of census families in private households by family size	**125,195**		**62,985**		**9,875**		**198,055**		**2,726,735**	

Sources: Statistics Canada, 1991 and 1996 Censuses.

The majority of census families in Peel were married or common-law couples with children living at home (60.5%). Lone parents accounted for 13% of families. Although not shown in the table, 37.5% of Peel families with children had one child, 43.1% had two and 19.6% had three or more.

In Peel, the proportion of families comprised of one parent living with one or more children rose from 11.2% in 1991 to 13.0% in 1996. Females headed most of these lone parent families as shown in Table 2.1 *(see previous page)*. The proportion of lone parent families was higher in Mississauga (13.2%) and Brampton (13.3%) as compared to Caledon (7.7%). The distribution of lone parent families in Peel is shown in Map 2.1 *(see page 20)*. A section of Bramalea in Brampton had a fairly high proportion (24.4% to 29.3%) of lone parent families.

Community Context

Income, education and employment are inter-related measures of socio-economic status. Persons with lower levels of education tend to earn lower incomes, have unskilled jobs and experience higher levels of unemployment. Employment is important as it enhances a person's identity, self-esteem and social contact.

Those with low incomes tend to be at higher risk of exposure to poor living and working conditions, and have lower life expectancy and higher mortality rates than those with higher incomes.[4,5] This association between income and health was documented for the Region of Peel in the *State of the Region's Health 2001* report.[6]

Language has a direct effect on people's ability to deal with the written materials that they encounter on a daily basis. An inability to read or speak English or French can limit knowledge of, and access to, community resources, and increases the risk of social isolation. It may also reduce access to health services and impair communication with health practitioners.

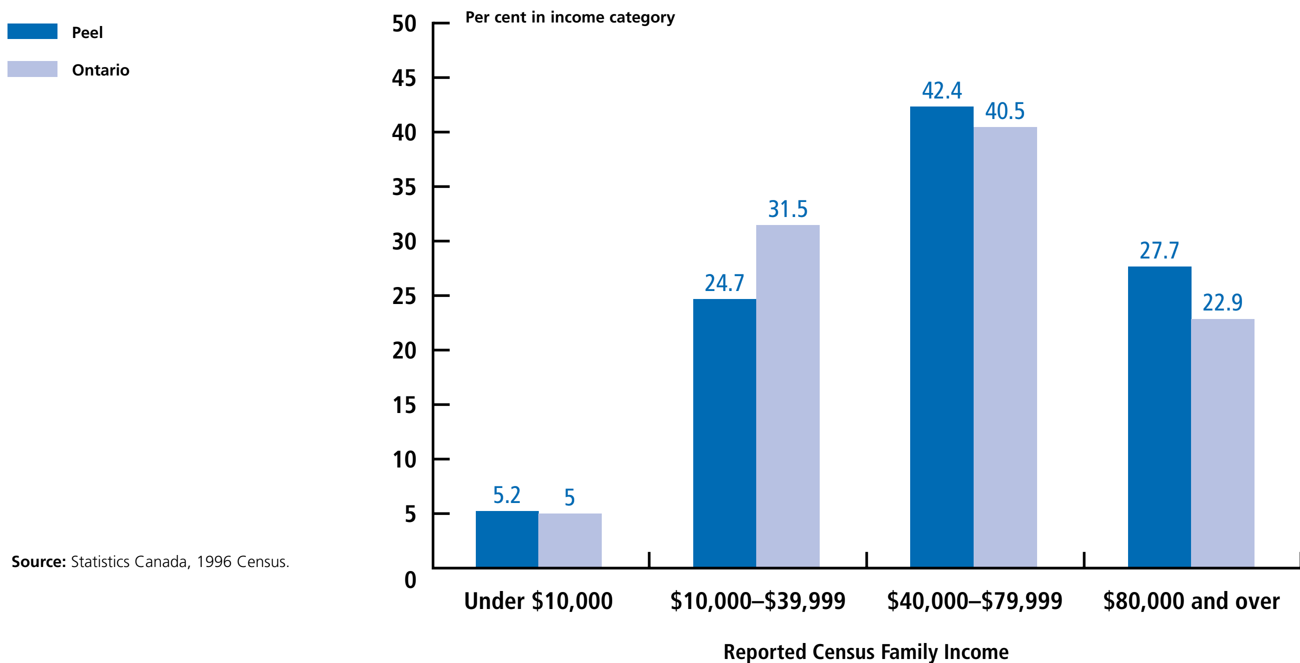
Two indicators of language from the 1996 census include language spoken at home and knowledge of official languages. "Home Language" refers to the language spoken most often at home by the individual at the time of the census. "Knowledge of Official Languages" refers to the ability to conduct a conversation in English only, in French only, in both English and French, or in neither of the official languages of Canada. While there are other indicators of language, such as mother tongue (first language learned at home in childhood and still understood by the individual at the time of the census), language at home and knowledge of official languages more accurately reflect whether a potential barrier to health exists at the time of the census.

Census Family Income

Family income from the 1996 census was estimated by summing the self-reported total income of all members of the family for the year prior to the census. Although there are several definitions of family in the census, the term family in this graph refers to the 1996 definition of the census family, which is a married couple, a couple living common-law, or a lone parent living with one or more never-married children at home.

As seen in Figure 2.1, there was a higher proportion of families in Peel (70.1%) who earned more than $40,000 annually compared to Ontario (63.4%)

Figure 2.1—Distribution of Reported Census Family Income, Region of Peel and Ontario, 1995



Source: Statistics Canada, 1996 Census.

On average, census families in Peel earned more annually than Ontario census families did. This finding was consistent across all family types. Although not shown, lone parent females in Peel had the lowest annual income compared to other family types within Peel.

Low Income

Child poverty is an important determinant of the health of children. The term poverty in this report is used to describe low-income status as defined by Statistics Canada.

In the 1996 Census, the prevalence of low income was defined as the proportion of families or unattached individuals with an income below the low-income cut-off. The 1996 Census low-income cut-off was based on a matrix that included both family size and the size of the community of residence. For example, a family of four living in a populated area of between 100,000 and 499,999 people would be classified as low-income if their income level for the year 1995 was $27,235 or less. The following table describes the prevalence of low income in census families with children under the age of 18 years.

Overall, almost one in five families with children under age 18 lived in poverty—19.0% in Peel compared to 22.2% in Ontario *(see Table 2.3)*. The prevalence of low income for married or common-law couples with children under age 18 years was 13.3%, while the proportion for lone parent families with children under 18 years was 51.6%. The prevalence of low income was higher for lone parent families, especially for those headed by females (55.9%). Male lone parent families had a low income rate of 21.7%.

Table 2.3—Prevalence of Low Income by Type of Families with Children*, Region of Peel and Ontario, 1995

Type of Economic Family	Peel		Ontario	
	Number	Per Cent	Number	Per Cent
Married or common-law couple with children less than 18 years:	**9,790**	**13.3**	**119,525**	**13.7**
Families with children 0–9 years	5,365	13.2	67,640	14.6
Families with children 10–17 years	4,430	13.5	51,885	12.7
Lone parent families with children less than 18 years:	**6,590**	**51.6**	**118,950**	**57.7**
Families with children 0–9 years	3,410	60.4	65,415	66.8
Families with children 10–17 years	3,180	44.7	53,525	49.4
Male lone parent families with children less than 18 years:	**350**	**21.7**	**8,160**	**30.5**
Families with children 0–9 years	105	24.7	3,295	37.1
Families with children 10–17 years	240	20.2	4,860	27.2
Female lone parent families with children less than 18 years:	**6,240**	**55.9**	**110,790**	**61.7**
Families with children 0–9 years	3,305	63.3	62,120	69.8
Families with children 10–17 years	2,940	49.7	48,665	53.7
Total families with children less than 18 years:	**16,380**	**19.0**	**238,475**	**22.2**
Families with children 0–9 years	8,775	18.9	133,055	23.8
Families with children 10–17 years	7,610	19.0	105,410	20.4

* Category determined by age of oldest child.

Source: Statistics Canada, 1996 Census, Special Tabulation, distributed through HELPS (Health Planning System) by the Ontario Ministry of Health and Long-Term Care.

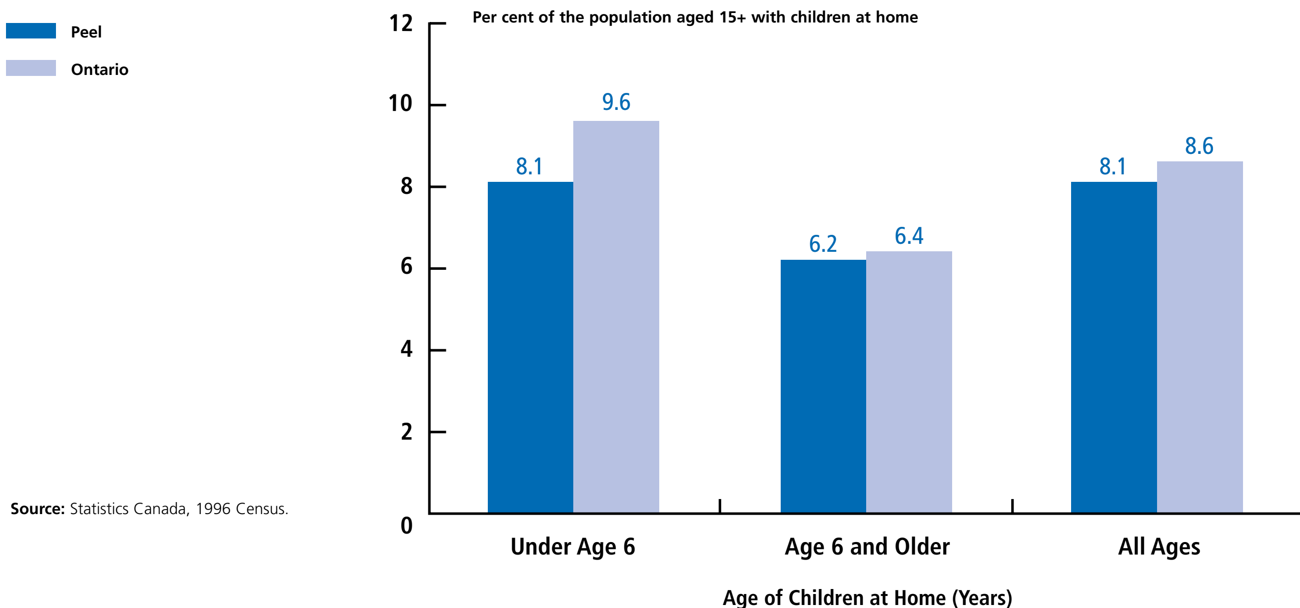
The prevalence of low income was also higher for families with young children aged 0–9 years compared to families with children aged 10–17 years. This was particularly evident for families headed by female lone parents *(see Table 2.3 on previous page)*.

Although not shown, the proportion of low-income families increased between the 1991 and 1996 censuses for both Peel (from 8.7% in 1990 to 13.6% in 1995) and Ontario (from 10.9% in 1990 to 14.8% in 1995). Families living in Caledon had a much lower prevalence of low income compared to those living in Mississauga or Brampton. Map 2.2 *(see page 21)*, shows the variation in the prevalence of low income for economic families (married, common-law, lone parent or persons living with relatives) across the Region of Peel. Several areas, including the north-eastern corner of Mississauga (Malton), a portion of Port Credit, the area around Dixie/Bloor, and a section of Bramalea in Brampton, had a higher proportion (27% to 34%) of economic families living below the low income cut-off point.

Parent Unemployment

Unemployment rates of parents with children at home in 1996 were calculated by dividing the number of parents who were in the labour force and those who were unemployed by the total number participating in the labour force. As shown in Figure 2.2, unemployment rates were higher for parents who had children less than six years of age living at home. Although not shown below, this was particularly noticeable for Peel females with children aged less than six years, where 12.4% reported being unemployed compared to males (4.5%).

Figure 2.2—Unemployment Rates of Parents with Children at Home, Region of Peel and Ontario, 1996



Source: Statistics Canada, 1996 Census.

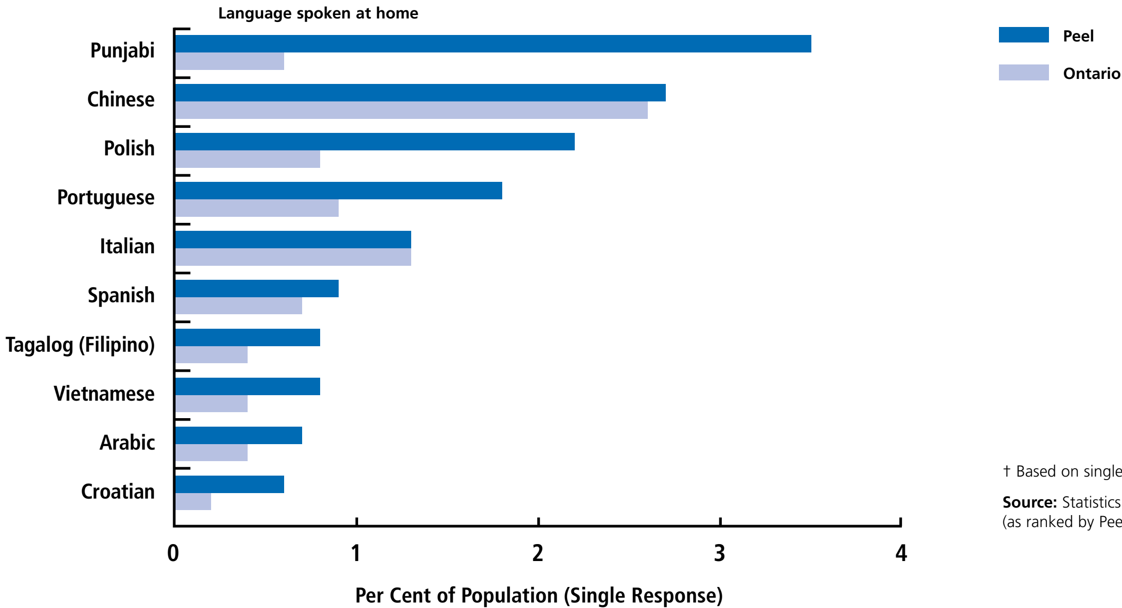
Language

The figure below represents languages spoken at home by the total population and not by families; however, it is the best available measure of languages used by children. It is likely that within some families, there was a mix of languages spoken at home by both parents and children. For children who could not yet speak at the time of the census, the parent or guardian reported the language that the child would be taught to speak at home.

In Peel, English is the language most often spoken at home* (79.6%), followed by Punjabi, Chinese, Polish, Portuguese and Italian *(see Figure 2.3)*. At least 20% of the population in Peel reported speaking a language other than English or French most often at home.

More than 50 different home languages were reported in Peel in the 1996 census. This wide diversity in language reflects a growing multicultural mix within the Region of Peel.

Figure 2.3—Top 10 Languages† other than English, Spoken at Home, Region of Peel and Ontario, 1996



† Based on single responses only.

Source: Statistics Canada, 1996 Census (as ranked by Peel Health).

* Home language is the language spoken most often at home by the individual at the time of the census.

In Canada, English and French are the two official languages. In 1996, the proportion of the Peel population that did not speak either official language* was 3.1%, an increase from 2.4% in 1991. Although the Region of Peel had a substantially greater proportion of people who were not able to communicate in either of the official languages than did Ontario *(see Table 2.4)*, this accounted for only 26,355 people in 1996.

Table 2.4—Population by Knowledge of Official Language Region of Peel and Ontario, 1991 and 1996

Official Language	Peel		Ontario	
	1991	1996	1991	1996
English only	90.3%	89.7%	86.1%	85.7%
French only	0.1%	0.1%	0.5%	0.4%
Both	7.2%	7.1%	11.4%	11.6%
Neither	2.4%	3.1%	1.9%	2.3%
Total population	**729,650**	**849,305**	**9,977,050**	**10,642,795**

Sources: Statistics Canada, 1991 and 1996 Censuses.

When comparing municipalities within Peel, Mississauga had the largest proportion of people who were unable to communicate in either of the two official languages (3.5%; 19,140 people), compared to Brampton (2.6%; 7,045 people) and Caledon (0.4%; 170 people). Map 2.3 *(see page 22)* shows the proportion of the population who did not speak English or French by census tract in Peel. In some areas of northeast Mississauga, as high as 11% of the population were not able to speak English or French.

Summary

Family Structure

The majority of families (61%) living in Peel were classified as married or common-law families. In 1996, 13% of families in Peel were lone parents and of this type of family, the majority were headed by females. Mississauga and Brampton had a higher proportion of lone parent families (13%) than did Caledon (8%).

Community Context

Income

Families in the Region of Peel reported higher average incomes than their Ontario counterparts. This was true across all family types.

In both Peel and Ontario, female lone parents reported earning less compared to male lone parents.

* In Canada, knowledge of official language is defined as the ability to conduct a conversation in English only, in French only, or in both English and French.

The proportion of low-income families increased between the 1991 and 1996 censuses for both Peel (from 8.7% in 1990 to 13.6% in 1995) and Ontario (from 10.9% in 1990 to 14.8% in 1995).

In Peel, 19% of families with children under the age of 18 years living at home were classified as having a low income according to Statistics Canada's low-income cut-off levels. A higher proportion of lone parents (especially females) was classified as having low income compared to other family types.

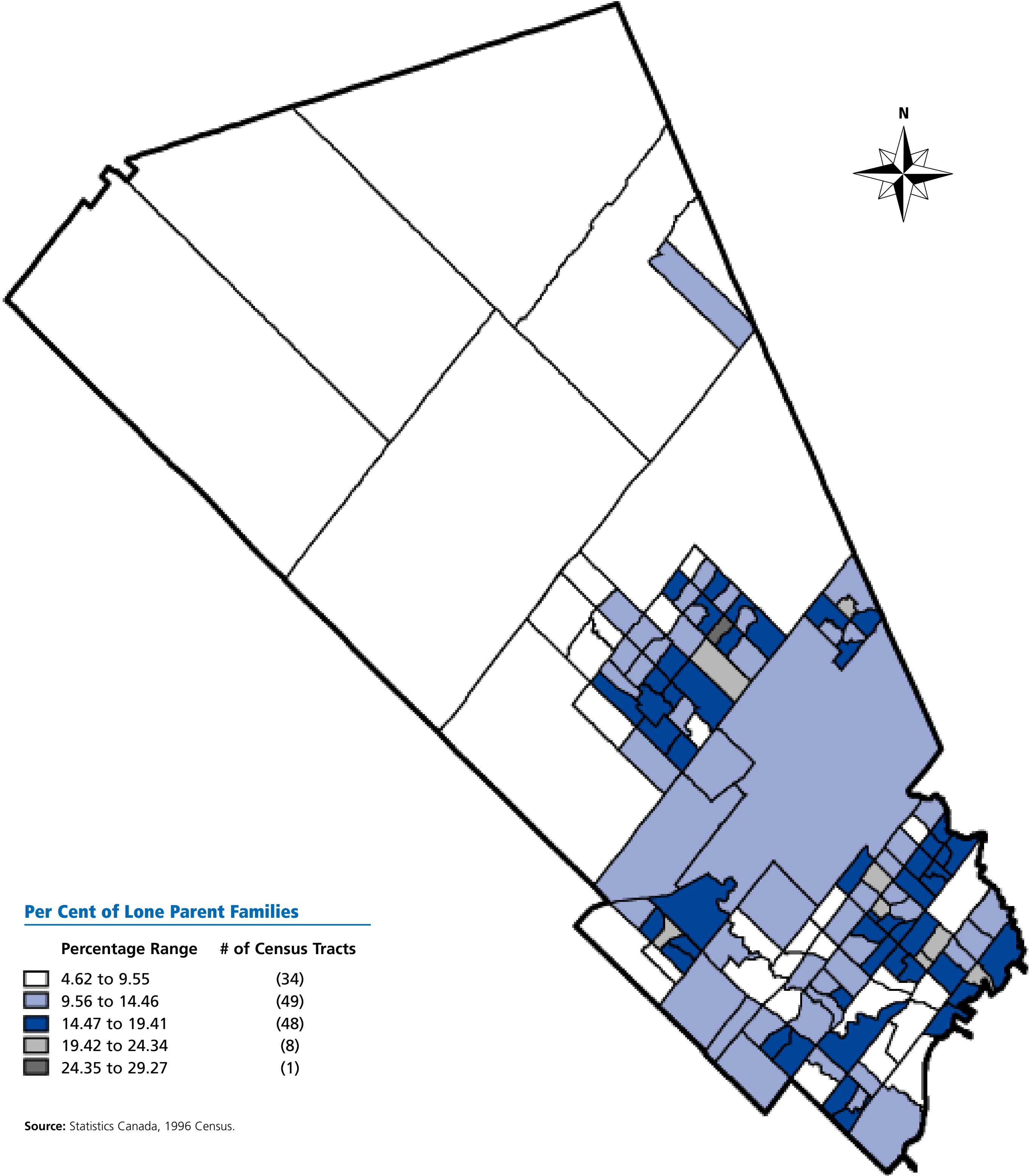
Unemployment

Unemployment rates of parents with children at home were higher for families with children less than six years of age. This was similar for both Peel and Ontario.

Language

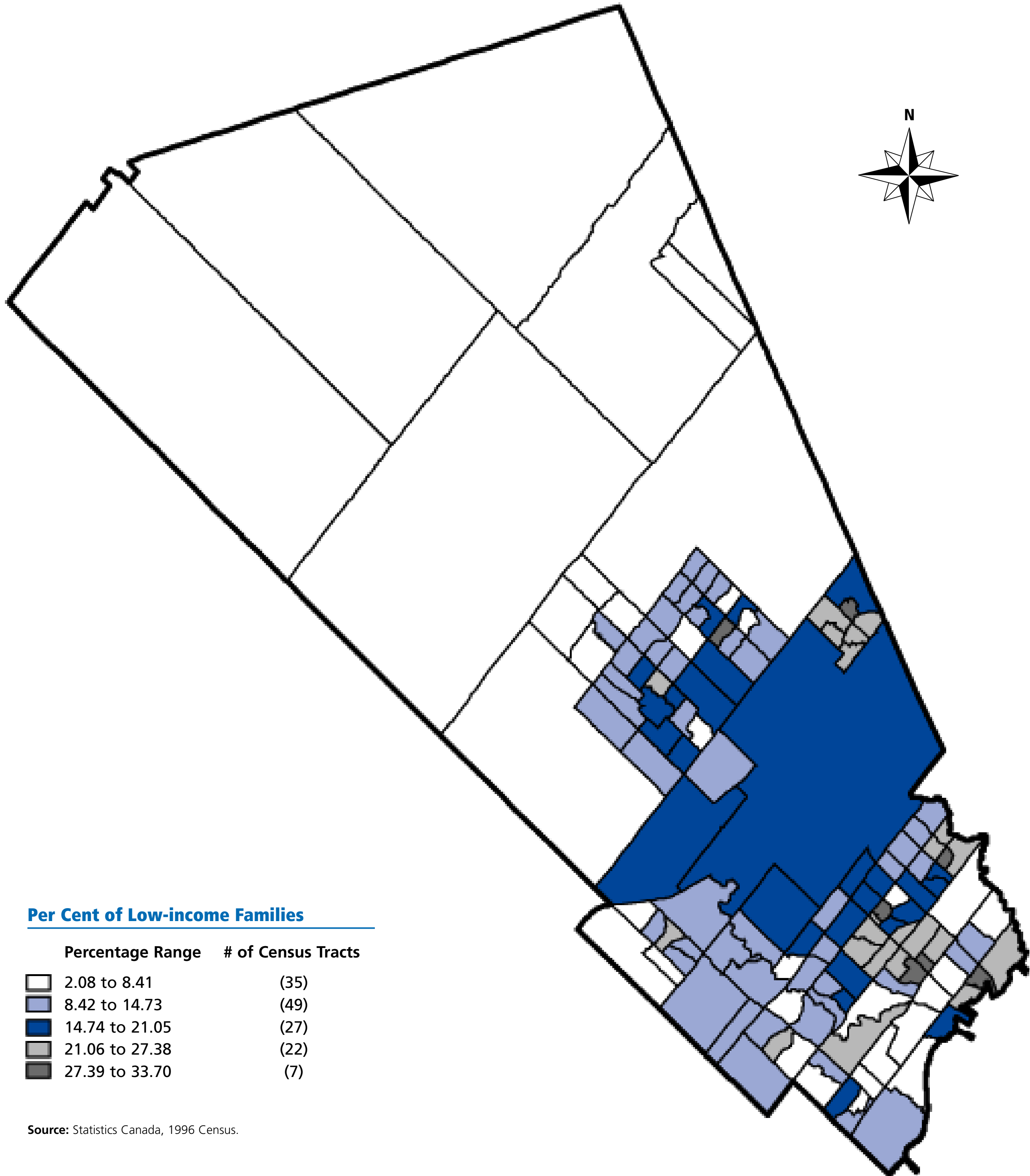
In 1996, four-fifths of residents of Peel spoke English at home but many residents spoke other languages in the home, such as Punjabi, Chinese, Polish and Portuguese. The majority of the population was able to converse in one of Canada's official languages (97%). Three per cent were unable to communicate using English or French; however this proportion was over 10% in some areas of the Region of Peel.

Map 2.1—Proportion of Lone Parent Families by Census Tract, Region of Peel, 1996



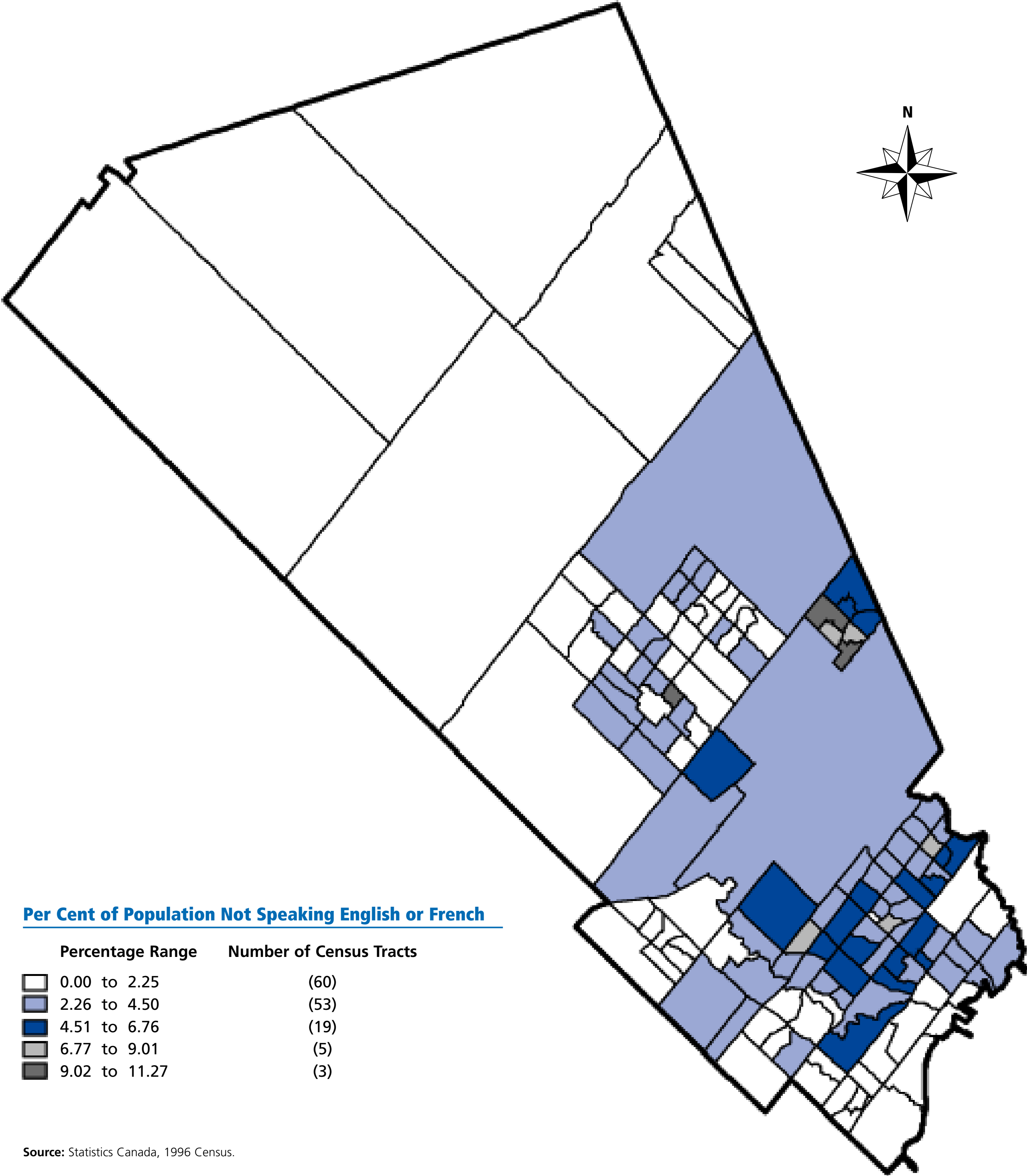
Source: Statistics Canada, 1996 Census.

Map 2.2—Prevalence of Low-income Economic Families by Census Tract, Region of Peel, 1996



Source: Statistics Canada, 1996 Census.

Map 2.3—Proportion of the Population Not Speaking English or French by Census Tract, Region of Peel, 1996



Source: Statistics Canada, 1996 Census.

Infant Health— the First Year of Life

Introduction

Health in the first year of life is a vital precursor to health in later childhood and adulthood. This chapter includes information on several aspects of infant health, including birth weight, stillbirths, congenital anomalies, infant and perinatal deaths, and breastfeeding practices. Peel data are compared with Ontario data in each instance.

Low Birth Weight

Birth weight is an important predictor of maternal and infant health. Infants born with low birth weight (weight less than 2,500 grams) tend to have an increased risk of dying and experience more developmental and physical health problems than babies born with normal birth weight.[7,8] This finding is even more dramatic among pre-term low birth weight children.[7]

Maternal factors that may contribute to the risk of low birth weight babies include: having a lower socioeconomic status,[9,10] being of non-European origin,[11] being a teenage mother[10] and being single or in a common-law relationship.[10,12] Behaviours such as smoking and alcohol use during pregnancy have also been found to result in lower birth weight babies.[13]

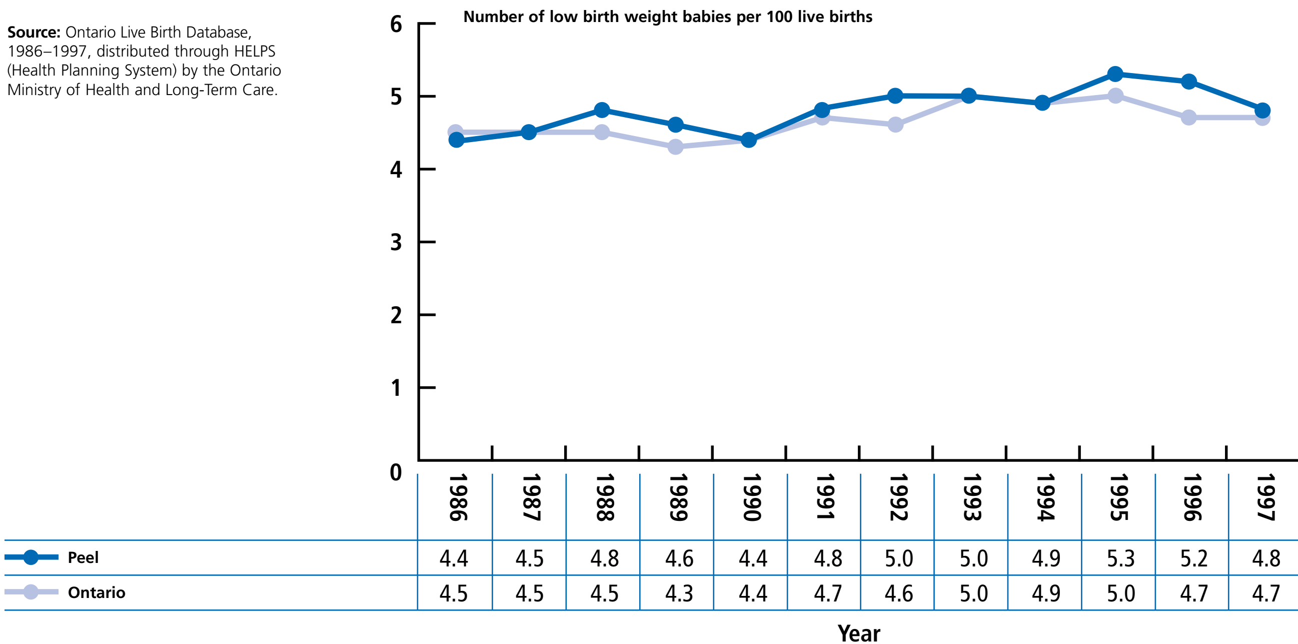
Results of several Canadian studies have shown that the increasing proportion of low birth weight babies is a function of an increase in the proportion of pre-term births.[14,15,16] In these studies, potential reasons for the increases seen in low birth weight and pre-term births were given. These included: increased registration of extremely early births (20–27 weeks), increased use of ultra-sound-based estimates of gestational age,[16] increased obstetrical intervention,[15] increased multiple birth rates,[15] and increased use of reproductive technologies such as in-vitro fertilization and hormone induction of pregnancy.[17] These increases in low birth weight and pre-term births could also be explained by decreased availability of obstetrical care providers, economic changes, or lack of access to comprehensive prenatal programs.[14]

Currently in Ontario, problems with recording the duration of pregnancies have been identified[18] and until such time as they are resolved, analyses of gestational age cannot be conducted. Babies born in multiple births (twins, triplets, etc.) have lower birth weights than singleton births. In Peel, the number of multiple births varies from year to year, influencing rates of low birth weight. For this reason, low birth weight rates in this report are reported separately for singleton and total births.

As shown in Figure 3.1, low birth weight rates* among singleton births increased gradually between 1986 and 1997 in both Peel and Ontario. Peel's singleton low birth weight rates were either the same or slightly higher than rates in Ontario. Although not shown in the figure, this finding was similar for total births.

Figure 3.1—Singleton Low Birth Weight, Region of Peel and Ontario, 1986–1997

Source: Ontario Live Birth Database, 1986–1997, distributed through HELPS (Health Planning System) by the Ontario Ministry of Health and Long-Term Care.



	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Peel	4.4	4.5	4.8	4.6	4.4	4.8	5.0	5.0	4.9	5.3	5.2	4.8
Ontario	4.5	4.5	4.5	4.3	4.4	4.7	4.6	5.0	4.9	5.0	4.7	4.7

An examination of low birth weight births by the kind of birth in Peel (single, twin, triplet, etc.) between 1986 and 1997 revealed that less than 5% of single births were born with a weight of less than 2,500 grams. Almost half of all twins were born with a weight of less than 2,500 grams. Approximately 90% of all triplets and 100% of all quadruplets were born with a weight less than 2,500 grams.

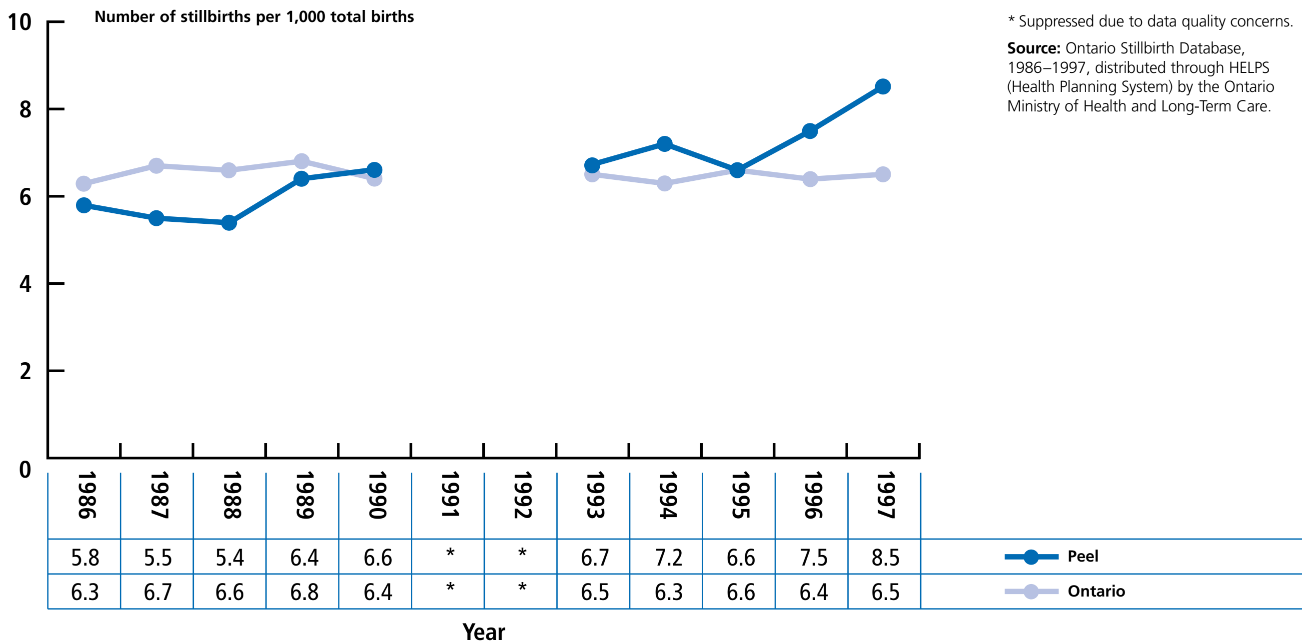
In Peel during 1997, most low birth weight infants were born to mothers aged 25–34 years; however, the highest rates of low birth weight were to mothers aged 15–19 years and 40 years and older, who had fewer births overall. This was true for both total live births and singleton live births.

* The low birth weight rate is defined as the number of live births under 2,500 grams per 100 live births.

Stillbirths

With the exception of 1991 and 1992 data, which were excluded from this analysis due to data quality concerns, stillbirth rates† in the Region of Peel gradually increased between 1986 and 1997.

Figure 3.2—Stillbirths,
Region of Peel and Ontario, 1986–1997



	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Peel	5.8	5.5	5.4	6.4	6.6	*	*	6.7	7.2	6.6	7.5	8.5
Ontario	6.3	6.7	6.6	6.8	6.4	*	*	6.5	6.3	6.6	6.4	6.5

* Suppressed due to data quality concerns.

Source: Ontario Stillbirth Database, 1986–1997, distributed through HELPS (Health Planning System) by the Ontario Ministry of Health and Long-Term Care.

The rate of 8.5 stillbirths per 1,000 total births in Peel in 1997 represented a 12-year high *(see Figure 3.2)*. Since Peel's rates of stillbirth might be expected to fluctuate more than rates in Ontario due to smaller numbers, the data for years following 1997 will need to be examined when available to determine whether a rising trend exists.

In Ontario, stillbirth rates remained stable at around 6.5 stillbirths per 1,000 total births.

† Stillbirth rates are defined as the number of stillbirths per 1,000 total births (stillbirths plus live births).

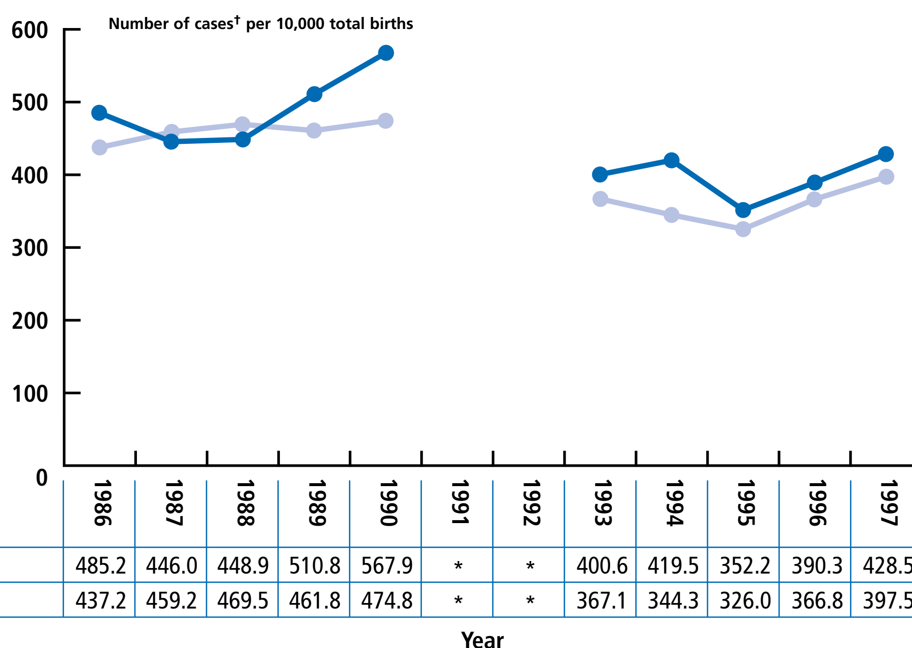
Congenital Anomalies

Congenital Anomalies

Data about congenital anomalies were collected from the Canadian Congenital Anomalies Surveillance System (CCASS). The CCASS obtains information on congenital anomalies detected at birth and up to one year of age from hospital records and through other provincial systems.[19] Limitations of the system include lack of reporting from some hospitals, lack of outpatient data, exclusion of data on affected infants admitted to hospital for other reasons, and exclusion of fetuses with anomalies that result in termination of the pregnancy.[19]

Rates of congenital anomalies in Peel tended to be slightly higher than rates for the province between 1993 and 1997 *(see Figure 3.3)*. Congenital anomaly rates in Peel and Ontario increased slightly between 1995 and 1997.

Figure 3.3—Congenital Anomalies, Region of Peel and Ontario, 1986–1997



	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Peel	485.2	446.0	448.9	510.8	567.9	*	*	400.6	419.5	352.2	390.3	428.5
Ontario	437.2	459.2	469.5	461.8	474.8	*	*	367.1	344.3	326.0	366.8	397.5

* Suppressed due to quality concerns regarding stillbirth data.

† Cases might include more than one defect.

Sources: Canadian Congenital Anomaly Surveillance System (CCASS), Laboratory Centre for Disease Control, Health Canada.

Ontario Live Birth and Stillbirth Databases 1986–1997, distributed through HELPS (Health Planning System) by the Ontario Ministry of Health and Long-Term Care.

Neural Tube Defects

Neural tube defects (NTD) are birth defects associated with malformation of the embryonic spinal cord and certain parts of the brain.[20] These defects include anencephalus, spina bifida and encephalocele. Spina bifida results when the lower portion of the neural tube fails to close properly, and may lead to paralysis and hydrocephalus. In anencephaly, the cranial vault and cerebral hemispheres are missing. Encephalocele is a condition in which a cranial defect results in protrusion of the brain outside the skull.[20]

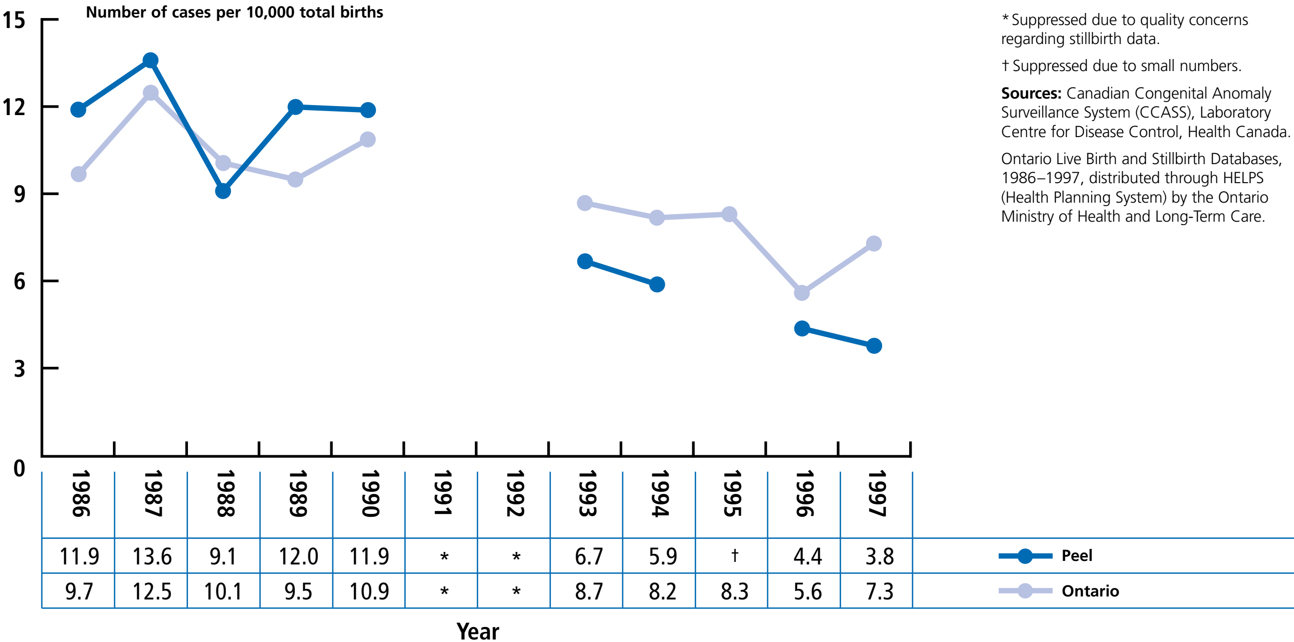
Health Canada estimates that approximately 400 infants are born each year in Canada with a neural tube defect (equal to a rate of approximately one per 1,000 total births).[21] Unfortunately, there are no data on the number of pregnancies terminated after screening detected a NTD or after the fetus spontaneously aborted as a result of a NTD.[20]

Closure of the neural tube is complete 26–28 days after conception, when many women do not even know they are pregnant.[22] Current recommendations therefore suggest that all women of child-bearing age consume a minimum of 0.6 mg of folic acid per day, from diet and vitamin supplements, to reduce the risk of having a baby with a NTD.[21]

In Canada, an analysis of birth defects found that between 1979–1981 and 1991–1993, rates of anencephalus, spina bifida and congenital hydrocephalus decreased by 53%, 28% and 21% respectively.[23] The availability and use of prenatal screening techniques and selective pregnancy terminations were cited as important contributors to the reported prevalence rates.

Data on encephalocele were unavailable for the Region of Peel for the period being examined, so for the purpose of this analysis, neural tube defects include only anencephalus and similar anomalies, and spina bifida for both Peel and Ontario comparisons. Data for 1991 and 1992 were omitted because of data quality concerns regarding stillbirths. As shown in Figure 3.4, rates of neural tube defects in both Peel and Ontario decreased between 1986 and 1996; however, the rate for Ontario rose slightly in 1997 to 7.3 neural tube defects per 10,000 births.

Figure 3.4—Neural Tube Defects, Region of Peel and Ontario, 1986–1997



Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Peel	11.9	13.6	9.1	12.0	11.9	*	*	6.7	5.9	†	4.4	3.8
Ontario	9.7	12.5	10.1	9.5	10.9	*	*	8.7	8.2	8.3	5.6	7.3

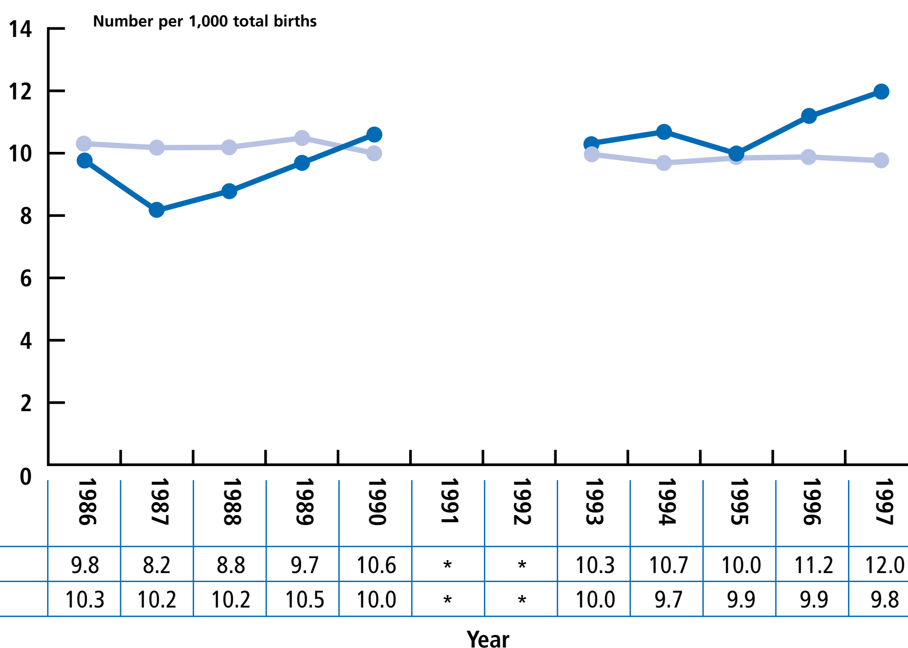
Perinatal and Infant Mortality

Perinatal Mortality

The perinatal period is defined as the time period between 20 weeks gestation or 500 grams in weight, and seven days after delivery. Rates of perinatal mortality include stillbirths and infant deaths up to seven days of age, expressed per 1,000 total births (live births plus stillbirths).

Between 1986 and 1989, Peel's perinatal mortality rates were below those of the province. Peel's rate started to rise in 1988. This upward trend continued, with slight fluctuations, right up to 1997 when the rate for Peel reached a 12-year high of 12.0 deaths per 1,000 births *(see Figure 3.5)*. Meanwhile, rates of perinatal mortality across the province were fairly stable, at an average of 10.0 deaths per 1,000 total births, over the same period.

Figure 3.5—Perinatal Mortality, Region of Peel and Ontario, 1986–1997



	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Peel	9.8	8.2	8.8	9.7	10.6	*	*	10.3	10.7	10.0	11.2	12.0
Ontario	10.3	10.2	10.2	10.5	10.0	*	*	10.0	9.7	9.9	9.9	9.8

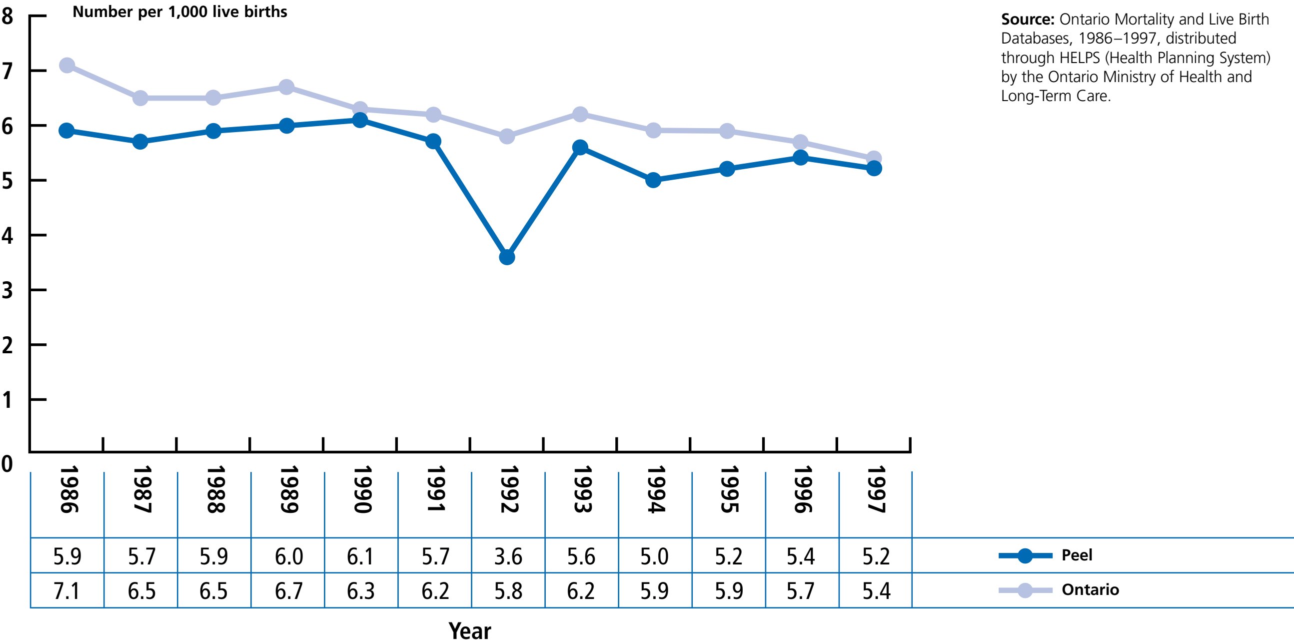
*Suppressed due to quality concerns regarding stillbirth data.

Source: Ontario Mortality Database, Ontario Live Birth Database and Stillbirth Databases, 1986–1997, distributed through HELPS (Health Planning System) by the Ontario Ministry of Health and Long-Term Care.

Infant Mortality

Infant mortality includes all deaths that occur to live-born infants and children under one year of age, and is expressed per 1,000 live births. Infant mortality rates gradually decreased in Ontario over the 12-year period between 1986 and 1997, from 7.1 to 5.4 deaths per 1,000 live births. In Peel, rates started at a lower point in 1986, at 5.9 deaths per 1,000 live births, and declined to their lowest point in 1992 (3.6 deaths per 1,000 live births). Rates have continued to fluctuate around 5.2 deaths per 1,000 live births since that time *(see Figure 3.6)*.

Figure 3.6—Infant Mortality, Region of Peel and Ontario, 1986–1997



Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Peel	5.9	5.7	5.9	6.0	6.1	5.7	3.6	5.6	5.0	5.2	5.4	5.2
Ontario	7.1	6.5	6.5	6.7	6.3	6.2	5.8	6.2	5.9	5.9	5.7	5.4

Source: Ontario Mortality and Live Birth Databases, 1986–1997, distributed through HELPS (Health Planning System) by the Ontario Ministry of Health and Long-Term Care.

In Canada in 1996, the infant mortality rate was 5.6 deaths per 1,000 live births.[8] While the decline in these rates over time has been substantial, international experience indicates there is still room for improvement. For example, Japan, Finland and Sweden boast rates of 3.8, 4.0 and 4.0 deaths per 1,000 live births respectively, although these rates might not be directly comparable due to differences in definitions.[8]

The decline in infant mortality and increase in perinatal mortality might be linked to the increased registration of very premature infants. Extremely premature infants—births that previously may have been registered as spontaneous abortions, if at all—are now surviving and being registered as births due to advances in obstetric and neonatal care.[24]

Selected causes of infant death are shown in Table 3.1. Peel data for the years 1986–1996 were combined to provide adequate numbers for analysis. The most frequent cause of infant death in both Peel and Ontario was related to conditions occurring in the perinatal period. These included maternal conditions that affect the fetus, complications of pregnancy and birth, and conditions related to birth trauma, birth weight, length of gestation and infection.

Table 3.1—Selected Causes of Death in Infants (Children Less than One Year), Region of Peel and Ontario, 1986–1996 Combined

Cause of Death	Region of Peel			Ontario		
	Number	Per Cent	AAR*	Number	Per Cent	AAR*
Perinatal Conditions	355	48.6	264.2	4,309	43.5	276.0
Congenital Anomalies	220	30.1	163.7	3,020	30.5	189.9
Ill-Defined Conditions	87	11.9	64.7	1,451	14.6	91.3
Injuries and Poisonings	18	2.5	13.4	228	2.3	14.3
Nervous System and Sense Organ Disorders	18	2.5	13.4	203	2.0	12.8
Respiratory Diseases	8	1.1	6.0	185	1.9	11.6
Infectious Diseases	5	0.7	3.7	118	1.2	7.4
All Others	19	2.6	14.1	391	3.9	24.6
Total	**730**	**100.0**	**543.3**	**9,905**	**100.0**	**622.9**

*Average annual rate per 100,000.

Source: Ontario Mortality Databases, 1986–1996, distributed through HELPS (Health Planning System) by the Ontario Ministry of Health and Long-Term Care.

In Peel, nearly half (49%) of all infant deaths were caused by perinatal conditions, while another 30% were caused by birth defects. Similar proportions were found for Ontario. The next largest category of cause of death among infants was ill-defined conditions, which includes Sudden Infant Death Syndrome (SIDS). This ill-defined conditions category accounted for 12% and 15% of infant deaths in Peel and Ontario, respectively.

As with infant mortality rates, Peel's average annual rates of infant death by selected causes were generally lower than the corresponding rates in Ontario.

Breastfeeding

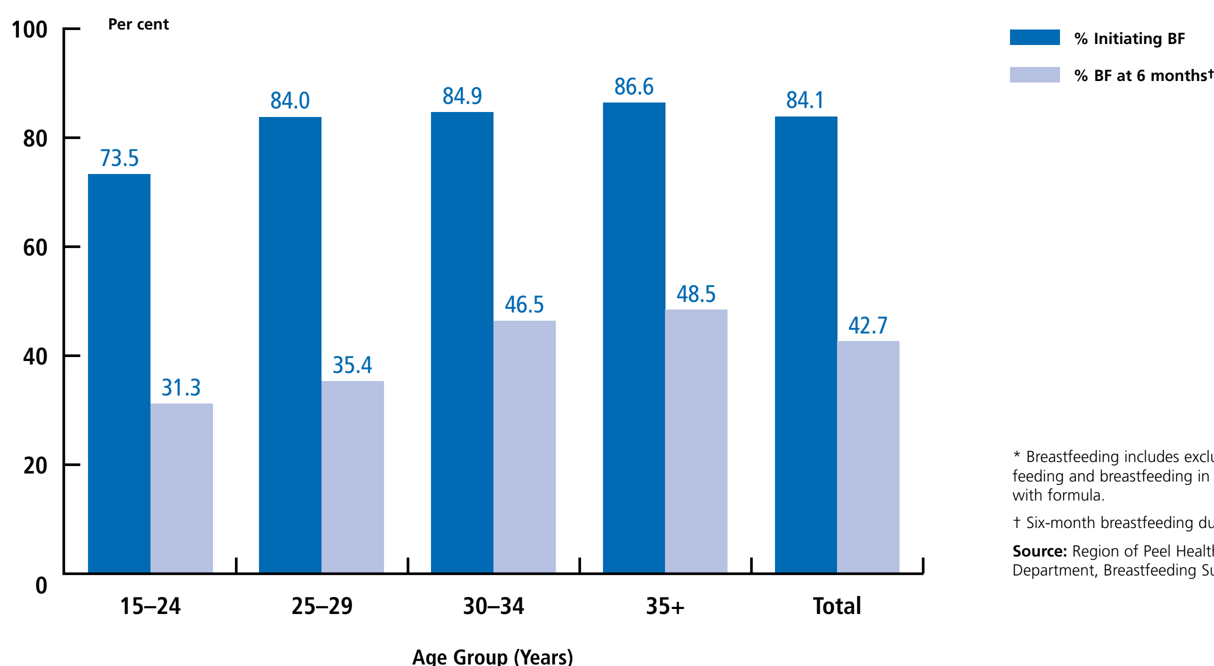
Breastfeeding of infants during the first six months of life is widely recognized to be the optimal method of feeding and provides benefits to both the mother and infant.[25] Breastfeeding reduces maternal anxiety, develops maternal self-esteem, promotes contraction of the uterus, improves bone remineralization and possibly reduces the risk of ovarian cancer.[26] Benefits to the infant include protection against gastrointestinal and respiratory infections, otitis media and the possible enhancement of cognitive function.[27]

In 2000, the Region of Peel Health Department completed a telephone survey with 541 mothers who had a live born infant in April, May or June of 1999. The primary purpose of the study was to determine the breastfeeding initiation and duration rates in Peel. Other factors, such as awareness of breastfeeding and other infant feeding supports and services in the community and reasons for cessation, were also examined. Details about the study methodology have been previously published.[25]

Eighty-four per cent of mothers who participated in the survey initially fed their babies breast milk at birth. Of these mothers, 79.5% breastfed exclusively and 4.6% fed their babies a combination of breast milk and formula.

The six month breastfeeding duration rate from this study was 42.7% (using all women in the study as the denominator). Breastfeeding initiation rates and duration rates varied by the age of the mother as shown in Figure 3.7.

Figure 3.7—Proportion of Mothers Initiating Breastfeeding* and Breastfeeding to Six Months by Age of Mother, Region of Peel, 2000



* Breastfeeding includes exclusive breast-feeding and breastfeeding in combination with formula.

† Six-month breastfeeding duration rate.

Source: Region of Peel Health Department, Breastfeeding Survey 2000.

In this study, the following factors were associated with breastfeeding:

- Age—younger mothers (aged 15–24 years) were less likely to initiate and continue breastfeeding than older mothers
- Education—higher levels of education were found to be associated with higher rates of breastfeeding duration and initiation

There were no associations between:

- Parity and breastfeeding initiation—comparing the initiation rates of breastfeeding of first-time mothers to mothers of more than one child
- Cultural factors (born in Canada) and breastfeeding initiation—comparing the initiation rates of breastfeeding between mothers born in Canada and those born outside of Canada

In the breastfeeding study, reasons for discontinuation of breastfeeding included:

- Concerns the baby was not getting enough to eat/breast milk supply (41%)
- Return to work (35%)
- Social reasons (15%)

Summary

Low Birth Weight

The rising rates of low birth weight (LBW) seen in Peel and Ontario are of concern. In 1997, the singleton LBW for Peel was 4.8 per 100 live births and 4.7 for Ontario. In Peel, the highest rates of singleton LBW were seen in mothers aged 15–19 years and 40 years and older.

Stillbirths

Stillbirth rates in Peel have increased slowly since 1986. The stillbirth rate of 8.5 stillbirths per 1,000 total births in Peel represents a 12-year high. Stillbirth rates for Ontario have remained relatively stable at around 6.5 stillbirths per 1,000 total births.

Congenital Anomalies

Rates of congenital anomalies in Peel and Ontario increased slightly between 1995 and 1997, and are higher in Peel than those in the province. In contrast, neural tube defects in Peel and Ontario have declined over time. By 1997, Peel had reached an all-time low of 3.8 neural tube defects per 10,000 births. With the exception of 1996, Ontario rates have remained relatively constant between 1993 and 1997.

Infant and Perinatal Mortality

In 1997, the perinatal mortality rate reached a high of 12.0 per 1,000 total births. Rates in Peel over the last few years (1994–1997) have been higher than Ontario. In contrast, infant mortality has declined in Ontario and declined less dramatically in Peel. By 1997, infant mortality rates in Peel were 5.2 per 1,000 live births compared to 5.4 per 1,000 live births in Ontario. In Peel, almost half of infant deaths (49%) were due to perinatal conditions, one-third (30%) to congenital anomalies and an additional 12% to ill-defined conditions such as SIDS.

Breastfeeding

Breastfeeding initiation rates of 84% were calculated using data from a Region of Peel survey conducted in 2000. The six-month duration rate from this same study was 43%.

Both breastfeeding initiation and duration varied by the age of the mother. Breastfeeding initiation rates increased with each increasing age group, as did the six-month duration rates.

The most common reasons for discontinuation of breastfeeding were concerns that the baby was not getting enough to eat and concerns about the breast milk supply (41%). Just over one-third (35%) of women discontinued because they returned to work and an additional 15% mentioned social reasons.

Injuries and Violence

Introduction

Injuries, both intentional and unintentional, are a significant health problem in children. Intentional or violent injuries refer to injuries that are self-inflicted, such as suicide or those purposely inflicted by another person, including assault and homicide. Information about suicide can be found in the chapter titled *Mental Health (see page 53)*. Unintentional injuries include injuries that occur as a result of motor vehicle collisions, falls, drownings, burns and poisonings.

Unintentional injuries are often referred to as accidents, implying that they occur at random and are not easily preventable. In fact, many are predictable, the risk factors are identifiable and interventions are available to prevent and minimize the impact of injuries.

This chapter provides an overview of hospitalizations and deaths for both intentional and unintentional injuries among Peel and Ontario children and youth aged 0–19 years. Many injuries are treated without hospitalization and are not included in the data which follow.

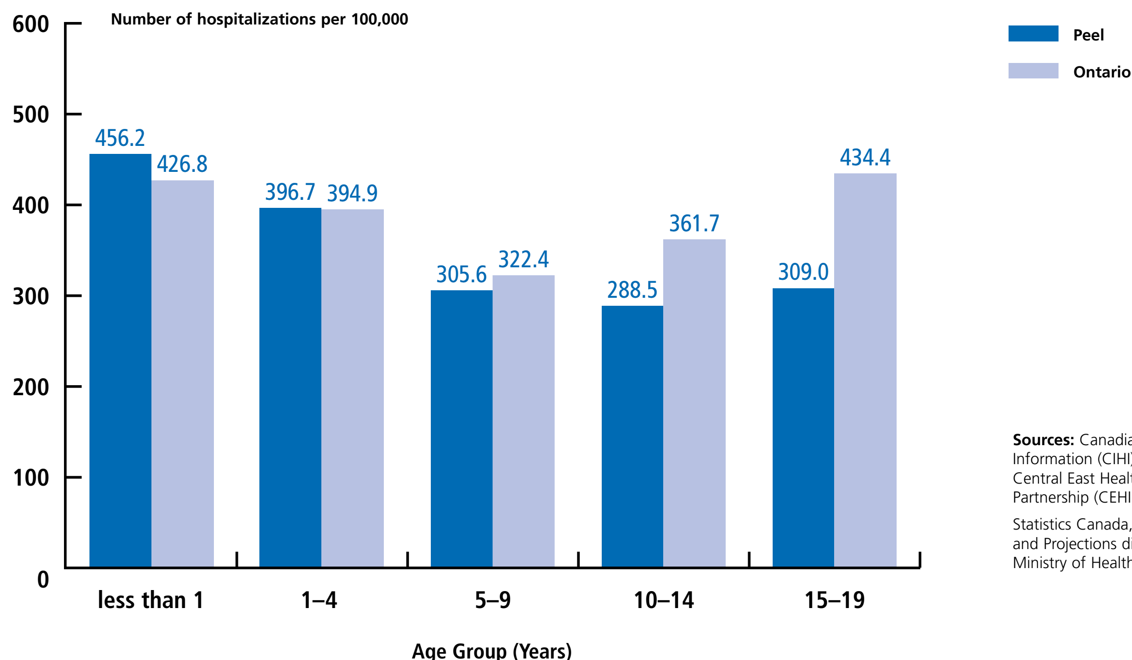
Unintentional Injuries

Hospitalization for Unintentional Injury

In 1998, there were 910 hospital admissions for unintentional injuries to children and youth aged 0–19 years in Peel. The unintentional injury rate in this age group was 329.0 per 100,000, which was lower than the Ontario rate of 378.8 per 100,000 *(see Table 4.1 on following page)*. Although not shown, the unintentional injury rate was lower in 1998 (329.0 per 100,000) than in 1995 (384.6 per 100,000); however, the rate fluctuated between the years 1995–1998.

Rates of hospitalization for unintentional injury were highest for Peel children aged less than one year and 1–4 years. This pattern was different for Ontario where injury rates were highest in the 15–19 year age group, followed by children aged less than one year. This difference is shown graphically in Figure 4.1 *(see following page)*.

Figure 4.1—Hospitalization for Unintentional Injury by Age Group, Region of Peel and Ontario, 1998



Sources: Canadian Institute for Health Information (CIHI) 1998, distributed by Central East Health Information Partnership (CEHIP).

Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

In Peel, unintentional injury rates overall were higher for males (399.7 per 100,000) than for females (254.3 per 100,000) in 1998. Injury rates for males in Peel were generally lower by age group than for males in Ontario. This trend was similar for females in Peel except for infants aged less than one year, whose rates were 41% higher than in Ontario *(see Table 4.1)*.

Table 4.1—Hospitalization for Unintentional Injury by Age Group and Sex, Region of Peel and Ontario, 1998

Age Group	Hospitalization per 100,000					
	Peel			Ontario		
	Males	Females	Total	Males	Females	Total
< 1 years	373.7	542.7	456.2	467.4	384.3	426.8
1–4 years	444.8	346.0	396.7	441.7	345.8	394.9
5–9 years	369.8	237.5	305.6	386.0	255.4	322.4
10–14 years	394.6	176.2	288.5	482.9	233.5	361.7
15–19 years	403.1	209.7	309.0	594.8	265.1	434.4
Total 0–19 years	**399.7**	**254.3**	**329.0**	**476.3**	**276.1**	**378.8**

Sources: Canadian Institute for Health Information (CIHI) 1998, distributed by Central East Health Information Partnership (CEHIP).

Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

The leading causes of unintentional injury-related hospitalization for Peel varied by age group as shown in Table 4.2. Accidental falls were the most common cause of hospitalization among children of all ages. Other leading causes of hospitalization included motor vehicle traffic collisions, pedal cycle traffic collisions and pedestrian traffic collisions.

There is substantial variation between Peel and Ontario for motor vehicle and pedal cycle traffic collisions in children aged 10–19 years each year between 1995 and 1998. It is not clear why this pattern exists.

Table 4.2—Leading Causes of Hospitalization for Unintentional Injury by Age Group, Region of Peel and Ontario, 1998

Age Group	Peel		Ontario	
	Number	Hospitalization per 100,000	Number	Hospitalization per 100,000
Less than 1 year	**62**	**456.2**	**589**	**426.8**
Accidental falls	34	250.1	276	200.0
1–4 Years	**233**	**396.7**	**2,368**	**394.9**
Accidental falls	88	149.8	960	160.1
Motor vehicle traffic collisions	15	25.5	126	21.0
Pedal cycle traffic collisions	7	11.9	46	7.7
5–9 Years	**220**	**305.6**	**2,544**	**322.4**
Accidental falls	114	158.3	1,315	166.7
Pedal cycle traffic collisions	24	33.3	224	28.4
Motor vehicle traffic collisions	23	31.9	254	32.2
Pedestrian traffic collisions	5	6.9	87	11.0
10–14 Years	**192**	**288.5**	**2,758**	**361.7**
Accidental falls	99	148.7	1,047	137.3
Pedal cycle traffic collisions	15	22.5	300	39.3
Motor vehicle traffic collisions	11	16.5	277	36.3
Pedestrian traffic collisions	7	10.5	92	12.1
15–19 Years	**203**	**309.0**	**3,224**	**434.4**
Accidental falls	49	74.6	722	97.3
Motor vehicle traffic collisions	45	68.5	820	110.5
Pedestrian traffic collisions	11	16.7	119	16.0

Sources: Canadian Institute for Health Information (CIHI) 1998, distributed by Central East Health Information Partnership (CEHIP).

Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

Unintentional Injury-related Deaths

In Peel, there were 200 unintentional injury-related deaths between 1986 and 1996 in children and youth aged 0–19 years. The average annual rate of unintentional injury death for this time period was 8.0 per 100,000 for Peel and 11.6 per 100,000 for Ontario. Injury death rates were highest in youth aged 15–19 years, followed by infants under the age of one year, as shown in Table 4.3 *(see following page)*. Although not shown, the average annual rate of unintentional injury-related death in Peel was almost twice as high in males (10.4 per 100,000) as in females (5.4 per 100,000).

Table 4.3—Unintentional Injury-related Deaths by Age Group, Region of Peel and Ontario, 1986–1996 Combined

Age Group	Peel		Ontario	
	Number	AAR*	Number	AAR*
< 1 year	13	9.7	155	9.7
1–4 years	33	6.3	600	9.5
5–9 years	22	3.5	465	6.0
10–14 years	21	3.5	462	6.2
15–19 years	111	18.0	1,916	24.4
Total 0–19 years	**200**	**8.0**	**3,598**	**11.6**

*Average annual rate per 100,000.

Sources: Ontario Mortality Database, 1986–1996, distributed by HELPS (Health Planning System) from the Ontario Ministry of Health and Long-Term Care.

Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

With the exception of children aged less than one year, mortality rates in Ontario were higher than in Peel across all age groups. This was likely due to motor vehicle traffic collisions among these age groups in Ontario, as shown in Table 4.4.

Table 4.4—Selected Leading Causes of Death from Unintentional Injury by Age Group, Region of Peel and Ontario, 1986–1996 Combined

Age Group and Cause of Unintentional Injury Death	Peel		Ontario	
	Number	AAR*	Number	AAR*
Less than 1 year (Total)	**13**	**9.7**	**155**	**9.7**
Suffocation/choking	7	5.2	73	4.6
1–4 years (total)	**33**	**6.3**	**600**	**9.5**
Motor vehicle traffic collisions	12	2.3	187	2.9
Suffocation/choking	6	1.1	64	1.0
Drowning	6	1.1	140	2.2
5–9 years (total)	**22**	**3.5**	**465**	**6.0**
Motor vehicle traffic collisions	11	1.8	260	3.4
Drowning	< 5	NR	64	0.8
Pedal cycle traffic collisions	< 5	NR	41	0.5
Suffocation/choking	< 5	NR	24	0.3
10–14 years (total)	**21**	**3.5**	**462**	**6.2**
Motor vehicle traffic collisions	11	1.8	261	3.5
Drowning	< 5	NR	56	0.7
15–19 years (total)	**111**	**18.0**	**1,916**	**24.4**
Motor vehicle traffic collisions	90	14.6	1,443	18.4
Pedestrian traffic collisions	13	2.1	123	1.6
Drowning	5	0.8	117	1.5

NR= Not released due to small numbers.

*Average annual rate per 100,000.

Sources: Ontario Mortality Database, 1986–1996, distributed by HELPS (Health Planning System) from the Ontario Ministry of Health and Long-Term Care.

Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

Intentional Injuries

Hospitalization for Intentional Injury

In 1998, there were 291 hospitalizations due to intentional injuries for persons 0–19 years of age in Peel, for a rate of 105.2 per 100,000 population. The rate for Ontario was 131.1 per 100,000.

Hospitalization rates for intentional injury for females in Peel were slightly higher (110.8 per 100,000) than for males (99.9 per 100,000) *(see Table 4.5)*. Peel rates of hospitalization were highest for youths aged 15–19 years, followed by those aged less than one year. These findings were consistent with rates in Ontario. Rates of hospitalization from intentional injuries have remained stable over time.

Table 4.5—Hospitalization for Intentional Injuries by Age Group and Sex, Region of Peel and Ontario, 1998

Age Group	Hospitalization per 100,000					
	Peel			Ontario		
	Males	Females	Total	Males	Females	Total
< 1 year	172.5	241.2	206.0	212.4	207.7	210.1
1–4 years	92.9	48.9	71.5	69.1	51.6	60.5
5–9 years	27.0	20.0	23.6	31.9	24.2	28.1
10–14 years	58.5	64.9	61.6	65.3	113.1	88.5
15–19 years	213.4	284.8	248.1	253.5	404.1	326.8
Total 0–19 years	**99.9**	**110.8**	**105.2**	**110.1**	**153.3**	**131.1**

Sources: Canadian Institute for Health Information (CIHI) 1998, distributed by Central East Health Information Partnership.

Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

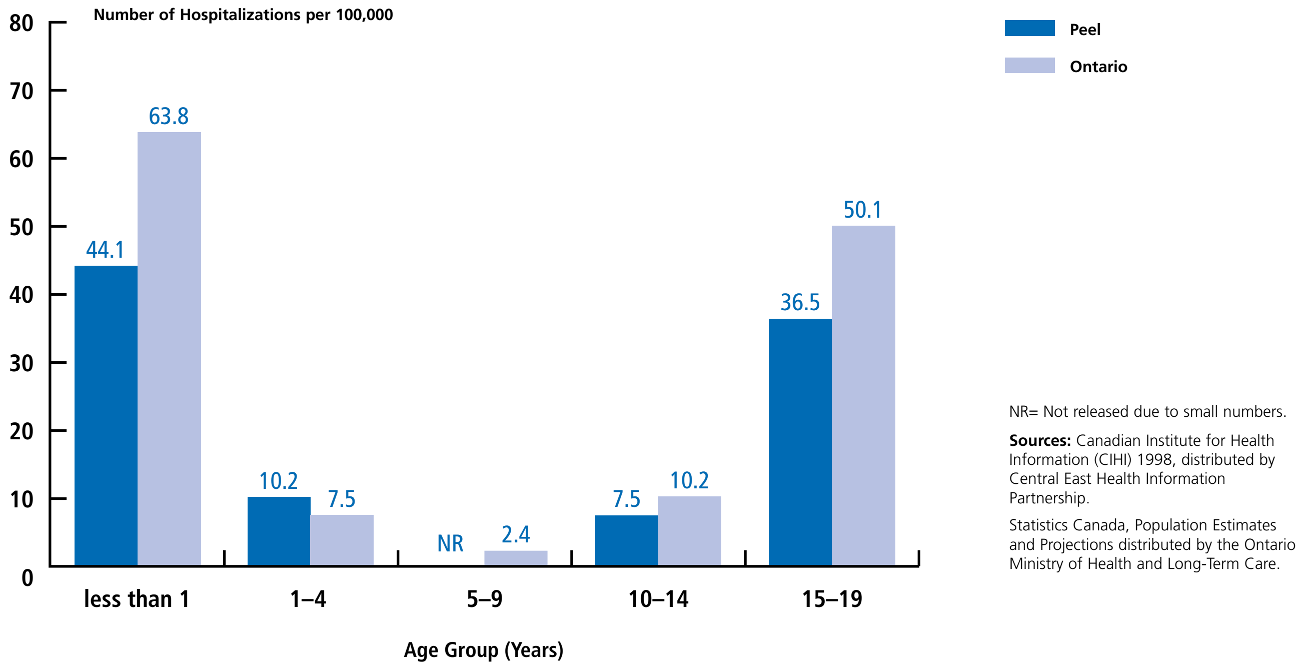
Although not shown by cause, injuries caused by “adverse effects of drugs in therapeutic use” were the leading cause of intentional injury hospitalization in Peel children aged nine years and younger. For children aged 10–19 years, suicide, assault and adverse effects of drugs were the main reasons for intentional injury hospitalization. More details about suicide can be found in the chapter titled *Mental Health* *(see page 53)*. Hospitalization due to assault is described in more detail below.

In Peel, hospitalization rates due to assault were highest in children aged less than one year, followed by those in the 15–19 year age group. This pattern was similar to that in Ontario *(see Figure 4.2 on following page)*.

In Canada in 1991, 60% of all sexual assaults and 20% of all physical assaults were reported to have occurred in children and youth under the age of 18 years.[28]

It is estimated that 52% of Canadian children who were assaulted in 1999 were assaulted by an acquaintance, while 24% were assaulted by family members, 19% by strangers and 5% by a person whose relationship to the child or youth was unknown.[28]

Figure 4.2—Hospitalization Due to Assault by Age Group, Region of Peel and Ontario, 1998



NR= Not released due to small numbers.

Sources: Canadian Institute for Health Information (CIHI) 1998, distributed by Central East Health Information Partnership.

Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

Mortality Due to Intentional Injuries

Between 1986 and 1996 in Peel, there were 57 deaths in children and youth aged 0–19 years due to intentional injuries for an average annual rate of 2.3 per 100,000 (data not shown due to small numbers). The mortality rate was highest for youths aged 15–19 years with a rate of 6.6 per 100,000. Over the eleven year period between 1986 and 1996, there were less than ten deaths in children aged less than one year to four years.

Summary

Unintentional Injury

In 1998, rates of unintentional injury-related hospital separations in children and youth aged 0–19 years in Peel were lower (329.0 per 100,000) than Ontario (378.8 per 100,000). Child and youth rates of unintentional injury were higher in males (399.7 per 100,000) compared to females (254.3 per 100,000) in Peel and higher in the younger age groups. In Peel, unintentional injury rates were highest among children aged 0–4 years.

Accidental falls were the leading cause of hospitalization in children and youth aged 0–19 years. Motor vehicle traffic collisions were the second leading cause of hospitalization for children aged one to four years, and the third leading cause for children aged five to nine and 10–14 years. Pedal cycle traffic collisions were the second leading cause of hospitalization for children aged five to nine and 10–14 years; they were the third leading cause for children aged one to four years. Motor vehicle traffic collisions and pedestrian traffic collisions were the second and third leading causes of hospitalization for youth aged 15–19 years.

For the period 1986–1996, average annual rates of unintentional injury-related deaths were lower in Peel (8.0 per 100,000) than in Ontario (11.6 per 100,000). In Peel, youths aged 15–19 years and infants under the age of one year had the highest average annual death rates (18.0 and 9.7 per 100,000 respectively). Average annual unintentional injury-related deaths for males (10.4 per 100,000) were almost twice that of females (5.4 per 100,000).

In Peel, the leading cause of unintentional injury-related death for infants aged less than one year was suffocation/choking, while the leading cause of unintentional injury-related death for children and youth aged one to 19 years was motor vehicle traffic collisions.

Intentional Injury

In 1998, rates of hospitalization in children and youth aged 0–19 years from intentional injuries were lower in Peel than the province at 105.2 and 131.1 per 100,000 respectively. Females in Peel had higher rates of hospitalization (110.8 per 100,000) than did males (99.9 per 100,000). Youth aged 15–19 years had the highest rates of hospitalization, followed by infants aged less than one year.

The leading causes of hospitalization in Peel were injuries caused by “adverse effects of drugs in therapeutic use”, suicide and assault.

In Peel, hospitalization due to assault was highest in children aged less than one year, followed by those aged 15–19 years. This was similar to Ontario.

Between 1986 and 1996, there were 57 deaths among children aged 0–19 years from intentional injuries in Peel. Mortality rates were highest for the 15–19 year age group. Other age groups had less than ten deaths recorded over this eleven-year period.

Communicable Disease

Introduction

This section of the report describes selected communicable diseases common among children aged 0–19 years. Information about childhood immunization coverage is also presented. Sexually transmitted diseases are dealt with in the chapter titled *Sexual Health* *(see page 71)*.

Under the *Health Protection and Promotion Act*, all health professionals, hospitals, laboratories and schools in Ontario are required to report specified communicable diseases to the local Medical Officer of Health. These reports form the basis of communicable disease surveillance and are recorded in the provincial Reportable Diseases Information System (RDIS). The data are used to monitor trends, identify outbreaks, assess the need for public health actions or programs, and evaluate the effectiveness of communicable disease control efforts. Most of the data in this section of the report are drawn from RDIS.

Childhood Immunization

Many important childhood diseases can be prevented by immunization. The level of immunization of the child population is an important determinant of the incidence of disease. Immunization against diphtheria, tetanus, polio, measles, mumps, rubella, pertussis, Haemophilus influenza type b, hepatitis B and influenza is provided to Ontario children free of charge.

The *Immunization of School Pupils Act* requires that all school-aged children be vaccinated against measles, mumps, rubella, diphtheria, tetanus and polio, or have a record of medical exemption or statement of conscience or religious belief on file with the local Medical Officer of Health.[29] Immunization records for school children are maintained by Peel Health on the provincial Immunization Records Information System (IRIS). Recently, all Peel children aged two to four years attending licensed day care centres were added to this system,[30,31] and their immunization status is now being monitored.

"Immunization coverage" is determined by comparing the number of children whose immunization status is known to be up-to-date for their age with the number of children enrolled in schools or day cares. The immunization schedule for Ontario specifies the number of required doses of each vaccine by the age of the child.[29,31]

While immunization programs have been extremely successful in reducing the incidence of vaccine preventable diseases and their effects, cases of these diseases are still reported in Ontario and Peel each year. Some of these cases occur because the population is not fully immunized, while others occur because vaccines are not 100% effective.

Immunization Coverage—Measles, Mumps, Rubella, Diphtheria, Pertussis, Tetanus and Polio

Table 5.1 presents data from IRIS for two combined vaccines: DPT-Polio (diphtheria, pertussis, tetanus and polio) and MMR (measles, mumps and rubella). For Peel, the proportion of the school-aged population known to be fully immunized ranged from 58–88%.

In the table, known coverage rates are lowest for children aged 15 years. Many of these children would have been due for a booster given at 14–16 years of age, and would not have been contacted by the health department until they had passed age 16.

Table 5.1—Proportion of Children Fully Immunized Against DPT-Polio and MMR by Birth Year and Child Age in 2000, Region of Peel

Birth Year	Age in 2000	Per Cent Fully Immunized
1983	17	77
1984	16	69
1985	15	58
1986	14	70
1987	13	78
1988	12	82
1989	11	78
1990	10	83
1991	9	75
1992	8	78
1993	7	82
1994	6	88
1995	5	83
1996	4	73

Source: Immunization Records Information System (IRIS), Region of Peel Health Department, 11/20/2001.

Immunization Coverage—Haemophilus influenza type B

Haemophilus influenza type B vaccine is recommended for children under the age of five years, but is not required in the Region of Peel unless the child is registered in a licensed day care centre. Table 5.2 presents coverage rates among children attending licensed day care centres in Peel. These rates ranged from 70–94%. These proportions were comparable to the 93% coverage among six-year-olds (i.e. those children born in 1992) reported for the province of Ontario in 1998.[31]

Table 5.2—Proportion of Children in Licensed Day Care Centres Immunized Against Haemophilus Influenza Type B, by Birth Year and Child Age in 2000, Region of Peel

Birth Year	Age in 2000	Per Cent Immunized
1991	9	93
1992	8	94
1993	7	91
1994	6	90
1995	5	70
1996	4	85
1997	3	93
1998	2	87

Source: Immunization Records Information System, Region of Peel Health Department, 11/20/2001.

Immunization Coverage—Hepatitis B

Hepatitis B vaccine is not required for school attendance but is recommended and offered to students in Grade 7 (age 12) to protect them prior to engaging in high-risk behaviours for hepatitis B, such as unprotected sex. In Peel, coverage rates have averaged around 95% since immunization was first offered in 1994, as shown in Table 5.3. In 2000/2001, Peel Health began immunizing on a two dose schedule, achieving a 98% coverage rate for children in Grade 7. In order to maintain optimal coverage rates, Peel Health's clinics offer eligible students opportunities to complete the hepatitis B immunization series.

Table 5.3—Proportion of Children in Grade 7 Immunized Against Hepatitis B by School Year, Region of Peel

School Year	Per Cent Immunized
1994/1995	89
1995/1996	94
1996/1997	96
1997/1998	95
1998/1999	95
1999/2000	97
2000/2001	98

Source: Immunization Records Information System, Region of Peel Health Department, 11/20/2001.

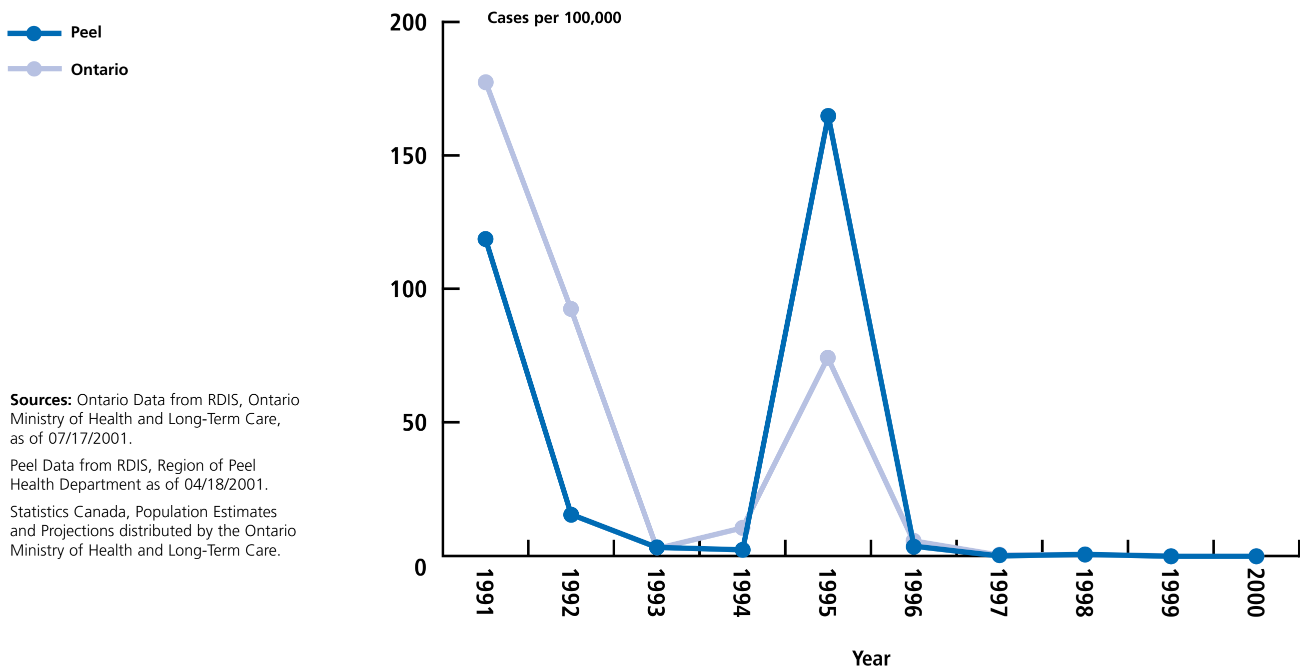
Incidence of Communicable Disease in Children

Measles

Measles is a highly infectious disease caused by a virus spread by cough and nasal droplets. Its symptoms include fever, sore throat, cough, runny nose, itchy eyes and a red rash that develops first on the face and then spreads to the rest of the body.[32] On rare occasions, severe complications, including pneumonia, ear infections, encephalitis (swelling of the brain) and subacute sclerosing panencephalitis (SSPE), may occur. These complications can lead to death.[33]

The incidence of measles has fallen dramatically in Peel and Ontario, as shown in Figure 5.1. Previously, a cyclical trend could be identified with outbreaks occurring every two or three years. The last such outbreak occurred in 1995, with an incidence rate of 74.2 cases per 100,000 population aged 0–19 years in Ontario and 164.8 cases per 100,000 in Peel.

Figure 5.1—Incidence of Measles, Children Aged 0–19 Years, Region of Peel and Ontario, 1991–2000



Sources: Ontario Data from RDIS, Ontario Ministry of Health and Long-Term Care, as of 07/17/2001.

Peel Data from RDIS, Region of Peel Health Department as of 04/18/2001.

Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

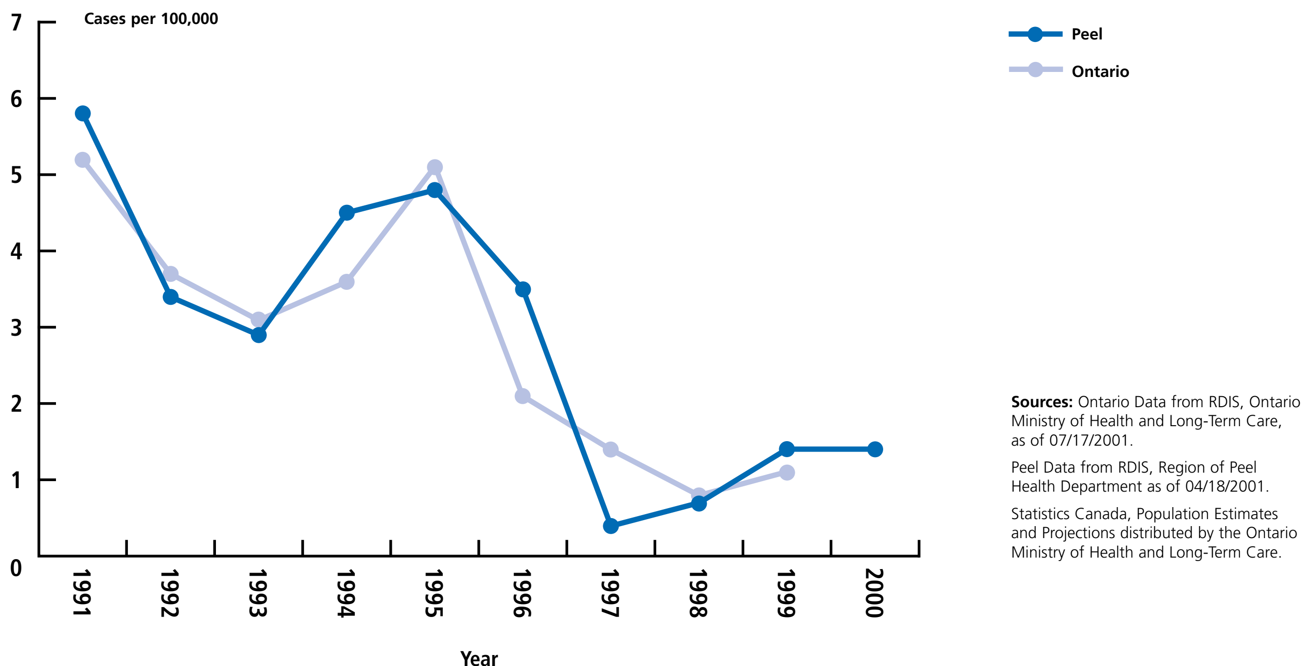
In 1995, the National Advisory Committee on Immunization (NACI) recommended a second dose of measles vaccine be given to all Canadian children.[34] In Ontario, a mass immunization campaign was conducted in schools in 1996. By 1997, there were only 22 cases of measles reported throughout the province (0.2 per 100,000) and since 1996, only two cases of measles have been reported in Peel, both in 1998.

Mumps

Mumps is a viral infection spread through saliva. It causes fever, parotitis (inflammation and enlargement of the salivary glands) and may cause encephalitis, orchitis (inflammation of the testicles) in post-pubertal males, oophoritis (inflammation of the ovaries) in females and occasionally causes infertility or deafness.[32]

Figure 5.2 shows the incidence of mumps for 0–19 year olds decreased in Peel between 1995 and 1997. Since that time, the incidence of mumps has increased slightly to 1.4 per 100,000 population aged 0–19 years in 2000. A similar trend was seen in Ontario.

Figure 5.2—Incidence of Mumps, Children Aged 0–19 Years, Region of Peel and Ontario, 1991–2000



Sources: Ontario Data from RDIS, Ontario Ministry of Health and Long-Term Care, as of 07/17/2001.

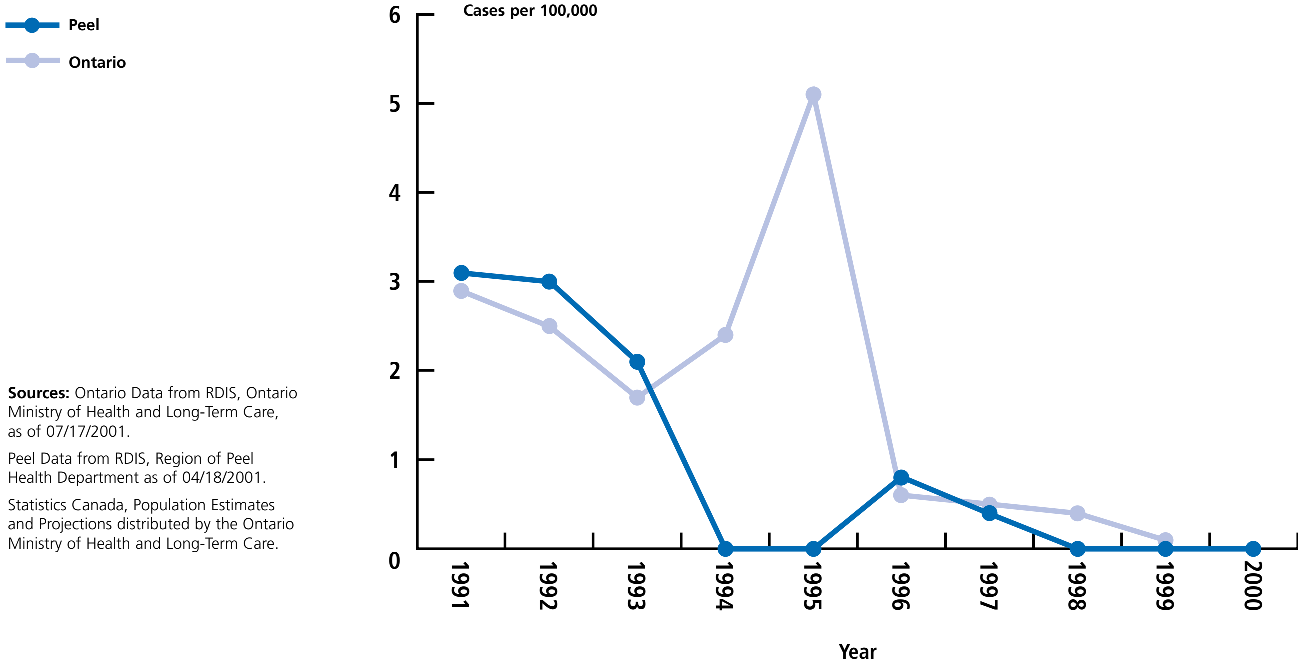
Peel Data from RDIS, Region of Peel Health Department as of 04/18/2001.

Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

Rubella

Rubella, which is also known as "German Measles", is caused by a virus spread by nasal droplets.[32] Its symptoms include fever, headache, itchy eyes, adenopathy (swelling of the lymph nodes) and rash. It can also cause joint and muscle pain or arthritis in adolescents and adults. On rare occasions, it can cause encephalopathy.[32] If a woman should contract a rubella infection during the first three months of pregnancy, the risk of death or severe malformation of the baby, called congenital rubella syndrome (CRS), is as high as 85%.[33,35]

Figure 5.3—Incidence of Rubella, Children Aged 0–19 Years, Region of Peel and Ontario, 1991–2000



Sources: Ontario Data from RDIS, Ontario Ministry of Health and Long-Term Care, as of 07/17/2001.

Peel Data from RDIS, Region of Peel Health Department as of 04/18/2001.

Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

The highest incidence of rubella in Peel children over the past ten years occurred in 1991, when there were seven cases (rate of 3.1 per 100,000 population) *(see Figure 5.3)*. Since that time, the incidence rate has decreased, with no cases reported since 1997. In Ontario, the rate was highest in 1995 at 5.1 per 100,000 population (151 cases) but dropped to 0.1 cases per 100,000 (three cases) in 1999.

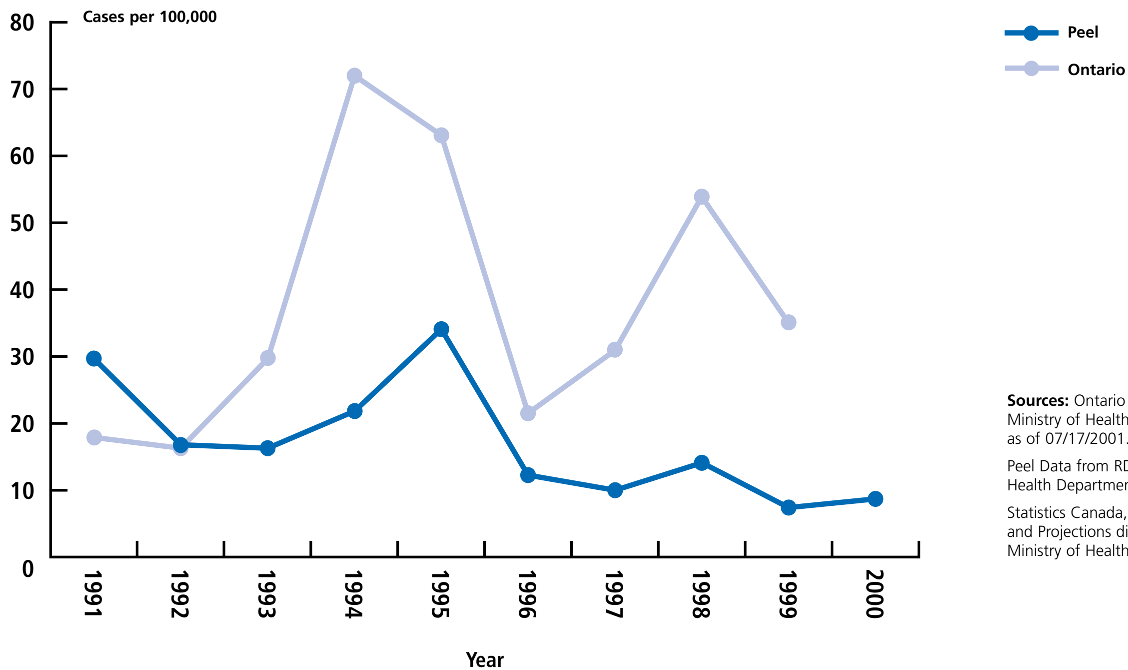
Congenital rubella syndrome (CRS) and congenital rubella infections are rare. In Ontario between 1991 and 1998, eight new cases of CRS were reported, one of which was in Peel in 1997.

Pertussis (Whooping Cough)

Pertussis is a bacterial infection spread by cough and nasal droplets.[32] It is highly communicable and potentially fatal, primarily affecting the upper respiratory tract by obstructing it with thick mucous secretions.[31,34] Symptoms include a runny nose and cough which can develop into the characteristic "whooping" cough.[32] Each year in Canada, between one and three infants die from pertussis and an equal number suffer severe brain damage.[32,33]

The incidence of pertussis in Peel children aged 0–19 years reached peak levels in 1991 (29.7 cases per 100,000) and in 1995 (34.1 cases per 100,000). Since that time, case rates have tapered off to 8.7 per 100,000 in 2000 *(see Figure 5.4 on following page)*. In Ontario, higher peaks occurred in 1994, 1995 and 1998.

Figure 5.4—Incidence of Pertussis, Children Aged 0–19 Years, Region of Peel and Ontario, 1991–2000



Sources: Ontario Data from RDIS, Ontario Ministry of Health and Long-Term Care, as of 07/17/2001.

Peel Data from RDIS, Region of Peel Health Department as of 04/18/2001.

Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

Haemophilus Influenza Type B (Hib)

Haemophilus influenza type b (Hib) is a bacterial infection spread by nasal droplets.[31,32] It can cause meningitis, epiglottitis (swelling of the epiglottis that can cause obstruction of the airway) and pneumonia, and it can be fatal.[32] A vaccine for infants, which became available in 1992, has led to a steady decrease in illness and death from Hib.[32]

The incidence of Hib infections in Peel children dropped from eight cases (3.5 per 100,000 aged 0–19 years) in 1991 to two cases in 1995. Only one case was reported in Peel in 2000. In Ontario, the rates decreased from 2.4 per 100,000 aged 0–19 years in 1991 (66 cases) to 0.1 per 100,000 in 1999 (four cases).

Meningococcal Meningitis

Meningococcal meningitis is an infection caused by the bacteria Neisseria meningitidis and is spread by direct contact with an infected person. Symptoms include fever, headache, nausea, vomiting, stiff neck and occasionally, a rash. This infection can be fatal if not treated immediately.[35]

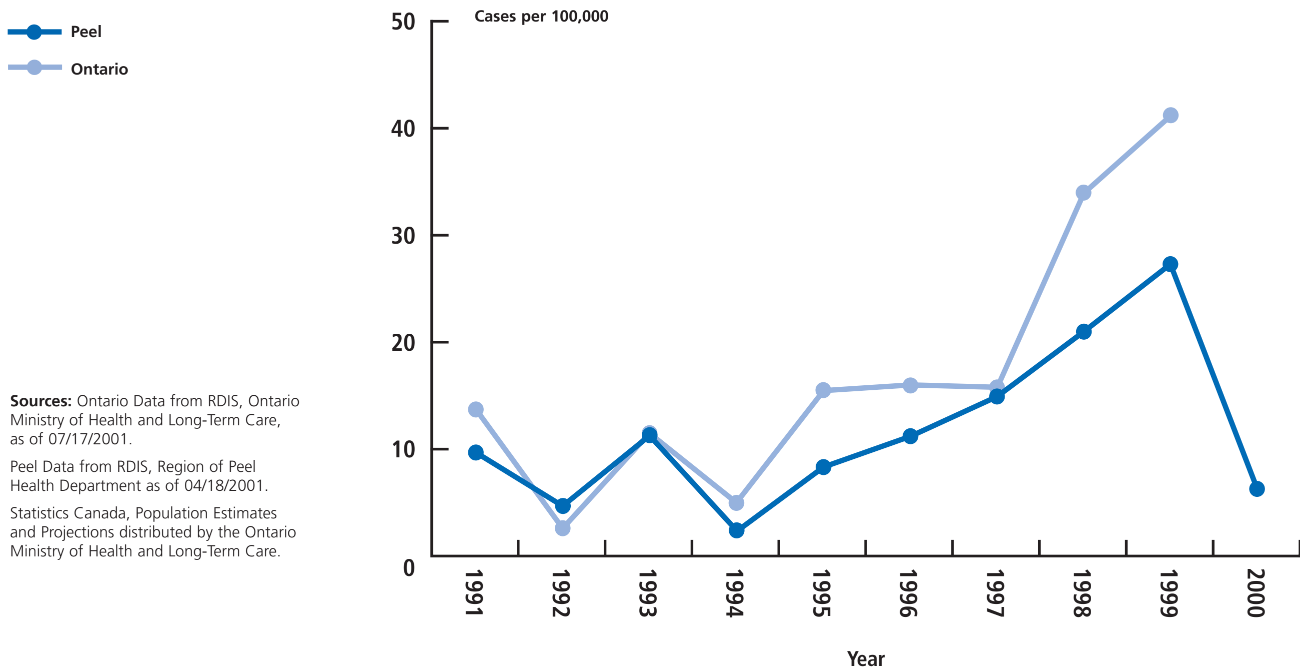
Between 1991 and 2000, there were between one and four cases of meningitis among children 0–19 years in Peel annually, with the exception of 1993 when there were nine cases. The disease was most prevalent in children aged 0–4 years (rate of 1.8 per 100,000 population) and in teens aged 15–19 years (rate of 1.6 per 100,000 population).

Influenza

Influenza is a viral infection of the respiratory tract transmitted in respiratory droplets caused by coughing or sneezing. Symptoms include fever, headache, sore muscles, sore throat and cough.[35] Influenza is a self-limited illness in healthy children, but can result in serious complications and death in those with chronic illnesses or weakened immune systems.

Figure 5.5 shows that between 1994 and 1999, the incidence of influenza per 100,000 children aged 0–19 years in Peel increased from 2.4 to 27.3, and then declined to 6.3 per 100,000 in 2000. In Ontario, the incidence rate of influenza in children also increased between 1991 and 1999.

Figure 5.5—Incidence of Influenza, Children Aged 0–19 Years, Region of Peel and Ontario, 1991–2000



Sources: Ontario Data from RDIS, Ontario Ministry of Health and Long-Term Care, as of 07/17/2001.

Peel Data from RDIS, Region of Peel Health Department as of 04/18/2001.

Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

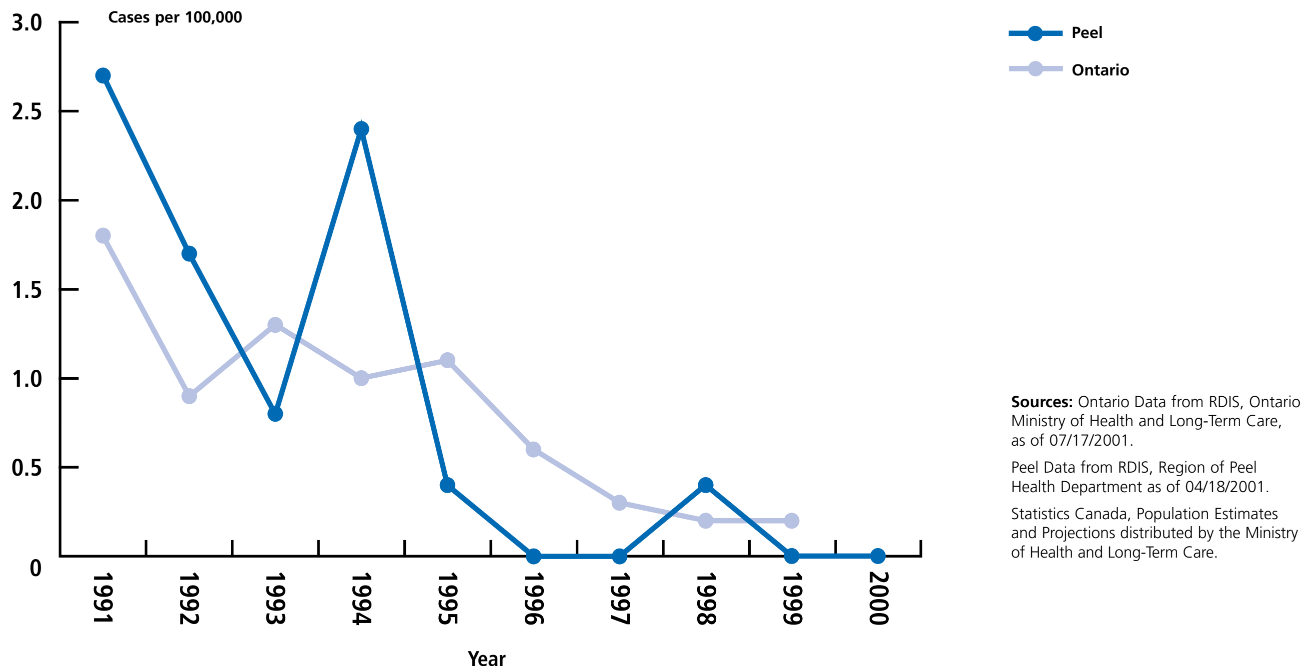
The 2000–2001 influenza season was a comparatively mild one in Canada, but it also was the first year of a universal influenza immunization program in Ontario. Peel Health held immunization clinics in secondary schools that year in order to increase vaccine coverage, which may have contributed to the decrease in influenza incidence.

Hepatitis B

Hepatitis B infections are caused by a virus that can be transmitted through sexual contact with an infected person or by sharing personal items, including toothbrushes and razors, as well as needles used for injecting drugs, with an infected person.[31,36] The infection causes inflammation of the liver, with symptoms of tiredness, loss of appetite and jaundice. Hepatitis B can lead to chronic liver disease, cirrhosis and cancer of the liver.[36]

In Peel, the incidence of hepatitis B in children aged 0–19 years has fallen since the introduction of the Grade 7 school immunization program in 1994. Since 1995, only two cases of hepatitis B in children aged 0–19 years have been reported. In Ontario, rates of hepatitis B have shown a steady decline, from 1.8 per 100,000 in 1991 to 0.2 per 100,000 in 1999, as shown in Figure 5.6.

Figure 5.6—Incidence of Hepatitis B, Children Aged 0–19 Years, Region of Peel and Ontario, 1991–2000



Sources: Ontario Data from RDIS, Ontario Ministry of Health and Long-Term Care, as of 07/17/2001.

Peel Data from RDIS, Region of Peel Health Department as of 04/18/2001.

Statistics Canada, Population Estimates and Projections distributed by the Ministry of Health and Long-Term Care.

Enteric Illnesses

Enteric illnesses are infections of the gastrointestinal tract and are common in children. They cause symptoms ranging from mild diarrhea, vomiting and stomach cramps to severe, life-threatening illnesses.

Enteric infections occur when the microorganism or its toxins enter the body via contaminated food or water.

Enteric illnesses represent the second most common group of reportable diseases after sexually transmitted diseases. Most reported cases are based on laboratory diagnosis; however, many milder cases are not diagnosed or reported. The true number of infections in the community is likely much greater than the number reported.

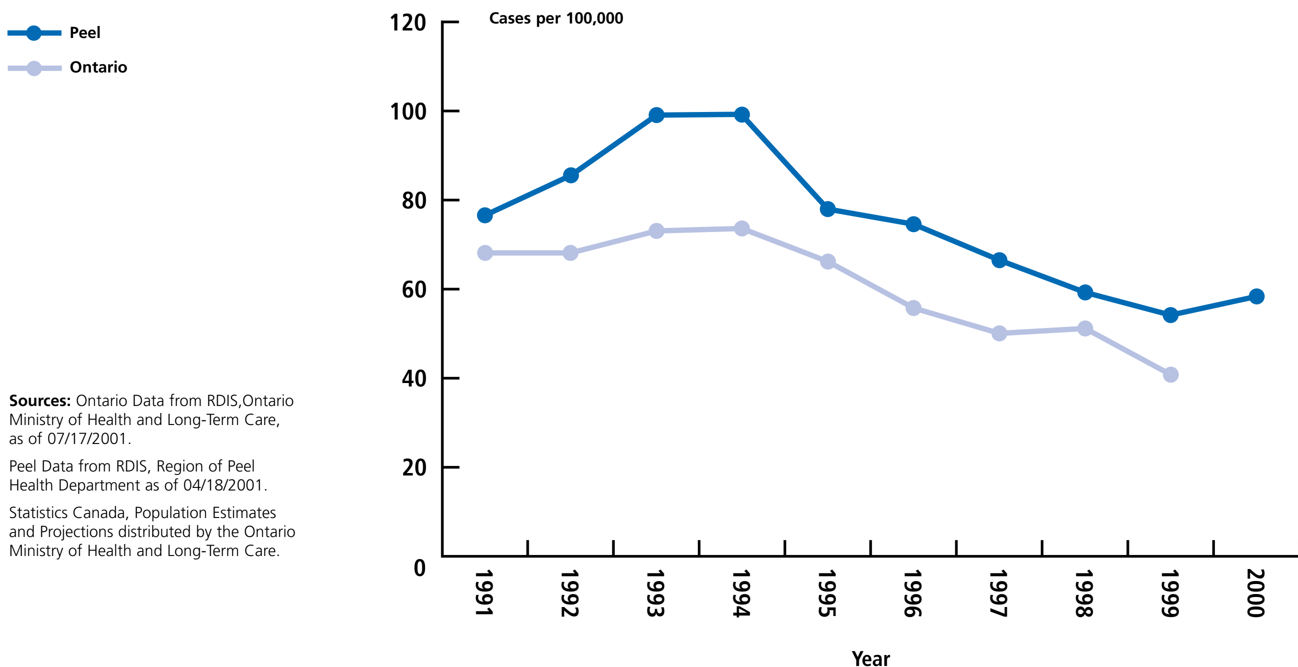
This report presents data on three of the most common enteric infections in childhood: *campylobacteriosis, salmonellosis* and *giardiasis*.

Campylobacteriosis

Campylobacter is the most common bacterial cause of enteric illness.[35,37] Infection may result from the ingestion of raw milk, undercooked chicken or pork, or contaminated water. Infection may also be contracted from close contact with infected pets, farm animals or other infected persons.

Campylobacter infection was the most commonly reported enteric illness in Peel and Ontario. In Peel, the incidence of Campylobacter infection increased between 1991 and 1994, but has declined since. In 2000 in Peel, there were 168 cases reported in children aged 0–19 years for an incidence rate of 58.4 per 100,000. A similar trend was also seen in Ontario, but the incidence of reported Campylobacter in Peel was generally higher than that for Ontario *(see Figure 5.7)*.

Figure 5.7—Incidence of Campylobacteriosis, Children Aged 0–19 Years, Region of Peel and Ontario, 1991–2000



Sources: Ontario Data from RDIS,Ontario Ministry of Health and Long-Term Care, as of 07/17/2001.

Peel Data from RDIS, Region of Peel Health Department as of 04/18/2001.

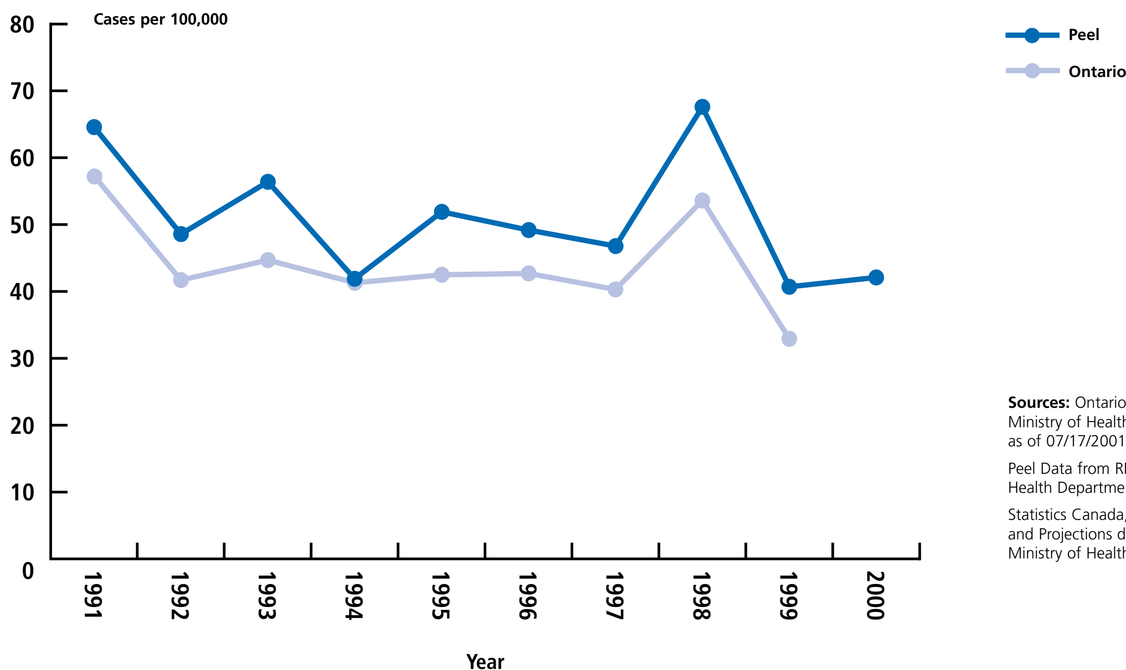
Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

Salmonellosis

Salmonellosis is a bacterial enteric infection caused by a group of bacteria called Salmonella. Salmonella is typically transmitted to people through contaminated food, such as raw or undercooked eggs, poultry or meat, or through the faeces of an infected person or animal. The illness is usually short-lived, lasting from a few days to a week, and most persons recover without treatment.[38,39]

Salmonellosis is the second most commonly reported enteric infection after campylobacteriosis. In 2000, 121 cases of salmonellosis were reported in Peel children aged 0–19 years for an incidence rate of 42.1 per 100,000 *(see Figure 5.8)*. In Peel and Ontario, incidence rates have fluctuated between 1991 and 2000, but were slightly higher in Peel across all years. A province-wide outbreak of Salmonella enteritidis, attributed to a commercially manufactured food product, may have contributed to the large increase in both cases and rates of salmonellosis in Peel and Ontario in 1998.[40]

Figure 5.8—Incidence of Salmonellosis, Children Aged 0–19 Years, Region of Peel and Ontario, 1991–2000



Sources: Ontario Data from RDIS, Ontario Ministry of Health and Long-Term Care, as of 07/17/2001.

Peel Data from RDIS, Region of Peel Health Department as of 04/18/2001.

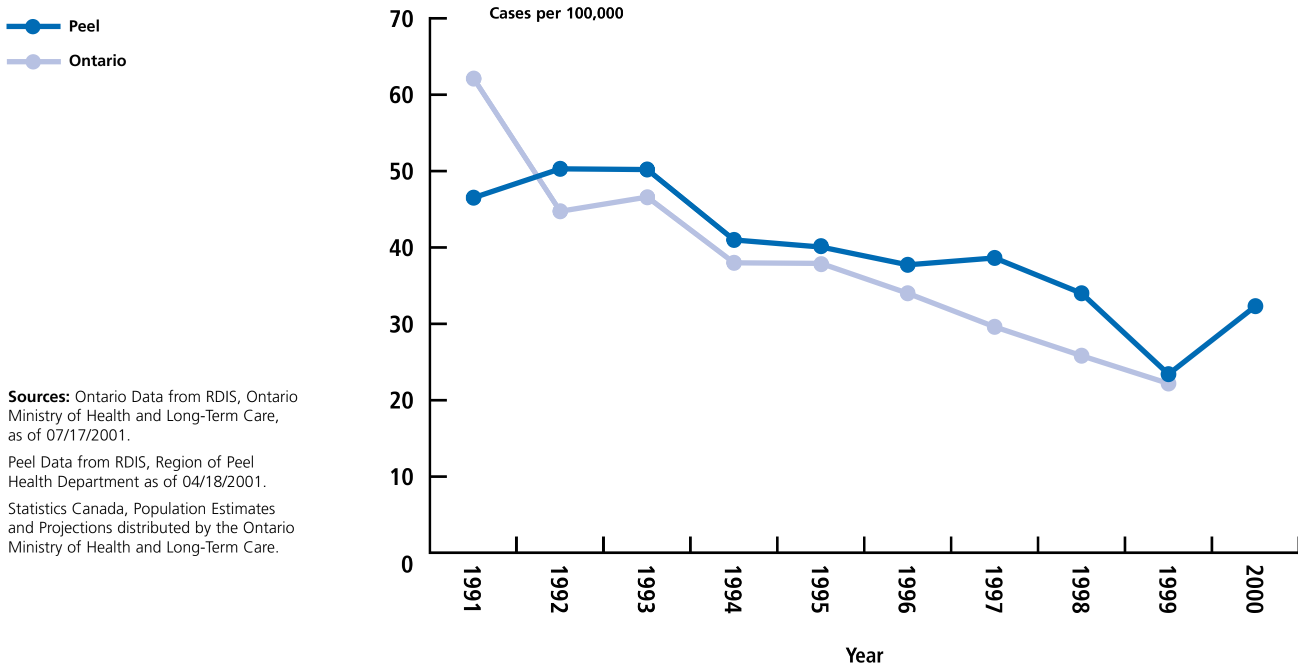
Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

Giardiasis

Giardiasis is an illness caused by a microscopic parasite called Giardia lamblia. It is usually spread from person-to-person by hand-to-mouth transfer of the organism's cysts from the faeces of an infected individual.[35,41] Giardiasis is the third most commonly reported enteric infection and is common in day nurseries.

In 2000, 93 cases of giardiasis were reported in Peel children aged 0–19 years *(see Figure 5.9)*. The incidence of giardiasis declined slightly between 1991 and 1999 in Peel and in Ontario.

Figure 5.9—Incidence of Giardiasis, Children Aged 0–19 Years, Region of Peel and Ontario, 1991–2000



Sources: Ontario Data from RDIS, Ontario Ministry of Health and Long-Term Care, as of 07/17/2001.

Peel Data from RDIS, Region of Peel Health Department as of 04/18/2001.

Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

Summary

Immunization coverage rates among Peel children were fairly high. On average, 72% of children aged four to 17 were immunized for DPT-Polio and MMR, 87% of children aged two to nine for Haemophilus influenza type B, and 95% of Grade 7 students (since 1994) for hepatitis B.

The incidence of vaccine-preventable diseases, such as measles, mumps, rubella, pertussis and Haemophilus influenza type B, have declined substantially between 1991 and 2000 in Peel. Higher immunization coverage will be needed to ensure continued prevention of these diseases in the future.

While their incidence declined between 1991 and 2000, enteric infections, such as campylobacteriosis, salmonellosis and giardiasis, continue to be very common childhood diseases.

Mental Health

Introduction

The Canadian Mental Health Association defines mental health as "the capacity of each and all of us to feel, think and act in ways that enhance our ability to enjoy life and deal with the challenges we face".[42] Children's mental health is closely related to physical health, the ability to achieve success in school and the ability to demonstrate responsible behaviour toward others.[43] Factors affecting children's mental health are multifaceted and involve characteristics of the child, family, community and society as a whole.[44]

To measure the broad concept of mental health, investigators often examine the prevalence of mental illness because this information is more readily available. These illnesses include a wide range of disorders that have psychological or behavioural symptoms, and reduce a person's capacity to cope.[45] Mental illness may be caused by genetic, physical, chemical, biological, psychological, social or cultural factors.[46] The *1989 Ontario Child Health Study* found that 18% of children aged 1–17 years suffered from a diagnosable psychiatric illness[43], while the 1996 *National Longitudinal Survey on Children and Youth* (NLSCY) found that 25% of children (41% of those in female-led, single parent families) showed at least one significant developmental problem.[47]

Data sources for Peel and Ontario in this chapter include hospitalization and mortality data.

Hospitalization for Mental Illness

In Peel and Ontario, "neurotic disorders, personality disorders and other non-psychotic mental disorders" is the most common category of mental disorder for which children are hospitalized. This category of disorders includes such conditions as anxiety, obsessive compulsive disorder, affective personality disorder, paranoid personality disorder, sexual deviations and disorders, alcohol dependence syndrome and drug dependence. "Other psychoses" is the second most common category of mental illness for which children are hospitalized. "Other psychoses" includes conditions such as schizophrenic psychoses, affective psychoses (eg. depression) and paranoid states.

Table 6.1 shows hospitalization for selected mental disorders in Peel and Ontario children aged 10–14 years and 15–19 years.

Table 6.1—Hospitalization for Selected Mental Disorders by Age Group, Region of Peel and Ontario, 1998

Mental Disorder	Peel				Ontario			
	10–14 years		15–19 years		10–14 years		15–19 years	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
Mental Disorders (Total)	**81**	**121.7**	**281**	**427.8**	**1404**	**184.1**	**4,652**	**626.8**
Organic Psychotic Conditions	0	----	10	15.2	7	0.9	111	15.0
Other Psychoses	17	25.5	114	173.5	233	30.6	1,744	235.0
Neurotic Disorders, Personality Disorders and Other Non-psychotic Mental Disorders	64	96.2	155	236.0	1164	152.7	2,791	376.1

* Rate per 100,000

Source: Hospital Separations, Canadian Institute for Health Information (CIHI) 1998, distributed by the Central East Health Information Partnership (CEHIP).

Statistics Canada, Population Estimates and Projections, distributed by the Ontario Ministry of Health and Long-Term Care.

In 1998, hospitalization rates for mental disorders were generally higher in Ontario than in Peel for children and youth aged 10–14 and 15–19 years. Hospitalization rates were also higher in the 15–19 year age group compared to those aged 10–14 years in both Peel and Ontario.

Table 6.2 shows the numbers and rates of hospitalization for mental disorders by age group and sex for Peel in 1998. Hospitalization rates were generally higher in females than in males.

Table 6.2—Hospitalization for Selected Mental Disorders by Age Group and Sex, Region of Peel, 1998

Mental Disorder	Age 10–14 years				Age 15–19 years			
	Males		Females		Males		Females	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
Organic Psychotic Conditions	0	---	0	---	<5	NR	7	21.9
Other Psychoses	6	17.5	11	34.0	44	130.4	70	219.1
Neurotic Disorders, Personality Disorders and Other Non-psychotic Mental Disorders	36	105.2	28	86.6	57	168.9	98	306.7

NR= Not released due to small numbers.

* Rate per 100,000

Source: Hospital Separations, Canadian Institute for Health Information (CIHI) 1998, distributed by the Central East Health Information Partnership (CEHIP).

Statistics Canada, Population Estimates and Projections, distributed by the Ontario Ministry of Health and Long-Term Care.

Suicide

Suicide and attempted suicide are commonly, but not always, associated with mental illness. This section describes suicide among Peel's children and youth from two sources: hospitalization data on suicide attempts and death data. These data probably underestimate the true extent of suicide since it may be misclassified as an accident or poisoning.[48] In Canada, the range of under-reporting was estimated to be 12% for males and 18% for females.[49]

In 1998, there were 137 suicide attempts made by children aged 10–19 years in Peel. Hospitalization rates for attempted suicide were almost two times higher among females than males and approximately five times higher among 15–19 year olds than 10–14 year olds in both Peel and Ontario. Hospitalization rates for suicide attempts were lower for females in Peel than for Ontario, while rates for males were similar in both jurisdictions, as shown in Table 6.3.

Table 6.3—Hospitalization for Attempted Suicide, by Age Group and Sex, Region of Peel and Ontario, 1998

Age Group	Peel					
	Male		Female		Total	
	Number	Rate*	Number	Rate*	Number	Rate*
10–14 years	7	20.5	15	46.4	22	33.1
15–19 years	41	121.5	74	231.6	115	175.1

Age Group	Ontario					
	Male		Female		Total	
	Number	Rate*	Number	Rate*	Number	Rate*
10–14 years	63	16.1	262	70.7	325	42.6
15–19 years	438	114.9	1075	297.8	1513	203.9

* Rate per 100,000

Sources: Canadian Institute for Health Information (CIHI) 1998 distributed by the Central East Health Information Partnership (CEHIP).

Statistics Canada, Population Estimates and Projections, distributed by the Ontario Ministry of Health and Long-Term Care.

Mortality data for the years 1986–1996 for youth aged 15–19 in Peel were combined to increase the precision of the rates. These data were examined for the 15–19 year age group, as suicide is an uncommon event for children under the age of 15 years. Between 1986 and 1996, there were 36 suicide deaths among teenagers aged 15–19 years in Peel. Suicide rates for this age group were lower in Peel (5.8 per 100,000) than in Ontario (7.6 per 100,000).

Rates of suicide death were higher among males than females in both Peel and Ontario. The average annual suicide death rate for males aged 15–19 in Peel (9.8 suicides per 100,000 population) was similar to Ontario males of the same age (11.8 per 100,000). Average annual suicide death rates for females were significantly lower, at 1.7 suicides per 100,000 in Peel and 3.1 per 100,000 in Ontario *(see Table 6.4 on following page)*. The difference in rates between males and females is likely a function of the choice of method of suicide, with males choosing more lethal methods that are not as likely to result in successful medical intervention.[48]

* Average annual rate per 100,000

Sources: Ontario Mortality Database 1986–1996, distributed through HELPS (Health Planning System) by the Ontario Ministry of Health and Long-Term Care.

Statistics Canada, Population Estimates and Projections, distributed by the Ontario Ministry of Health and Long-Term Care.

Table 6.4—Suicide Deaths among Youth Aged 15–19 Years by Sex, Region of Peel and Ontario, 1986–1996 Combined

	Male		Female		Total	
	Number	AAR*	Number	AAR*	Number	AAR*
Peel	31	9.8	5	1.7	36	5.8
Ontario	477	11.8	118	3.1	595	7.6

Summary

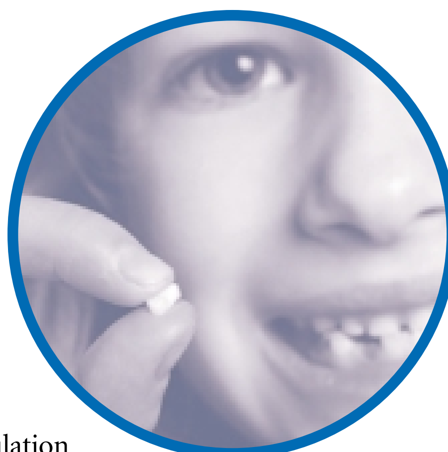
Hospitalization rates for mental disorders for children aged 10–14 and 15–19 years in Peel were generally lower than in Ontario. Hospitalization rates were higher for children aged 15–19 years than those aged 10–14 years in both Peel and Ontario. In Peel and Ontario, the most common category of mental disorder for which children are hospitalized was "neurotic disorders, personality disorders and other non-psychotic mental disorders".

In Peel in 1998, there were 137 suicide attempts made by youth aged 10–19. Suicide attempts were higher in females than males, and in youth aged 15–19 years. This finding was consistent with Ontario data. Rates of suicide attempts were similar in Peel and Ontario males and were lower among Peel than Ontario females.

In Peel, 36 youths aged 15–19 years committed suicide between 1986 and 1996 (for an average annual rate of 5.8 per 100,000). This rate was lower than Ontario (7.6 per 100,000). Average annual suicide rates in Peel were higher for males (9.8 per 100,000) than females (1.7 per 100,000).

Dental Health

Introduction



Two indicators are commonly used to describe dental health in a population. The first indicator is the mean number of Decayed, Missing or Filled Teeth (DMFT) for secondary teeth, and decayed, extracted or filled teeth (deft) for primary teeth. This is a measure of the extent or intensity of dental caries in the population.

The second indicator is the proportion of the population who has ever experienced dental caries. This report also uses other indicators, including the proportion of children with untreated decay, with bleeding gums, and in need of urgent dental treatment, to describe the dental health of the children in Peel. The term "urgent treatment needs" is defined as those conditions causing pain and/or infection, or which if left untreated, would lead to pain and infection within a month.

Dental Indices Survey

In 1998, the dental health of children in Peel was assessed using the provincial Dental Indices Survey (DIS) protocol. A total of 5,669 Peel children aged four, five, six, 11 and 12 years were part of the DIS in 1998 *(see Table 7.1)*.

Table 7.1—Dental Health Indicators for Children Aged Four, Five, Six, 11 and 12 Years, Region of Peel, 1998

Dental Health Indicators	4 years	5 years	6 years	11 years	12 years	Total
Mean DMFT/deft*	0.6%	1.4%	1.3%	1.8%	1.8%	1.4%
% of children who ever had caries	21%	35%	29%	53%	60%	37%
% of children with untreated decay	17%	27%	19%	23%	22%	25%
% of children with bleeding gums	16%	11%	11%	30%	37%	15%
% of children requiring urgent treatment	6%	16%	17%	12%	16%	15%
Total Number of Children Surveyed	390	3,944	282	748	305	5,699

* The DMFT/deft is defined as the number of missing, decayed or filled tooth surfaces to the number of tooth surfaces examined, and is expressed as a per cent.

Source: Region of Peel Health Department, Dental Indices Survey, 1998.

The mean overall DMFT/deft was 1.4. Among five year olds, the mean DMFT/deft was 1.4, which was slightly higher than the provincial average of 1.2 observed in 1994. Thirty-five per cent of Peel five year olds in 1998 had ever had a cavity compared with 30% of Ontario five year olds in 1994. The proportion of children who had ever had a cavity was even higher for 11 and 12 year olds (53% and 60% respectively).

Among all children surveyed, 37% were found to have ever had dental caries. The prevalence of the disease was highly skewed in that most of the children in Peel who had experienced dental caries also had untreated decay (25%). At the same time, 15% of Peel's children had urgent dental treatment needs and a similar proportion had bleeding gums. Currently, there are no other data available to describe other historical trends or comparisons.

Summary

In 1998, 37% of Peel's children aged four, five, six, 11 and 12 years had ever had a cavity, 25% had untreated decay, 15% had bleeding gums and 15% required urgent dental treatment. In 1994, 30% of children across Ontario had ever had a cavity.

Tobacco, Alcohol and Drug Use

Introduction

The use of tobacco and illicit drugs, and the inappropriate use of alcohol are responsible for a significant proportion of illness and premature death in Canada. Most of this morbidity and mortality occurs in adults—however, the use of tobacco, alcohol and illicit drugs usually begins in childhood and youth.

Smoking is by far the greatest cause of premature death in Canada with over half of expected deaths attributable to smoking.[50] Tobacco use causes many health problems for smokers and non-smokers, including lung cancer, heart disease, chronic lung disease, stroke and other cancers, including cancer of the mouth, bladder and pancreas.

Alcohol consumption has been associated with both positive and negative health effects.[51] While consuming moderate levels of alcohol has been associated with a lower risk of heart disease, there is no clear indication as to the amount that produces this apparent protective benefit.[52] There are far more negative effects associated with drinking, especially heavy drinking. These include increased risk of breast cancer,[53] hypertension,[54] liver disease, injuries and death as a result of drinking and driving,[55] as well as the harmful effects on the fetus and child of alcohol use during pregnancy.[56,57,58]

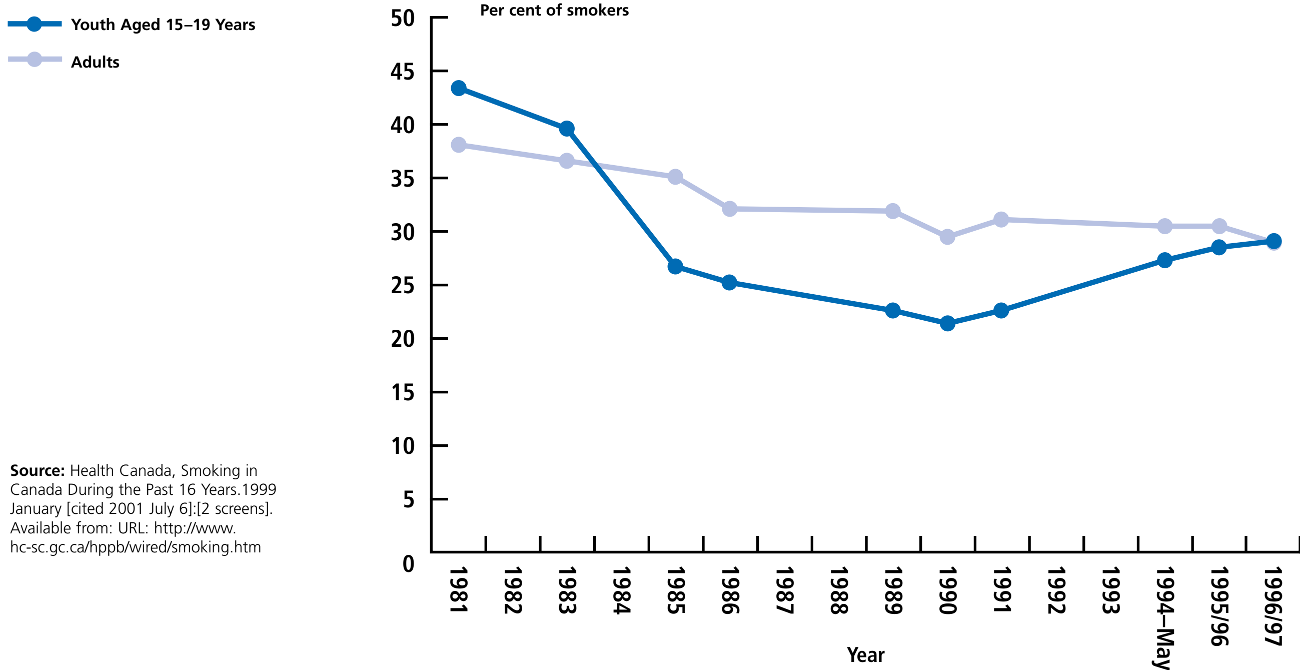
Illicit drug use is associated with a wide variety of health risks; these risks depend on the drug used and the intensity of use. Chronic heavy use of illicit drugs such as heroin and cocaine is associated with poor health and increased risk of death, social disruption and criminal behaviour to finance drug addiction. The sharing of needles for the injection of illicit drugs may result in the transmission of blood-borne diseases such as hepatitis B and C, and human immunodeficiency virus (HIV).

This section describes the use of tobacco, alcohol and illicit drugs by children and youth using data from Peel and Ontario.

Tobacco Use

According to the Ontario Health Survey (OHS) 1996/97, 17% of Ontario adolescents aged 12–19 years (19% male and 16% female) reported they were current smokers (daily or occasional smokers).

Figure 8.1—Tobacco Smoking Trends, Adults and Youth, Canada, 1981–1997



Source: Health Canada, Smoking in Canada During the Past 16 Years.1999 January [cited 2001 July 6]:[2 screens]. Available from: URL: http://www. hc-sc.gc.ca/hppb/wired/smoking.htm

In Canada, smoking among males and females aged 15–19 years declined until 1990 *(see Figure 8.1)*. However, during the 1990s there was an increase in smoking rates for both sexes. Although not shown in the graph, smoking rates were slightly higher for female than male youths.[59]

Environmental Tobacco Smoke

According to the Ontario Health Survey (OHS) 1996/97, 76% of non-smoking Peel residents aged 12–19 lived in smoke-free homes, as is shown in Table 8.1. This proportion was higher than the 71% of Ontario residents of the same age who lived in smoke-free homes. The 24% of Peel youth exposed to environmental tobacco smoke in their homes was similar to the rate of smoking in the adult population for Peel.

Table 8.1—Proportion of Non-smoking Residents Aged 12–19 Years Living in Smoke-free Homes by Sex, Region of Peel and Ontario, 1996/97

	Per Cent of Non-Smokers Living in Smoke-Free Homes		
	Male	Female	Both
Region of Peel	81	71	76
Ontario	71	71	71

Source: Ontario Health Survey (OHS) 1996/97 Data File, distributed by the Ontario Ministry of Health and Long-Term Care.

Smoking and Pregnancy

According to the Ontario Health Survey (OHS) 1996/97, one-third (33%) of Ontario women aged 15–49 who had given birth in the two years prior to the survey and who were either current or former smokers reported they had smoked during their last pregnancy. Overall, 15% of all children born during this period were exposed to second-hand smoke in-utero, regardless of their mother's smoking status.

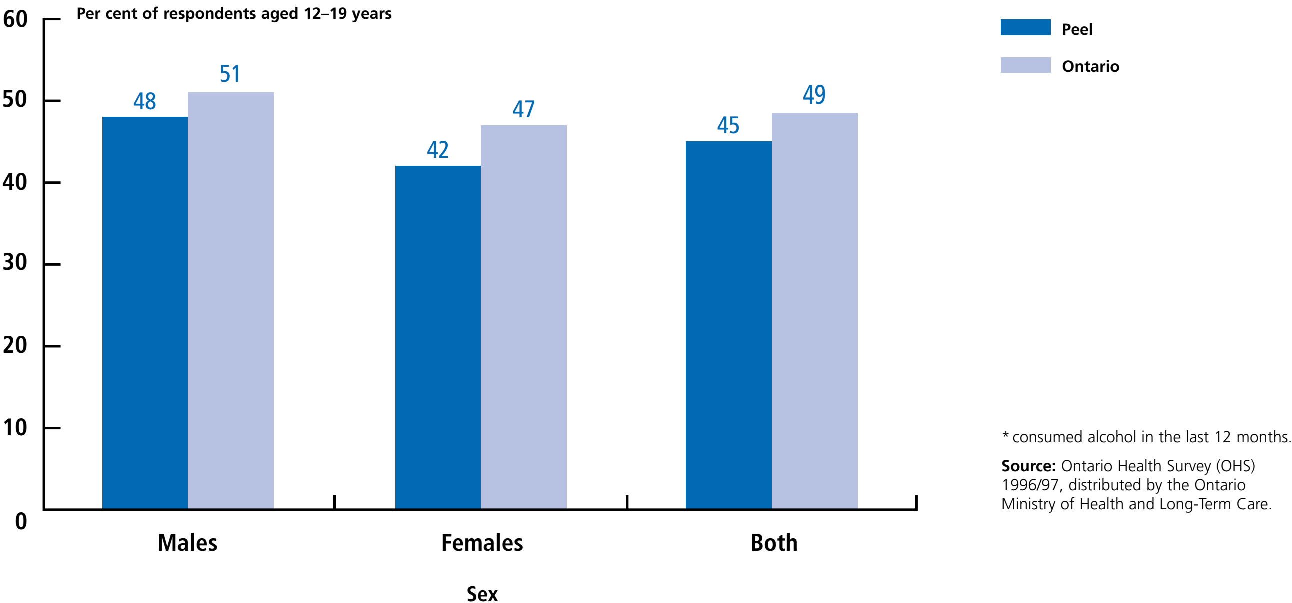
Alcohol Use

In the Ontario Health Survey (OHS) 1996/97, 45% of Peel residents and 49% of Ontario residents aged 12–19 years reported having consumed alcohol in the past 12 months. This group is defined as "current" drinkers.

Figure 8.2 shows the proportion of current drinkers aged 12–19 by sex for Peel and Ontario. In both Peel and Ontario, a higher proportion of males reported consuming alcohol within the past 12 months than females. A slightly higher proportion of males and females aged 12–19 years in Ontario reported being a current drinker than males and females in Peel.

Three types of drinking behaviour associated with increased health risks were examined in the Ontario Health Survey (OHS) 1996/97 for 12–19 year olds. They are heavy drinking, binge drinking and driving while impaired. Survey numbers for this age group for Peel were too small to be reliable, therefore Ontario data are presented.

Figure 8.2—Proportion of Current* Drinkers by Sex, Children Aged 12–19 Years, Region of Peel and Ontario, 1996/97



* consumed alcohol in the last 12 months.

Source: Ontario Health Survey (OHS) 1996/97, distributed by the Ontario Ministry of Health and Long-Term Care.

Four per cent of current drinkers aged 12–19 years in Ontario reported they consumed 15 drinks or more per week. Individuals in this category are classified as "heavy" drinkers. The proportion of heavy drinkers was higher for males than females.

Twenty per cent of current drinkers aged 12–19 in Ontario reported they drank five or more drinks on one occasion, once or more per month. This group is defined as "binge" drinkers. The rate of binge drinking was higher for males (24%) than for females (15%).

In Ontario, 7% of drivers aged 16–19 years reported driving while under the influence of alcohol once or more in the past 12 months. Drinking and driving was more common among males than females.

In the provincial health status report, *Report on the Health Status of the Residents of Ontario*, overall rates of drinking and driving were also found to be associated with higher levels of income, but no differences were seen among levels of education.[60] Among Ontario drivers with high incomes, 7% reported drinking and driving compared to 4% of drivers with low incomes.

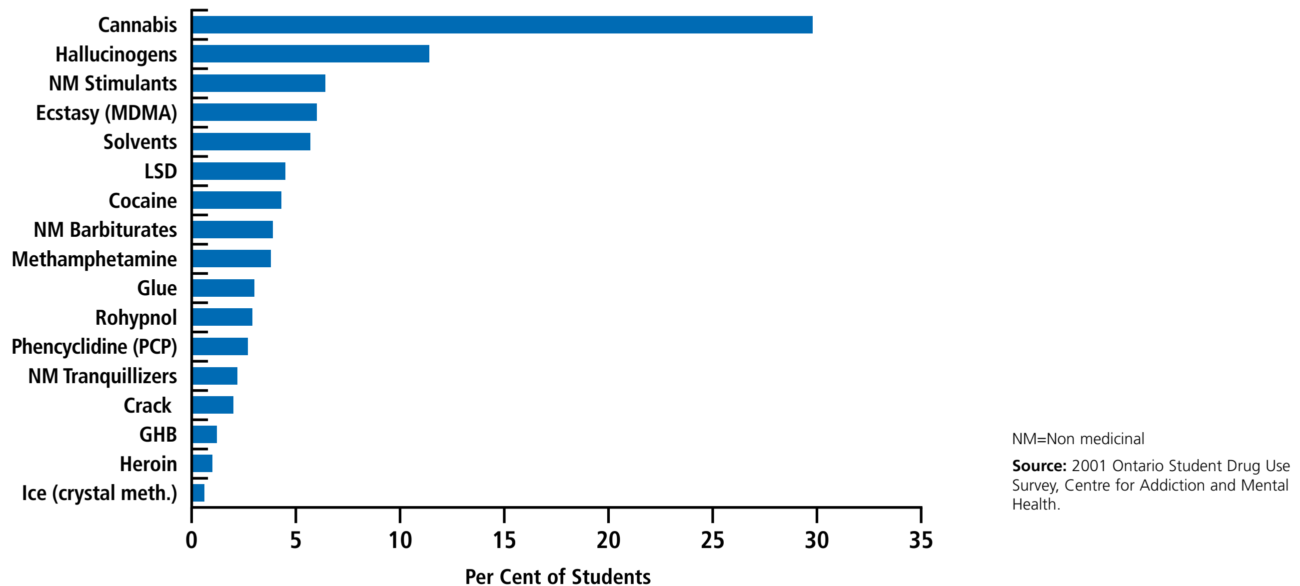
Drug Use

Data presented in this section were collected by the Centre for Addiction and Mental Health, through the *Ontario Student Drug Use Survey*, in 2001[61]. This survey has followed trends in drug use since 1977. Data for 2001 were based on all grades (7 to 12 and OAC—Ontario Academic Credit). Trend data which compares 2001 to previous years has been readjusted to reflect those grades (7, 9, 11 and 13) included in prior surveys. Sufficient data specific to Peel were not available through this survey, so data for Ontario as a whole are presented.

In 2001, one-third of Ontario students reported using any illicit drug (excluding inhalants and prescription drugs) in the past year. A slightly higher proportion of males reported using any illicit drug (35.6%) than females (31.4%). Drug use increased by grade between grades 7 and 11. The highest reported use was for students in Grade 11 (48.7%). Illicit drug use increased from 15.7% in 1991 to 33.2% in 2001.

Figure 8.3 *(see following page)* shows the type of drug used in the past 12 months.

Figure 8.3—Drug Use in the Past 12 Months among Students in Grades 7–13, Ontario, 2001



NM=Non medicinal

Source: 2001 Ontario Student Drug Use Survey, Centre for Addiction and Mental Health.

Cannabis

Cannabis was the most popular illicit drug used by students in 2001 (29.8%). A higher proportion of male students (33.7%) reported using cannabis than female students (26.0%). Use was highest for Grade 11 students at 45.7%. Between 1993 and 1999, cannabis use increased from 13% to 29%.

Hallucinogens other than LSD (Lysergic acid diethylamide) and PCP (Phencyclidine)

Use of hallucinogens, other than LSD (Lysergic acid diethylamide) and PCP (Phencyclidine), increased from 3% to 14% between 1993 and 1999. In 2001, 11.4% of students (13.2% males and 9.6% females) reported using hallucinogens, such as Mescalin and Psilocybin, in the past year. Reported use was highest for those in Grade 12 (20.5%).

Non-Medicinal Stimulants

In 2001, 6.4% of students reported using non-medicinal stimulants, such as "uppers" or diet pills, in the past year. Reported use was higher for females (8.0%) than for males (4.8%). Use of non-medicinal stimulants increased with grade between grades 7 and 12, and was highest for those in grades 11 and 12 (10.3% and 10.4% respectively).

Ecstasy (MDMA)

Six per cent of students reported using Ecstasy in 2001. Use was slightly higher for males (6.7%) than females (5.4%). Students in grades 11 and 12 had the highest reported use (9.5% and 9.2% respectively). Ecstasy use has increased over time from 0.6% in 1993 to 6.0% in 2001.

Solvents

In 2001, 5.7% of students reported using solvents such as nail polish remover, paint thinner or gasoline. Use was slightly higher in females (6.0%) than males (5.5%). Solvent use was highest for those in grades 7 and 8 (9.7% and 9.3% respectively), and decreased by grade level.

LSD (Lysergic acid diethylamide)

In 2001, approximately 4.5% of students reported using LSD (Lysergic acid diethylamide) in the past year. Use was higher for males (6.0%) than for females (3.1%). Students in grades 10 and 12 had the highest reported use (8.0% and 7.8% respectively).

Cocaine

In 2001, approximately 4% of students reported using cocaine in the past year. Reported use was slightly higher for males (4.6%) than for females (3.9%), and was highest for those in Grade 11 (7.0%). Cocaine use increased between 1993 and 1999 (from 1.5% to 4.1%), and declined slightly in 2001.

Non-Medicinal Barbiturates

In 2001, 3.9% of students reported using non-medicinal barbiturates. Use was slightly higher for females (4.3%) than for males (3.5%). The reported use of non-medicinal barbiturates was highest for those in Grade 10 (8.1%).

Methamphetamine ("Speed")

In 2001, 3.8% of students (5.0% males and 2.7% females) reported using Methamphetamine ("speed"). Methamphetamine use was highest for those in Grade 10 (6.8%).

Glue

Glue use, such as airplane glue, contact cement, etc., was reported by 3.0% of students in 2001. A slightly higher proportion of males (3.7%) reported sniffing glue than females (2.3%). Use was highest for students in Grade 8 (5.7%).

Rohypnol (Flunitrazepam)

In 2001, 2.9% of students reported using Rohypnol (Flunitrazepam) (3.3% in males and 2.6% in females). Use was highest for those in grades 9 and 12 (5.2% and 5.4% respectively).

PCP (Phencyclidine)

2.7% of students reported using PCP (Phencyclidine) in 2001 (3.2% of males and 2.2% of females). PCP use was highest for those in grades 9, 10 and 12 (3.8%, 3.7% and 4.4% respectively).

Non-Medicinal Tranquillizers

Fewer than three per cent (2.2%) of students reported using non-medicinal tranquillizers in the past year. Use was higher in males (2.8%) than females (1.7%), and was highest for those in grades 11 and 12 (3.3% and 4.2% respectively).

Crack Cocaine

In 2001, 2.0% of students reported using crack cocaine in the past year. Use was higher for males (2.4%) than females (1.6%). Students in Grade 9 reported the highest use (3.7%).

GHB (Gamma-hydroxybutyrate)

1.2% of students reported using GHB (Gamma-hydroxybutyrate) in the past 12 months. Reported use was higher for males (1.7%) compared to females (0.8%). Students in Grade 10 reported the highest use (3.6%).

Heroin

Approximately one per cent of students reported using heroin in the past year. Reported use was higher for males (1.4%) than females (0.7%). Use was also higher for students in Grade 9 (2.2%). Heroin use has declined over time from 2.0% in 1995 to 1.2% in 2001.

Ice (methamphetamine in the form of "ice")

Ice, or "crystal meth", was reported to have been used by 0.6% of students in 2001. An analysis by sex was not available due to small numbers. Use was highest for students in Grade 11 (1.2%).

Summary

Tobacco Use

Tobacco use among youth aged 15–19 years has been increasing at the national level since the early 1990s. In Ontario, 17% of adolescents aged 12–19 years reported smoking in 1996/97.

Just over three-quarters (76%) of Peel youth aged 12–19 years lived in homes that were smoke-free. This was slightly higher than the proportion of smoke-free homes for Ontario (71%).

One-third (33%) of Ontario women aged 15–49 years, who were current or former smokers and had a child in the past two years, reported smoking during their last pregnancy. As a result, 15% of all children born during this period were exposed to second hand smoke in-utero.

Alcohol Use

Forty-five per cent of Peel adolescents aged 12–19 years reported consuming alcohol in the past 12 months. A higher proportion of males (48%) reported being current drinkers than females (42%) in Peel. Four per cent of adolescents in Ontario were classified as heavy drinkers (consuming 15 or more drinks per week). Heavy drinking rates in Ontario were higher for males than females.

Twenty per cent of Ontario adolescents were binge drinkers (consuming five or more drinks on one or more occasions). In the 12–19 year age group, a higher percentage of males (24%) in Ontario reported being binge drinkers than females (15%).

Seven per cent of Ontario drivers aged 16–19 years reported drinking and driving on one or more occasion in the past 12 months. A higher percentage of males of all ages reported drinking and driving compared to females.

Drug Use

In 2001, one-third of Ontario students reported using any illicit drug (excluding inhalants and prescription drugs) in the past year. Reported use was higher in males than females. Drug use increased by grade between grades 7 and 11, and was highest for students in Grade 11. Illicit drug use increased from 15.7% in 1991 to 33.2% in 2001.

Cannabis, hallucinogens, non-medicinal stimulants, Ecstasy and solvents were reported as the top five drugs, other than alcohol and tobacco, used by students in 2001. Between 1993 and 2001, cannabis use increased from 13% to 28.6%, while Ecstasy use increased from 0.6% to 6.0%. Heroin use declined from 2.0% in 1995 to 1.2% in 2001. Provincial surveys have not included sufficient numbers of Peel children to directly measure drug use in Peel.

Nutrition, Physical Activity and Obesity

Introduction

Current Canadian trends show that a growing proportion of adults and children are becoming overweight and obese.[62] Obesity is a risk factor for many health problems, including cardiovascular disease, hypertension, type II diabetes mellitus, dyslipidemia, gallbladder disease and cancer.[63]

Although some people have a predisposition to obesity, other important risk factors, such as lack of physical activity and food consumption patterns, are modifiable.

This section of the report will describe obesity trends and risk factors for obesity, such as diet and physical activity. Data are not always available for Peel or for Ontario. In such instances, Canadian data will be described as the best estimate.

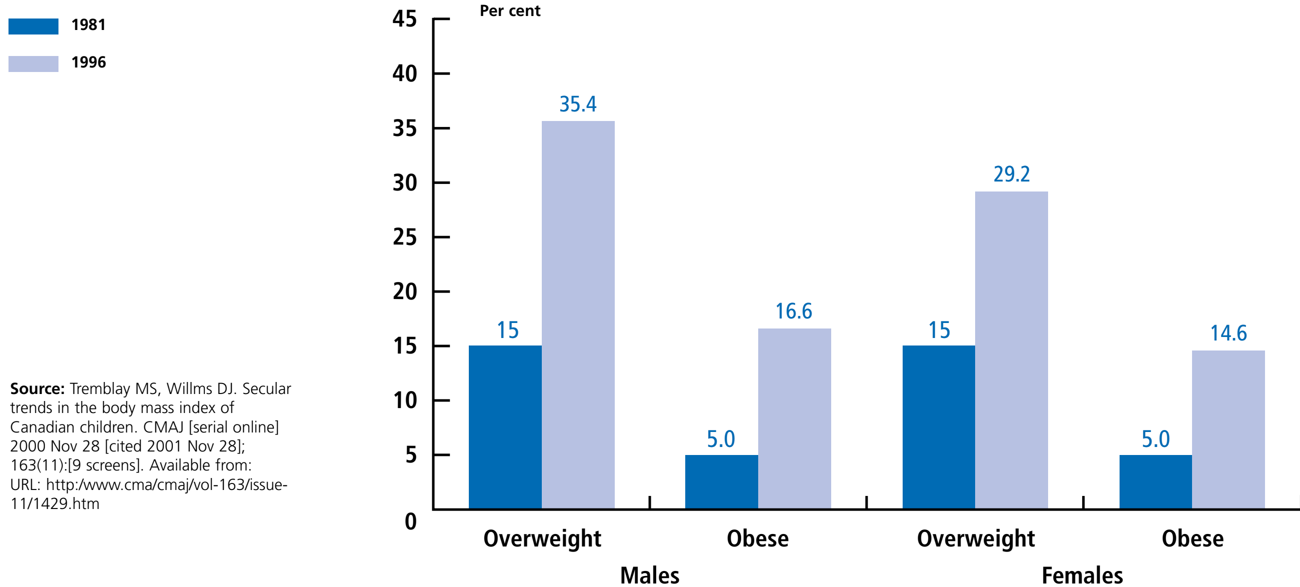
Obesity

Body Mass Index (BMI) is one measure used to assess weight. The Body Mass Index is an internationally-recognized method used to determine if an individual's weight is within a healthy range. It is calculated by dividing weight in kilograms by height in metres squared (pregnant women are excluded).[64] In general, an increased BMI is associated with increased health risk.

Body Mass Index data for children are not available for Peel or for Ontario. Data from a national study showed that in Canada as a whole, the prevalence of overweight female children aged 7–13 years increased from 15% in 1981 to 29% in 1996 (overweight = BMI greater than 85th percentile). The prevalence of overweight male children of the same age increased from 15% in 1981 to 35% in 1996. In addition, the prevalence of obesity among children increased from 5% in 1981 to 17% for boys and 15% for girls in 1996 (obesity = BMI greater than 95th percentile) *(see Figure 9.1 on the following page)*.[65]

Children who are overweight have an increased risk of becoming an obese adult. They are also at higher risk of early adult mortality and development of early adult illnesses.[66,67]

Figure 9.1—Prevalence of Overweight and Obese Children Aged 7–13 Years by Sex, Canada, 1981 and 1996

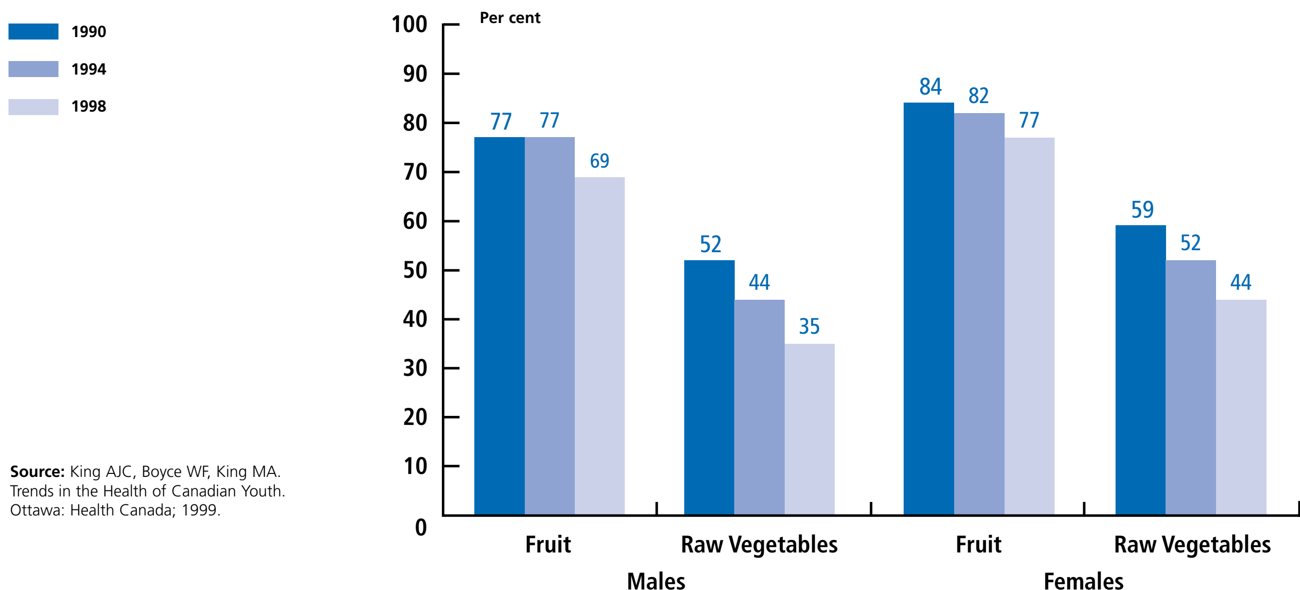


Source: Tremblay MS, Willms DJ. Secular trends in the body mass index of Canadian children. CMAJ [serial online] 2000 Nov 28 [cited 2001 Nov 28]; 163(11):[9 screens]. Available from: URL: http:/www.cma/cmaj/vol-163/issue-11/1429.htm

Nutrition

A World Health Organization (WHO) study[68] collected data on trends in the dietary behaviour of children in grades 6, 8 and 10. Figure 9.2 summarizes information on the proportion of Canadian children in Grade 6 who ate fruits and raw vegetables daily in three surveys conducted in 1990, 1994 and 1998. Although not shown in the graph, data for children in grades 8 and 10 showed similar decreasing trends.

Figure 9.2—Trends in Daily Fruit and Vegetable Consumption among Grade 6 Children by Sex, Canada, 1990–1998



Source: King AJC, Boyce WF, King MA. Trends in the Health of Canadian Youth. Ottawa: Health Canada; 1999.

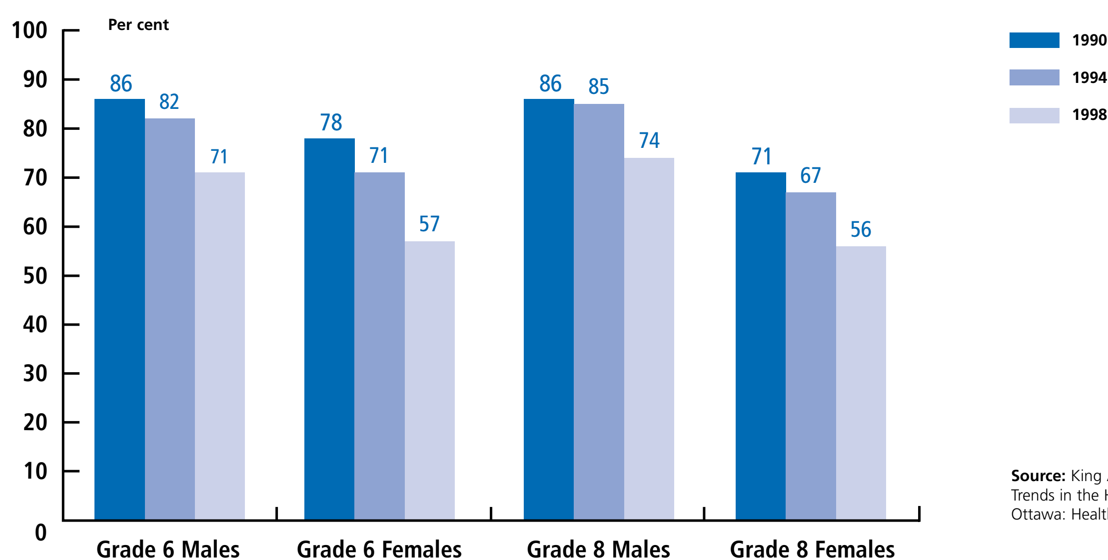
Physical Activity

Lack of physical activity has been found to lead to an increased risk of premature death, obesity, high blood pressure, stroke, colon cancer and depression.[69] Participation in regular physical activity offers many health benefits, including a reduction in the risk of cancer, diabetes, heart disease and osteoporosis, as well as an enhanced feeling of well-being.[62] While it was once thought the level of activity had to be vigorous and the duration continuous, even moderate levels of physical activity appear to safely produce health benefits.[70]

The information about physical activity in children in this report was drawn from two different surveys: the *World Health Organization (WHO) Cross-National Collaborative Study: Health Behaviours in School Children*[68]; and the Ontario Health Survey (OHS) 1996/97. The WHO study examined trends in health behaviours for Canadian children aged 11, 13 and 15 years between 1990 and 1998. The OHS collected physical activity data for the Peel population aged 12 years and older in 1996/97.

In the WHO study, children were asked how often outside of school hours they exercised until they were out of breath or sweating. Figure 9.3 shows the proportion of children in grades 6 and 8 who exercised at this intensity two or more times per week outside of school hours. The decreasing trend in physical activity between 1990 and 1998 was also seen for children in Grade 10 (not shown).

Figure 9.3—Trends in Grades 6 and 8 Children who Exercise Two or More Times per Week Outside School Hours by Sex, Canada, 1990–1998



Source: King AJC, Boyce WF, King MA. Trends in the Health of Canadian Youth. Ottawa: Health Canada; 1999.

According to the Ontario Health Survey (OHS) 1996/97, 72% of Peel residents aged 12–19 years reported they participated in regular exercise. Regular exercise referred to physical activity lasting more than 15 minutes, at least 12 times in the past 12 months. The rates for males and females were similar. The proportion of residents who participated in regular exercise was highest for the 12–19 year age group and decreased with older age groups.

Tracking the frequency of physical activity does not fully measure the health benefits gained by being active. The Physical Activity Index (PAI) groups activities based on energy expenditure. Energy expenditure is calculated using the frequency and time per session of the activity, and also includes metabolic energy cost. In terms of the Physical Activity Index, nearly one-third (32%) of Peel's youth 12–19 years of age were considered inactive.

Summary

There are no data available for Peel children regarding child obesity, diet or physical activity levels. National data shows an increasing trend in the proportion of overweight and obese children and adults. As of 1996, 29% of female children and 35% of male children aged 7–13 years were overweight. The prevalence of obesity was 17% for boys and 15% for girls in this same age group in 1996.

In 1990, 77% of Grade 6 males and 84% Grade 6 females in Canada reported eating fruit daily. By 1998, this proportion had declined to 69% in males and 77% in females. This finding was similar for children in grades 8 and 10. The decline was also mirrored for raw vegetable consumption.

In 1990, 86% of Grade 6 males and 78% of Grade 6 females in Canada reported exercising two or more times per week outside of school hours. By 1998, this proportion had declined to 71% for males and 57% for females. Similar trends were also seen for children in grades 8 and 10. One-third (32%) of adolescents aged 12–19 years in Peel were classified as inactive according to the Physical Activity Index.

Sexual Health

Introduction

Sexuality is an important aspect of health in youth and adulthood. Sexual activity, especially unprotected sexual intercourse, can lead to unwanted pregnancies, increased risk of sexually transmitted diseases (STD) and, in some cases, increased risk of cancer. In Canada in 1995, youth STD rates were three to four times higher than those for all ages.[71] The risk was particularly high for youth between 15–19 years, and especially for females of this age group. In Canada in 1996, females aged 15–19 years had the highest reported rates of chlamydia and gonorrhea infections of any age group.[72]

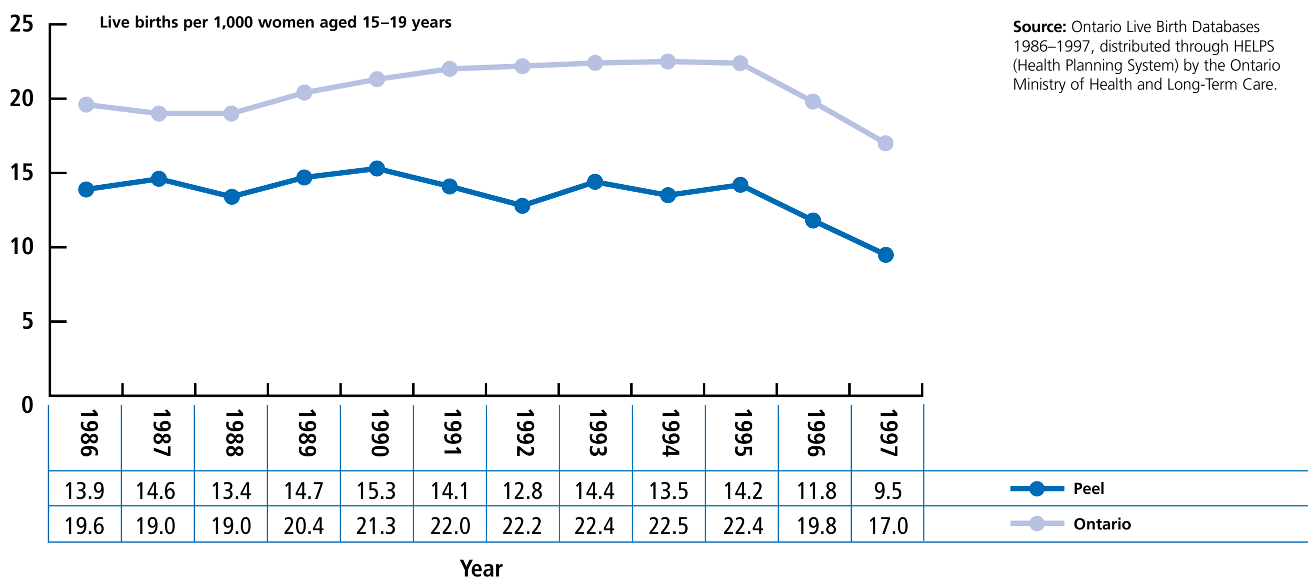
This section of the report presents data on births, pregnancies and abortions, sexual activity and the incidence of sexually transmitted diseases among youth aged 15–19 years. Where Peel data are unavailable, Ontario data are presented.

Teen Births, Abortions And Pregnancies

Births

Between 1986 and 1996, age-specific fertility rates for Peel teenagers (aged 15–19 years) were consistently lower than those for Ontario. Peel's rates of teen births have declined from a high of 15.3 births per 1,000 teenage women in 1990 to a low of 9.5 births per 1,000 in 1997 *(see Figure 10.1)*. In 1997, there were 294 births to teenagers aged 15–19 years.

Figure 10.1—Age-specific Fertility Rates, Young Women Aged 15–19 Years, Region of Peel and Ontario, 1986–1997



	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Peel	13.9	14.6	13.4	14.7	15.3	14.1	12.8	14.4	13.5	14.2	11.8	9.5
Ontario	19.6	19.0	19.0	20.4	21.3	22.0	22.2	22.4	22.5	22.4	19.8	17.0

Source: Ontario Live Birth Databases 1986–1997, distributed through HELPS (Health Planning System) by the Ontario Ministry of Health and Long-Term Care.

Therapeutic Abortions

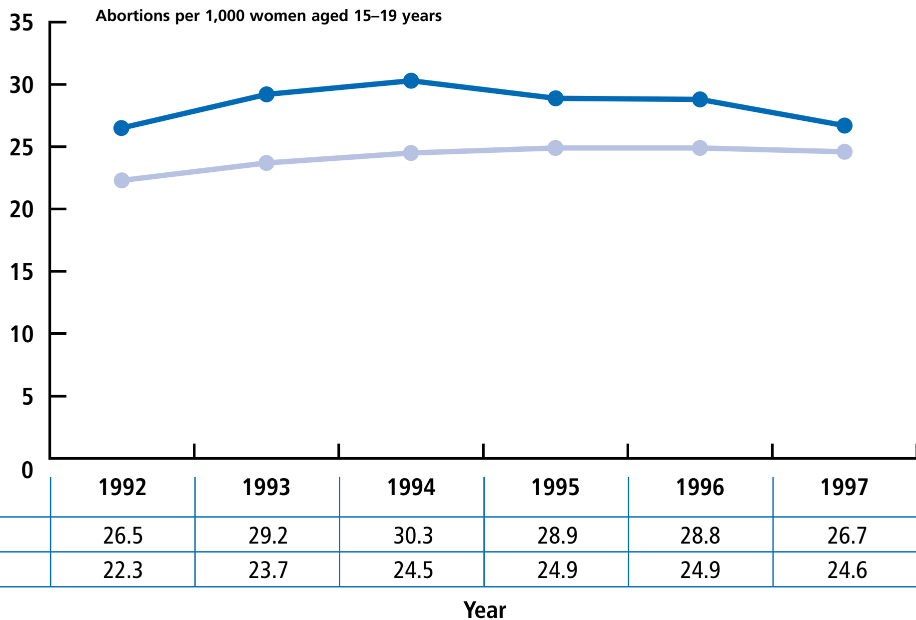
The Ontario Therapeutic Abortion Database includes therapeutic abortions performed in hospitals and clinics. Abortions performed outside the country were not captured; however, Statistics Canada information for 1995 indicated only 0.4% of abortions for Canadian women were performed in the United States.[73]

Teen abortion rates in Peel increased between 1992 and 1994, but have shown a slight decline since that time. Rates in Ontario have remained relatively constant. Peel rates were higher than those of the province, as shown in Figure 10.2.

Figure 10.2—Therapeutic Abortion Rates, Young Women Aged 15–19 Years, Region of Peel and Ontario, 1992–1997

Note: 1996 and 1997 data are preliminary.

Source: Ontario Therapeutic Abortion Database, 1992–1997, distributed through HELPS (Health Planning System) by the Ontario Ministry of Health and Long-Term Care.



	1992	1993	1994	1995	1996	1997
Peel	26.5	29.2	30.3	28.9	28.8	26.7
Ontario	22.3	23.7	24.5	24.9	24.9	24.6

Year

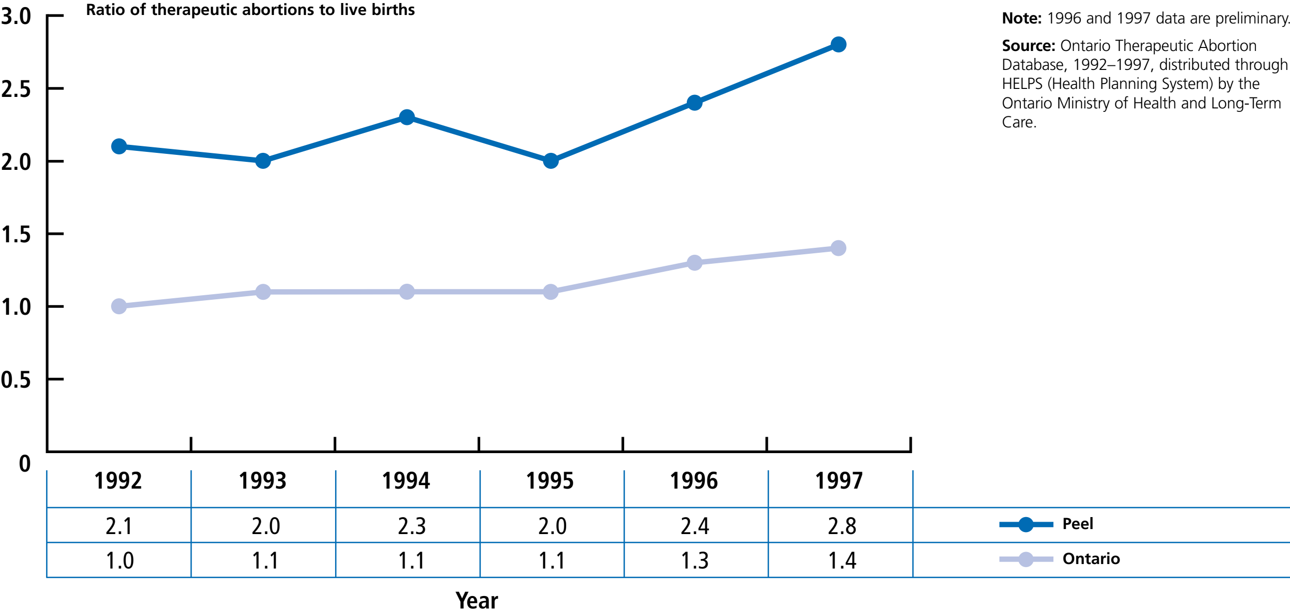
The therapeutic abortion ratio is defined as the number of abortions per live births and helps describe how many women are having abortions versus carrying their baby to term.

Pregnant teenagers in Peel were far more likely to have an abortion than carry to term and deliver, as demonstrated by a therapeutic abortion ratio of 2.0 abortions per live birth or higher during the years 1992–1997 *(see Figure 10.3 on following page)*. The abortion ratio for teens increased during this period and was consistently higher than the ratio for Ontario.

Higher abortion rates in Peel, not just among teens but among women of all reproductive age groups, might be partially explained by the greater availability of abortion services in the Greater Toronto Area as compared to

the rest of the province. A recent analysis of teenage pregnancy rates in Ontario reported similar results—abortion rates rose over the period 1990–1995, especially for those performed in clinics.[74] Several reasons were proposed to explain the increase in the rate of clinic abortions. These included changes to Canada's abortion laws in 1988 and 1991, the elimination of fees with the funding of free-standing clinics in Ontario in 1991, and a possible preference for the anonymity and support provided in clinic settings.

Figure 10.3—Therapeutic Abortion Ratios, Young Women Aged 15–19 Years, Region of Peel and Ontario, 1992–1997



	1992	1993	1994	1995	1996	1997
Peel	2.1	2.0	2.3	2.0	2.4	2.8
Ontario	1.0	1.1	1.1	1.1	1.3	1.4

Pregnancy

Teenage pregnancy rates are defined as the combined total number of live births, stillbirths and abortions per 1,000 women aged 15–19 years. This rate does not include miscarriages or "spontaneous abortions" for which accurate data are more difficult to obtain. The data also did not capture therapeutic abortions that occurred outside of Ontario, although those numbers were likely small.

Teenage pregnancy rates in Peel for the period between 1993 and 1997 were slightly lower than those of the province as a whole, decreasing from 44 to 36 pregnancies per 1,000 female population 15–19 years. In 1997, there were a total of 1,122 pregnancies in teenagers aged 15–19 years in Peel.

In Ontario, teen pregnancy rates also decreased from 47 to 42 pregnancies per 1,000 population 15–19 years. This is consistent with trends in pregnancy rates for all women aged 15–49 years.

Sexual Activity

According to the Ontario Health Survey (OHS) 1996/97, 31% of Peel youth aged 15–19 years reported ever having had sexual intercourse, compared with 37% for Ontario *(see Table 10.1)*. The proportion of males and females that had ever had sexual intercourse was similar.

Table 10.1—Proportion of Population Aged 15–19 Years that Reported Having Had Sexual Intercourse, by Sex, Region of Peel and Ontario, 1996/97

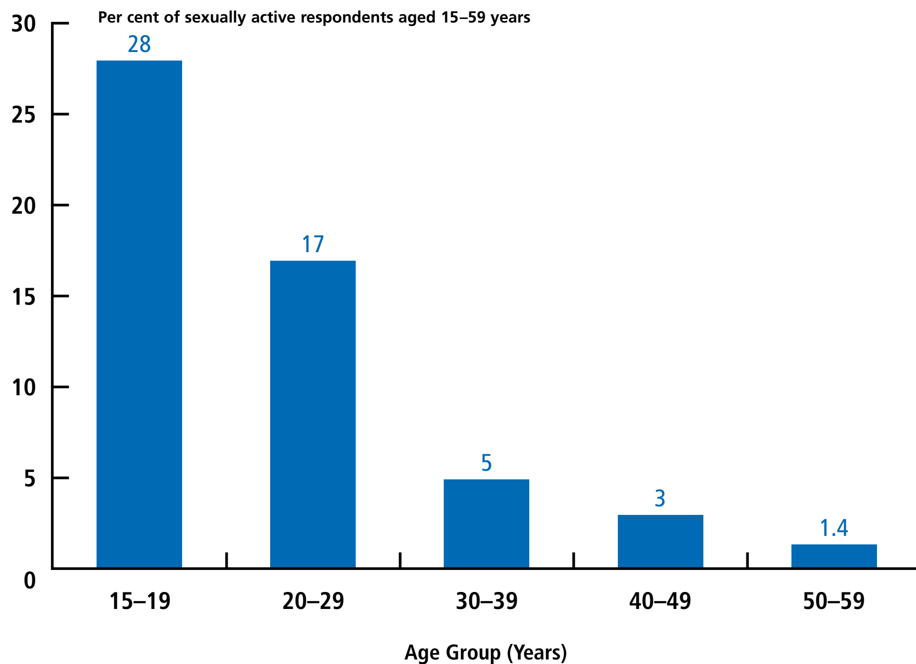
Sexual Activity	Region of Peel			Ontario		
	Male	Female	Both	Male	Female	Both
Ever had sexual intercourse	NR	NR	31%	37%	36%	37%
Never had sexual intercourse	NR	NR	54%	54%	53%	54%
Refused to respond	NR	NR	NR	8%	11%	10%

NR= Not released due to small numbers.

Source: Ontario Health Survey (OHS) 1996/97, distributed by the Ontario Ministry of Health and Long-Term Care.

In Ontario, a higher proportion (28%) of teens aged 15–19 years reported having multiple sexual partners in the past 12 months than older age groups *(see Figure 10.4)*.

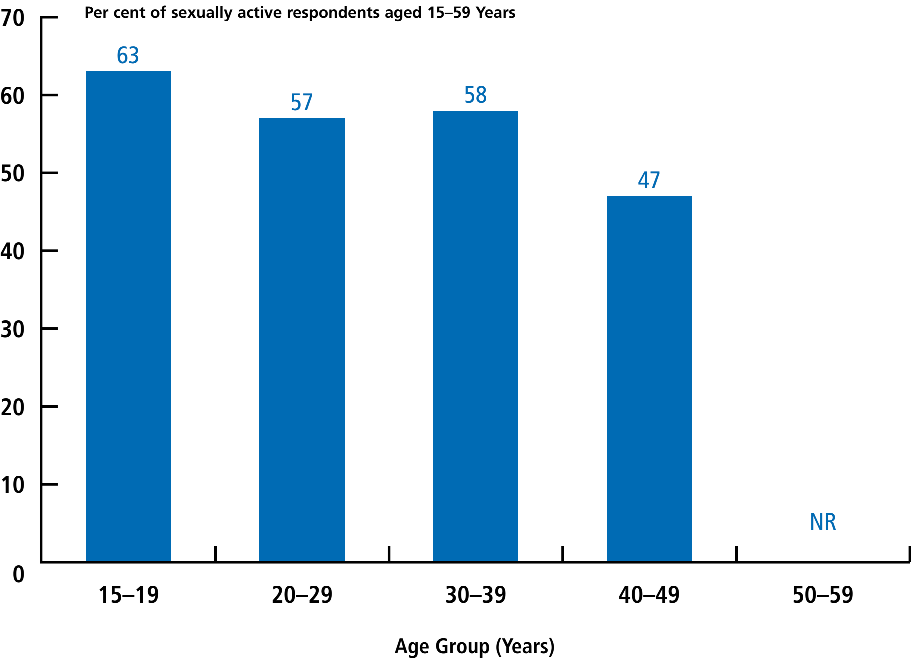
Figure 10.4—Proportion of Multiple Partners by Age Group, Ontario, 1996/97



Source: Ontario Health Survey (OHS) 1996/97, distributed by the Ontario Ministry of Health and Long-Term Care.

Figure 10.5 shows the proportion of sexually active respondents in Ontario by age group who reported using a condom in the past 12 months. Peel data could not be released due to small numbers. "Using a condom" includes use by either a male or female during intercourse. A slightly higher proportion (63%) of those in the youngest age group (15–19 years) reported always using a condom compared to those in older age groups.

Figure 10.5—Proportion of Population Who Always Used a Condom in Past 12 Months* by Age Group, Ontario, 1996/97



* in a relationship lasting less than 12 months.

NR= Not released due to small numbers.

Source: Ontario Health Survey (OHS) 1996/97, distributed by the Ontario Ministry of Health and Long-Term Care.

Sexually Transmitted Diseases

Sexually transmitted diseases (STDs) can be caused by bacteria or viruses that are found in the blood, semen or vaginal fluids of an infected person.[75] Transmission can occur from person-to-person during any kind of sexual intercourse (vaginal, anal or oral), by sharing needles or personal belongings (razors, etc.), or by tattooing and body piercing with unsterilized equipment.[75] Some STDs cause sores and touching the sores can spread the infection.[75]

Chlamydia, gonorrhea, syphilis, acquired immunodeficiency syndrome (AIDS), hepatitis B and hepatitis C are STDs which are legally reportable to the local Medical Officer of Health under the *Health Protection and Promotion Act (HPPA)*.[76] For this report, Reportable Disease Information System (RDIS) data on the most common STDs in Peel—chlamydia, gonorrhea and hepatitis B—were obtained for Peel for the years 1991–2000. Ontario data for the years 1991–1999 were obtained from the Public Health Branch of the Ontario Ministry of Health and Long-Term Care.

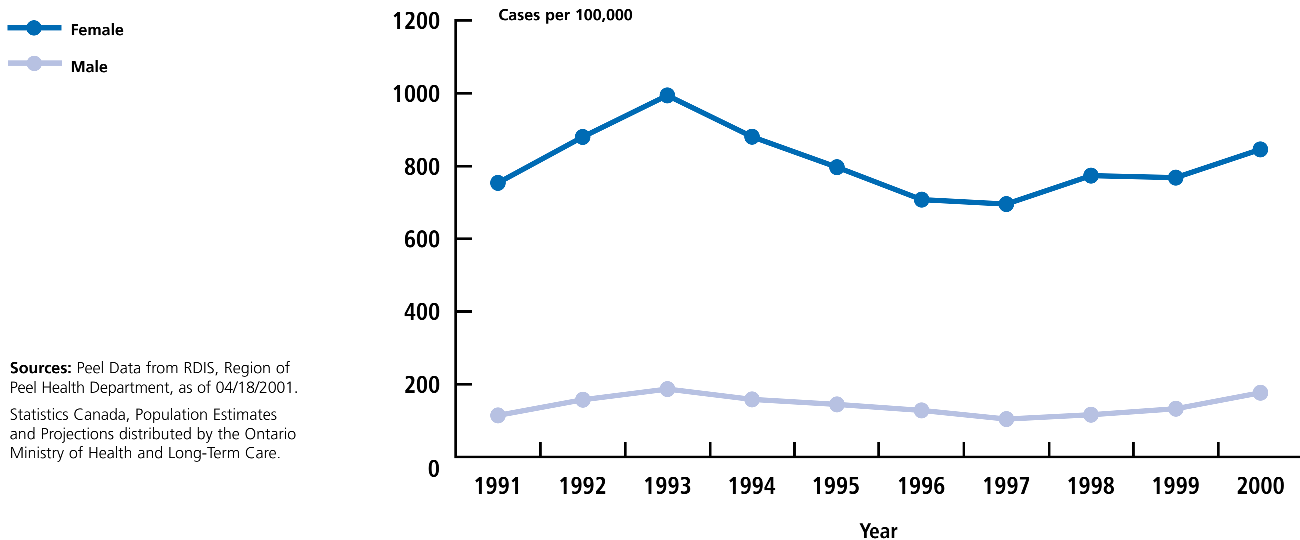
Chlamydia

Genital chlamydia is the most common bacterial sexually transmitted disease in Peel, Ontario[77] and Canada.[78] It is both preventable and treatable. However, it does not always produce symptoms and thus people may spread it without knowing they are infectious.[79] In females, a painful, long-term condition called pelvic inflammatory disease may result.[79] Chlamydial infections can result in infertility[78,79,80] and increase the risk of a tubal pregnancy.[78,80] In addition, babies born to women with untreated chlamydia can develop severe eye and lung infections.[79,80]

Cases of chlamydia were more common among females than males in both Peel and Ontario, with rates and numbers being much higher for females, as shown in Figure 10.6. This may be due to higher testing[78] and reporting rates among females. In 2000, there were 348 cases of chlamydia in 15–19 year olds in Peel. Eighty-two per cent of the cases were in females.

In Peel, chlamydia rates for both males and females fluctuated over the past ten years, with some indication of an increasing trend since 1997 *(see figure 10.6)*. Although not shown, rates of chlamydia for both males and females were typically below those for Ontario.

Figure 10.6—Incidence of Chlamydia by Sex, Youth Aged 15–19 Years, Region of Peel, 1991–2000



Sources: Peel Data from RDIS, Region of Peel Health Department, as of 04/18/2001.

Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

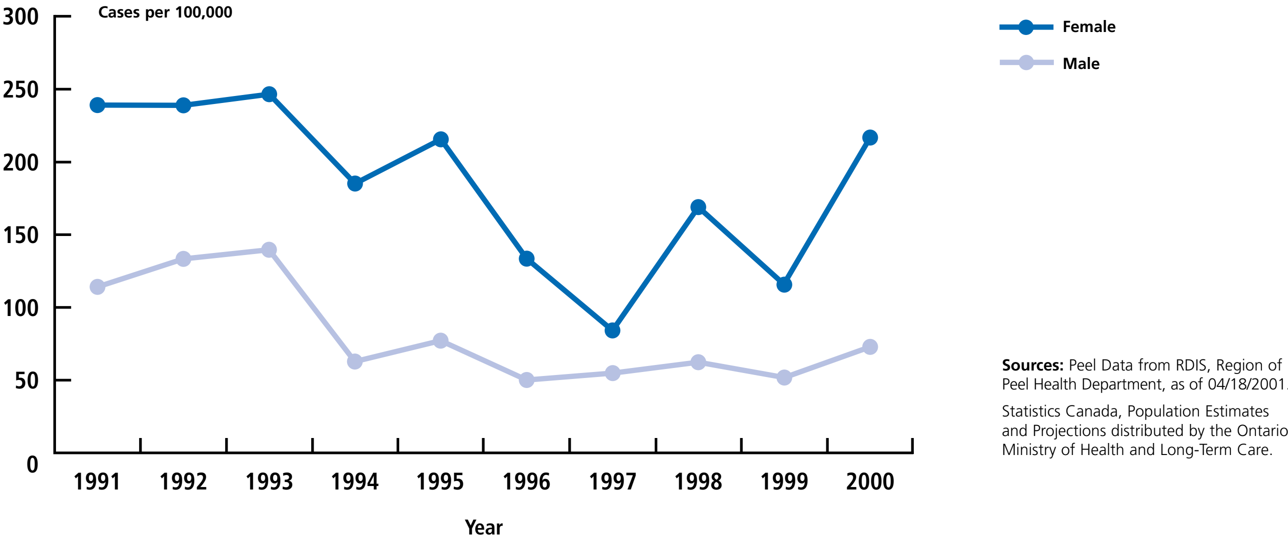
Gonorrhea

This sexually transmitted disease is caused by the bacteria Neisseria gonorrhea and like chlamydia, may not produce any symptoms. It is preventable through the use of condoms and treatable using specific antibiotics.[81] Like chlamydia, it can cause pelvic inflammatory disease, infertility or tubal pregnancy in women.[77, 81] As well, babies born to women with untreated gonorrhea can develop severe eye infections.[82] In men, sterility could result if the infection spreads to the testicles or prostate gland.[81]

Figure 10.7 shows rates of gonorrhea over time for both males and females aged 15–19 years in Peel. In 2000, there were 99 cases of gonorrhea in teenagers aged 15–19 years in Peel. Seventy-four per cent of these cases were in females.

Gonorrhea incidence rates for males have remained stable since 1994. For females, rates have fluctuated over time. Although not shown, rates of gonorrhea in males in Peel were higher than those in Ontario between 1995 and 1999. Rates of gonorrhea for females in Peel were higher than Ontario rates between 1992 and 1999.

Figure 10.7—Incidence of Gonorrhea by Sex, Youth Aged 15–19 Years, Region of Peel, 1991–2000



Sources: Peel Data from RDIS, Region of Peel Health Department, as of 04/18/2001.

Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

Hepatitis B

Hepatitis B infections are caused by a virus that can be transmitted through sexual contact with an infected person or by sharing personal items, including toothbrushes and razors, as well as needles used for injecting drugs, with an infected person.[83] It can also be transmitted from a mother to her baby during childbirth.[84] Hepatitis B virus can cause a serious infection of the liver, with symptoms of tiredness, loss of appetite and jaundice. Long-term infection can lead to chronic liver disease, cirrhosis and cancer of the liver.[83]

The crude incidence rate of hepatitis B for both males and females of all ages declined in Peel between 1991 and 2000. Over this period, there were eight cases of hepatitis B in males aged 15–19 years and seven in females of the same age.

Summary

Births

Fertility rates for females aged 15–19 years in Peel were lower than those for Ontario, and have declined slightly since 1990.

Abortions

Between 1992 and 1997, therapeutic abortion rates for youth aged 15–19 years were higher in Peel than Ontario. The therapeutic abortion ratio in Peel was also higher, indicating that a larger proportion of pregnant teens in Peel chose to have an abortion than did those in Ontario.

Higher abortion rates in Peel might be partially explained by the greater availability of abortion services in the Greater Toronto Area (than in the rest of the province).

Pregnancy

For youth aged 15–19 years in Peel, pregnancy rates declined slowly between 1994 and 1997. In 1997, the pregnancy rate for teens was 36 per 1,000 women aged 15–19 years. Overall, between the years 1993 and 1997, teen pregnancy rates in Peel were lower than in Ontario as a whole.

Sexual Activity

In 1996/1997, 31% of Peel youths aged 15–19 years had engaged in sexual intercourse.

In Ontario, 28% of teens aged 15–19 years who were sexually active reported having had two or more partners in the past year. Of those with multiple partners, 63% reported they "always" used a condom. This finding was higher than in older age groups.

Sexually Transmitted Diseases

Chlamydia and gonorrhea were the most prevalent sexually transmitted diseases in adolescents aged 15–19 years. Age-specific rates of chlamydia were higher for females than for males; these rates have remained stable over time. Rates of gonorrhea were higher in females than males aged 15–19 years. Age-specific rates in this age group were lower than the period prior to 1994, and with the exception of data for the year 2000, these rates have remained stable since that time.

Leading Causes of Child Mortality and *Hospitalization in Peel*

Introduction

This section provides an overview of the leading causes of mortality and hospitalization among children aged one to nine years and 10–19 years. Infant mortality (deaths under one year of age) is presented in the chapter titled *Infant Health—the First Year of Life (see page 23)*.

Both mortality and hospitalization rates among children aged one to nine years and 10–19 years were much lower than rates for infants or adults. Due to the small number of deaths each year, mortality from selected causes was examined by combining the data for the period from 1986–1996. Data for hospitalization are presented for 1998, the most recent available year of data.

The hospitalization data here reflects the diagnosis at the time of discharge from a hospital and do not include diagnoses made in hospital emergency rooms, clinics or physicians' offices in which no hospital admission occurred. Hospital separations represent the number of episodes of hospitalization and not the number of children or youth hospitalized. A child hospitalized on numerous occasions would have been counted once for each episode according to the discharge diagnosis.

Table 11.1—Number and Proportion of Deaths and Crude Death Rates by Leading Cause for Children Aged 1–9 and 10–19 Years, Region of Peel and Ontario, 1986–1996 Combined

Leading Cause	Age 1–9 Years				Age 10–19 Years			
	Peel Number	Peel Per Cent	Peel AAR*	Ontario AAR*	Peel Number	Peel Per Cent	Peel AAR*	Ontario AAR*
Injury and Poisoning (All)	**61**	**30.0**	**5.3**	**8.3**	**179**	**58.5**	**14.6**	**21.3**
Motor vehicle traffic collisions	23	11.3	2.0	3.2	101	33.0	8.3	11.1
Suicide	<5	NR	NR	NR	39	12.7	3.2	4.4
Other transport collisions†	<5	NR	NR	0.1	7	2.3	0.6	0.8
Homicide	5	2.5	0.4	0.5	6	2.0	0.5	1.0
Cancer (All)	**36**	**17.7**	**3.1**	**3.7**	**41**	**13.4**	**3.4**	**4.0**
Lymphatic and haematopoietic	17	8.4	1.5	1.3	21	6.9	1.7	1.7
Congenital Anomalies	**27**	**13.3**	**2.4**	**2.9**	**16**	**5.2**	**1.3**	**1.3**
Nervous System and Sense Organ Disorders	**15**	**7.4**	**1.3**	**1.8**	**12**	**3.9**	**1.0**	**1.8**
Respiratory System (All)	**10**	**4.9**	**0.9**	**1.2**	**15**	**4.9**	**1.2**	**0.9**
Asthma	<5	NR	NR	0.1	7	2.3	0.6	0.3
Circulatory System	**7**	**3.4**	**0.6**	**0.1**	**8**	**2.6**	**0.7**	**1.2**
All Other Causes	**47**	**23.2**	**4.1**	**4.1**	**35**	**11.4**	**2.9**	**4.1**
All Causes Total	**203**	**100.0**	**17.7**	**22.6**	**306**	**100.0**	**25.0**	**34.6**

* Average annual rate per 100,000.
† Includes railway, other road vehicle, water transport, air and space, and other vehicle collisions.

NR= Not released due to small numbers.

Sources: Ontario Mortality Database 1986–1996, distributed through HELPS (Health Planning System) by the Ontario Ministry of Health and Long-Term Care.
Statistics Canada, Population Estimates and Projections, distributed by the Ontario Ministry of Health and Long-Term Care.

Table 11.2—Number, Proportion and Crude Hospitalization Rate by Leading Cause for Children Aged 1–9 Years by Sex, Region of Peel and Ontario, 1998

Leading Cause	Males				Females			
	Peel Number	Peel Per Cent	Peel Rate*	Ontario Rate*	Peel Number	Peel Per Cent	Peel Rate*	Ontario Rate*
Respiratory System (All)	**944**	**35.6**	**1405.2**	**1288.5**	**574**	**29.4**	**903.1**	**874.2**
Asthma	405	15.3	602.9	461.0	234	12.0	368.2	257.8
Pneumonia/influenza	224	8.5	333.4	303.1	160	8.2	251.7	250.7
Injury and Poisoning (All)	**304**	**11.5**	**452.5**	**462.3**	**202**	**10.3**	**317.8**	**326.2**
Accidental fall	117	4.4	174.2	180.4	85	4.4	133.7	146.4
Accidental poisoning	28	1.1	41.7	42.7	16	0.8	25.2	30.1
Transport collisions†	22	0.8	32.7	27.1	10	0.5	15.7	14.8
Motor vehicle traffic collisions	18	0.7	26.8	32.7	20	1.0	31.5	21.7
Digestive System Diseases	**274**	**10.3**	**407.9**	**385.0**	**229**	**11.7**	**360.3**	**295.3**
Infectious and Parasitic Diseases	**231**	**8.7**	**343.9**	**222.6**	**193**	**9.9**	**303.7**	**194.1**
Endocrine, Nutritional and Metabolic Diseases and Immunity Disorders (All)	**126**	**4.8**	**187.6**	**185.6**	**120**	**6.1**	**188.8**	**180.4**
Diabetes	13	0.5	19.4	26.4	21	1.1	33.0	27.9
Disorders of Blood and Blood Forming Organs	**90**	**3.4**	**134.0**	**91.7**	**67**	**3.4**	**105.4**	**71.5**
Congenital Anomalies	**82**	**3.1**	**122.1**	**161.5**	**66**	**3.4**	**103.8**	**110.7**
Nervous System and Sense Organ Disorders	**73**	**2.8**	**108.7**	**147.9**	**67**	**3.4**	**105.4**	**118.6**
Diseases of the Skin and Subcutaneous Tissue	**60**	**2.3**	**89.3**	**78.4**	**46**	**2.4**	**72.4**	**66.8**
Musculoskeletal System and Connective Tissue (All)	**46**	**1.7**	**68.5**	**70.8**	**38**	**1.9**	**59.8**	**54.4**
Arthropathies	18	0.7	26.8	20.9	13	0.7	20.5	16.3
All Other Causes	**420**	**15.8**	**625.2**	**655.3**	**352**	**18.0**	**553.8**	**558.5**
All Causes Total	**2650**	**100**	**3944.7**	**3749.7**	**1954**	**100**	**3074.3**	**2850.8**

* Rate per 100,000 population.
† Includes railway, other road vehicle, water transport, air and space, and other vehicle collisions.

Sources: Canadian Institute for Health Information (CIHI) 1998, distributed by the Central East Health Information Partnership (CEHIP).
Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

Leading Causes of Hospitalization—Children Aged 10–19 Years

Table 11.3—Number, Proportion and Crude Hospitalization Rate by Leading Cause for Children Aged 10–19 Years by Sex, Region of Peel and Ontario, 1998

Leading Cause	Males				Females			
	Peel Number	Peel Per Cent	Peel Rate*	Ontario Rate*	Peel Number	Peel Per Cent	Peel Rate*	Ontario Rate*
Complications of Pregnancy (All)	**NA**	**NA**	**NA**	**NA**	**490**	**26.4**	**762.1**	**1255.8**
Normal delivery					53	2.9	82.4	161.9
Abortion					31	1.7	48.2	58.1
Injury and Poisoning (All)	**326**	**22.5**	**479.7**	**632.9**	**192**	**10.4**	**298.6**	**382.4**
Accidental fall	107	7.4	157.5	158.3	41	2.2	63.8	74.5
Suicide	48	3.3	70.6	64.8	89	4.8	138.4	182.8
Assault	29	2.0	42.7	47.7	0	0	0	11.1
Motor vehicle traffic collisions	27	1.9	39.7	86.5	29	1.6	45.1	58.5
Transport collisions†	19	1.3	28.0	48.0	6	0.3	9.3	22.7
Accidental poisoning	9	0.6	13.2	16.2	6	0.3	9.3	16.8
Digestive System Diseases	**218**	**15.1**	**320.8**	**381.2**	**160**	**8.6**	**248.9**	**362.5**
Respiratory System (All)	**173**	**12.0**	**254.6**	**255.5**	**193**	**10.4**	**300.2**	**302.1**
Asthma	49	3.4	72.1	69.9	63	3.4	98.0	91.5
Pneumonia/influenza	21	1.5	30.9	41.9	22	1.2	34.2	40.2
Mental Disorders (All)	**148**	**10.2**	**217.8**	**303.5**	**214**	**11.5**	**332.9**	**507.0**
Affective psychosis	27	1.9	39.7	59.6	61	3.3	94.9	116.3
Schizophrenia	18	1.2	26.5	33.5	14	0.8	21.8	23.2
Depression	13	0.9	19.1	26.1	22	1.2	34.2	59.6
Neurosis/anxiety	8	0.6	11.8	18.4	9	0.5	14.0	38.7
Musculoskeletal System and Connective Tissue (All)	**81**	**5.6**	**119.2**	**130.4**	**80**	**4.3**	**124.4**	**152.8**
Arthropathies	37	2.6	54.4	53.6	31	1.7	48.2	60.1
Genitourinary System Diseases	**55**	**3.8**	**80.9**	**77.9**	**83**	**4.5**	**129.1**	**201.8**
Disorders of Blood and Blood Forming Organs	**49**	**3.4**	**72.1**	**48.1**	**47**	**2.5**	**73.1**	**51.5**
Infectious and Parasitic Diseases	**48**	**3.3**	**70.6**	**71.7**	**54**	**2.9**	**84.0**	**70.9**
Nervous System and Sense Organ Disorders	**47**	**3.2**	**69.2**	**89.1**	**47**	**2.5**	**73.1**	**85.3**
Endocrine, Nutritional and Metabolic Diseases, and Immunity Disorders (All)	**44**	**3.0**	**64.7**	**80.6**	**46**	**2.5**	**71.5**	**97.1**
Diabetes	24	1.7	35.3	52.0	24	1.3	37.3	56.3
All Other Causes	**258**	**17.8**	**379.7**	**409.0**	**247**	**13.3**	**384.2**	**463.3**
All Cause Total	**1447**	**100**	**2129.4**	**2479.8**	**1853**	**100**	**2882.2**	**3932.5**

* Rate per 100,000 population.
NA= Not applicable.
† Includes railway, other road vehicle, water transport, air and space, and other vehicle collisions.

Sources: Canadian Institute for Health Information (CIHI) 1998, distributed by the Central East Health Information Partnership (CEHIP).
Statistics Canada, Population Estimates and Projections distributed by Ontario Ministry of Health and Long-Term Care.

Summary

Mortality

The average annual mortality rate between 1986 and 1996 for one to nine year olds and 10–19 year olds in Peel was lower than that of Ontario. The top three causes of death for both age groups were injuries and poisoning, cancer and congenital anomalies.

Hospitalization

In Peel in 1998, the top three causes of hospitalization among children aged one to nine years were respiratory system diseases, injury and poisoning, and digestive system diseases. Hospitalization rates for both males and females aged one to nine years were slightly higher than for Ontario.

In Peel in 1998, the top three causes of hospitalization for male children aged 10–19 years were injury and poisoning, digestive system diseases and respiratory system diseases for males. During the same year, the top three causes of hospitalization for female children aged 10–19 in Peel were complications of pregnancy, mental disorders and respiratory system diseases.

Hospitalization rates for males and females aged 10–19 years in Peel were lower than for Ontario.

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